

Ethereum Localism

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Grounding the Future of Coordination

Collated by the Open Machine

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ETHEREUM LOCALISM

a collection of essays
on ethereum localism

Collated by the Open Machine

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An Introduction to Ethereum Localism

[Forthcoming]

So we worshipped at the altar of *model*. It was like blowing the dust from the cover an old book that no one had bothered to engage, assuming it was all written, only to open it and find that the words were unsettled, ethereal, too secure in their unquestioned languishing to mean anything in particular at all. Money, institution, market, globe - the terms flickered like candle flame, half real.

When rescued from the attic and brought once again to the ground floor, to be realized, the models turned on like zoetrope machines, shooting out tethers to bring the surround along in their uncanny circles. They were entangled, creating, in their abstraction, material effects (maybe they were *more* material for being abstract). Down from their throne, they seemed eager for play, for new games of reciprocity with the world in its gossiping momentum. Money, institution, market, globe.. these kaleidoscope projections were after all mere machines, here on the ground with us. We went to tinkering.

The Cosmo-Local Plan for our Next Civilization

Towards a convergence of the local bioregional resilient production efforts with the global coordination and ‘Capital for the Commons’ capacities of Web3

by Michel Bauwens

In this essay I want to summarize the specificity of the cosmo-local approach to the present and future of human civilization. Cosmo-localism is a third option, next to the two great competing options of the Western ‘mercantile’ world order and the neo-sovereignist alternatives that are based on a renewed control of associated nation-states. In these two options, the digital is merely used to reinforce existing logics of power and control; in cosmo-localism, the digital is used to fundamentally reorganize the world order.

So let us first define what we mean by adding these two contradictory terms together: the *local* and the *cosmic*.

Cosmo-localism is an approach that aims to combine resilient and regenerative forms of localized production, closer to demand, but combined with access to globally shared knowledge commons, translocal protocols of cooperation, and access to forms of capital that are compatible with commons-oriented approaches to local production. Each of the three elements of this definition is an important characteristic.

It is sometimes summarized with the adage:

What is heavy should be local, and what is light should be global and shared.

Why is this a desirable goal ?

- The current global system of production and trade is reported to use three times more of its resource use for transport, not for making¹. This creates a profound 'ecological', i.e. biophysical and thermodynamic, rationale for relocalizing production
- The current system of production is based on mass production, and requires the constant creation of new desires and needs, which need to be created through advertising, and require massive forms of potentially unnecessary material production
- The current system is 'closed source', and is carried out by competitive agents that do not share innovations for very long time periods; the competitiveness of these agents requires behaviors that externalize costs to the public and the state institutions
- There is also a 'temporal' element to this analysis: we are no longer in a period of non-problematic globalization, but in a chaotic transition with increased and potentially violent competition for scarce resources, which requires de-risking supply chains.

A cosmo-local approach has obvious advantages in this context:

- Relocalizing production saves a sizeable amount of matter and energy
- Production on demand can eliminate the huge impetus to create artificial needs and desires
- If we add open source knowledge, this means that any innovation anywhere in the common network is instantly available to every node in the network ; this means that the switch in growth from exclusively focusing

¹ Michel Bauwens, "Three times as many raw materials are used to export traded goods than are used in their manufacture," P2P Foundation, <https://blog.p2pfoundation.net/three-times-as-many-raw-materials-are-used-to-export-traded-goods-than-are-used-in-their-manufacture/2013/09/15>

on efficiency, towards a balance between efficiency and resilience, can be accelerated. This is what we have called 'True Accelerationism'.²

- In addition, adding mutualizing forms of governance and ownership, can also have extraordinary effects on the amount of needed energy and materials. For example, in the context of shared transport, one shared car can replace 9 to 13 private cars, without any loss of mobility. A 'factor 20' movement can be imagined, in fact, already exists, which aims to reduce energy usage by 95%, coupled with significant savings in the use of materials.³ This movement is already active in various European cities.

The current techno-logical conditions make such a shift eminently imaginable, and technically feasible, although there are still huge social and political obstacles in the way of such a shift.

On the positive side of the ledger:

- Open source technology, now responsible for 80% of all used software⁴, in the form of free software, shared knowledge, and open designs, creates the capacity to share knowledge and experience over networks, rapid collective learning, and accelerated innovation
- Web3 and crypto have created the capacity to fund shared infrastructures in open eco-systems, through processes such as public goods funding⁵; other advances in funding make it possible to move towards bioregional regenerative funding ecosystems⁶
- Maker technology, including advances in 3D printing, make it possible to move towards distributed manufacturing, using a 'on demand' logic of production
- Advances in regenerative practices, such as the circular economy, biomimicry, biodegradable materials, make more sustainable production realistic. This includes new paradigms of productive organization, such

2 "True Accelerationism," <https://blog.p2pfoundation.net/?s=True+Accelerationism>

3 "Factor 20 Reduction," https://wiki.p2pfoundation.net/Factor_20_Reduction

4 "Linux Statistics," <https://gitnux.org/linux-statistics/>

5 "Regenerative Public Goods for Sustainable Communities," https://www.youtube.com/watch?v=q-xlv_D7yqo

6 "What is a BFF?" <https://www.biofi.earth/what-is-a-bff>

as the 'mycelium' paradigm which has a certain popularity in the Web3 movement.⁷

- The blockchain, as universal ledger⁸, creates a vast capacity for trans-local coordination, and creates a new fourth sector model of 'organized networks based on common infrastructure'⁹
 - A culture of translocal cooperation and mutual learning has been created, creating capacities for digital nomads for being the catalysts for translocal production alliances.¹⁰ With catalyst, I do not necessarily mean they are the founders and creators, but that they play vital roles as facilitators between the various locales. Imagine a global coalition between bioregional guilds rooted in the resilient production of their locales, aided and abetted by the more collective 'cosmic' knowledge of the appropriate 'cosmic' guilds.¹¹
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What is heavy should be local, and what is light should be global and shared.

- Millions of people have turned to mutualized, regenerative and resilient local production and consumption practices, in all domains of production¹²

7 Jeff Emmett & Jessica Zartler, Exploring MycoFi: Mycelial Design Patterns for Web3 and Beyond (Mycopunk, 2024), <https://greenpill.network/pdf/mycofi.pdf>

8 Michael Bauwens & Alex Pazaitas, P2P Accounting For Planetary Survival," P2P Foundation, https://wiki.p2pfoundation.net/images/AccountingForPlanetarySurvival_def.pdf

9 "Fourth Sector," https://wiki.p2pfoundation.net/Fourth_Sector

10 "Somewheres, Nowheres, Everywheres," https://wiki.p2pfoundation.net/Somewheres,_Nowheres,_and_Everywheres

11 "Bioregional DAOs vs. Guild DAOs," https://wiki.p2pfoundation.net/Bioregional_DAOs_vs_Guild.DAOs

12 Michel Bauwens, Rok Kranjc, Jose Ramos, "Commons Economies in Action: Mutualizing Urban Provisioning Systems," https://wiki.p2pfoundation.net/images/Commons_Economies_in_Action.pdf

It may be useful to distinguish the 'players' that we see involved in such a transformation:

- The localist initiators; these are the locally rooted people who express their concern with local supply chains and take local initiatives to remedy the problems that they are seeing, or acting out value choices
- The nomadic elements. Elsewhere, I have distinguished between two potential kinds of 'nomadic' players:
 - o The 'Nowheres': these are nomads that are seeking the best options amongst locales, bound to their own agendas only, and arbitraging between nation-states and places. This may be seen as an unsustainable exit strategy, and carries certain dangers. One of them is the perception of parasitical or exploitative activity. A certain 'rootlessness' may be attached to this form of human identity.
 - o The Everywheres are on the contrary nomadic elements that are willing to be of service to cosmo-local productive economic alliances, seeding various locales with the trans-local experience, both of other locales they may have visited, but also of the network itself.
- It is possible to imagine the interplay in the form of two different complementary guilds; While the 'bioregional' and local guilds consists of the players who focus on their local geographic role, as part of a local productive economy; the translocal guilds organizes the nomadic members of the network.
- The third important players are the providers of 'capital for the commons'. In the new cosmo-local paradigm, one can distinguish different 'economic players' as well:
 - o The 'open source' contributors, are all those that contribute, in one way or another, to the shared knowledge necessary for the productive project to succeed
 - o The entrepreneurs, or as we would like to call them, the 'entredonneurs'¹³. These are all those that add value to the open source common base, and create 'value for the market'. However, they are all co-depen-

13 "Entredonneur," <https://wiki.p2pfoundation.net/Entredonneur>

dent on the common pool. This is why the moniker of 'entrepreneur' makes sense, as they are not merely extracting for their own benefit and profit, but realizing that their success depends on their common advantages through their networked production community. The search is on for the transformation of the more extractive forms of ownership, to more generative forms of property, in which there is more of balance between the market players and the commons they are interdependent with.¹⁴

o In that context, it is important to acknowledge that the new economic institution is not just a corporation, or even a 'cooperative', but an 'organized network with commons'. Like the example of the DAO, this is a 'meta-container' that can organize at a higher level of integration, non-market (permissionless contributions), market (commodity-based value), but also public players.

o But all of these arrangements also need capital inflows, but a particular kind of capital that is compatible with the development of commons-based networks.

Elsewhere, we have provided a 'global history of regulation', which indicates the systemic characteristics that the new system must have.¹⁵

The essential and simplified of regulation would be the following:

- a long period of participation of the human in the natural world, without specific protective institutions
- the organized societies of the classical civilization period, in which the Empire or the Monarchy, or even the Trading State, would limit the power of the markets to disrupt organized society. In this model, the local protective capacity of the local commons was largely respected.
- The capital-state-nation model of the modern period, in which the state is supposed to regulate the market, and subjected to the political ebb and

14 Marjorie Kelly, "Generative vs. Extractive Ownership" in *Owning Our Future: The Emerging Ownership Revolution. Journeys to a Generative Economy*, Berrett-Koehler Publishers, 2012, 11-12

15 Michel Bauwens, "A Global History of Societal Regulation: Why Commons-based Institutions Now Need to Regulate the Market and State 'Cosmo-locally',"
<https://4thgenerationcivilization.substack.com/p/a-global-history-of-societal-regulation>

flow of market, state and social power blocs.

- The globalization period since the 1980s, in which transnational financial forces have surpassed the capacity of state forces to regulate them.

In this context, the cosmo-local option is not focused neither on a belief in the total self-regulation of market forces (including in the form of multis-takeholder governance alliances as proposed by the WEF ideology), nor just a neo-sovereignist restoration of the inter-nation state system, but on something novel: the creation of a new type of commons-based regulatory mechanism that can operate on a global level.

In the short term, the cosmo-local option and strategy is concerned with translocally strengthening alliances of locally-oriented regenerative production.

The goal to be imagined is the following:

- On the local level we have the existence of allied local productive actors which can be organized around specific functional domains of activity (say the various provisioning systems), or perhaps, alliances of complementary local production initiatives, which may seek transnational support and strength, but most importantly translocal capital. The historical precedent for this, have been called 'Neo-Venetian Networks'¹⁶ or 'Phyles'¹⁷ by David de Ugarte. In an earlier essay , I have described the entanglement of local and transnational capital in the Maronite communities of Northern Lebanon, while I have also described the local affinity based funding scheme experimented by Hugo Mathecowitsch in Honduras and Brazil.¹⁸
¹⁹Traditional surviving kinship-based solidarity models are now supplemented by affinity-based neo-tribes that share a common social object in the commons they are mutually dependent on.
- On the trans-local level, we must imagine productive alliances organizing the joint knowledge commons, their protocols of cooperation, collective

16 "Neo-Venetianism," <https://wiki.p2pfoundation.net/Neo-Venetianism>

17 "Phyles," <https://wiki.p2pfoundation.net/Phyles>

18 Michel Bauwens, "Beirut - Istanbul - Athens: the fate of tribes in a cosmo-local world" <https://4thgenerationcivilization.substack.com/p/beirut-istanbul-athens-the-fate-of>

19 Michel Bauwens, "A system of sovereign bonds but for alternative types of sovereignties?" <https://4thgenerationcivilization.substack.com/p/a-system-of-sovereign-bonds-but-for>

learning, collective management of jointly held resources.

- The local units have the capacity to invest and co-own the translocal resources of the alliances and commons they belong to; the trans-national alliances have the capacity to direct investment to the local units, and perhaps co-own some part of it. The idea here is a potential 'entanglement' between the local and the translocal level, which creates new levels of strength and capacity for the local.
- Hence, faced with the potential hostility of nation-states that are under the influence of extractive forces of trans-national finance, the local is no longer just the local, but a local that is also cosmo-local, and can mobilize counter-power.

In our vision, this counter-power is the characteristic of a transitional moment or epoch, but culminates in a commons-centric cosmo-local form of civilization, in which these protective commons institutions create the necessary balance within which market forces and territorial administrations can continue to exist, but without their capacity for over-reach in terms of thermo-dynamic balance.

It is to be stressed that this Cosmo-Localism is not at the outset a monolithic political or societal project, it is not inherently antagonistic to the nation-state; the question of development of these networks and alliances can have a pragmatic character:

- In which circumstance is it best to envisage trans-local alliances that are linked to the functional domain of a particular provisioning system ?
- In which circumstance is it best to envisage a cross-functional alliance ?

Cosmo-localism is compatible with functional city alliances that bypass nation-state levels of organization (for example, say a trans-local city league of FairBnB's²⁰), but it is also compatible with a bioregional reorganization of the physical-productive world, in which bioregionalization is facilitated by the historical and political unifying tradition of the nation-state.

²⁰ "FairBnB," <https://wiki.p2pfoundation.net/FairBnB>

What is crucial in the cosmo-local option is some form of new integration of:

- Reinforced local and functional differentialism; in contrast with the purely standardizing commercial globalization model, it must leave more room for differentialist specificity, which can be both a localist feature (bioregional identity), a trans-local cultural identity (a diasporic project), but also a functional differentiation, i.e. a value based solution for a particular provisioning system.
- Reinforced planetary care: localism on its own cannot resist globalized pressure, nor solve planetary and global thermo-dynamic issues.

Cosmo-localism attempts a difficult 'unity of opposites', which recognizes both local and functional autonomy (the latter is called Sphere Sovereignty²¹, and can be traced to Althusius, the alternative to Hobbesian absolute 'sovereignty') and the need for higher levels of unity and coordination. The cosmo-local option rejects any 'absolute' form of sovereignty, and opts preferentially for distributed forms of governance.

It is important to recap what Web3 has already brought to the table in this context:

- A capacity to globally coordinate human labor and fund it
- A universal ledger which can create open ecosystems for non-local coordination, with new accounting systems for contributory labor, 3D systems flow, and thermo-dynamic flow
- Programmable currencies which can represent various value options²².
- The capacity to fund its own commons-based infrastructures, i.e. public funding, and even retroactive public funding

21 "Sphere Sovereignty," https://wiki.p2pfoundation.net/Sphere_Sovereignty

22 Akseli Vertanen, "Crypto-Political Economy: Transcending Hayek and his digital disciples," econaut, <https://medium.com/econaut/crypto-political-economy-dd91c6fcff7>

- Anti-oligarchic, 'timocratic' coordination²³ and decision-making mechanisms, such as quadratic voting, and other new capacities to align incentives between various stakeholders. In Web3, both capital and labor, and other productive factors and forces, can be interpreted and treated as contributions to a common project.

All these techno-social trends are very much underway already.

There are however, also serious obstacles:

- Crypto and impact funding are not finding their way to relocalized and translocal production ecosystems; and are at this stage, hardly involved in real physical production.
- Local commons and digital nomads are not well connected at the present time.
- Local commoners frequently are solely concerned with their local situation, remain small and weak, and do not scale, nor accrue sufficient social and financial power, they remain marginal options.

To put it bluntly, Web3 and the crypto economy is still largely an 'exit' play for financial and coding elites, practicing the arbitrage of nation-states, but without much connections to local communities and resilient production; Similarly, local communities engaged in relocalized and regenerative production are not in sync with the mutual coordination capacities developed in the crypto/web3 context.

On the one hand, we have a thriving and well-funded field of Web3 technologies, unconnected and unrelated to actual physical production; on the other hand, we have an explosion of underfunded local production.

To achieve the next great civilizational advance, towards a cosmo-local world order, we will need to bring those two worlds together!

– Michel Bauwens

23 "Timocratic Governance," https://wiki.p2pfoundation.net/Timocratic_Governance

Does organizing at the Cosmo-local level require a profound shift in perspective?

by Marcus Barrick

In socioeconomic discourse, the often overlooked factor is the way a system scales; if mentioned, it is typically reduced to mere "Economies of scale," the rate at which the human population and technology have scaled, or the desire to scale new emerging systems. Such a term is still interpreted merely as the scale of quantity, yet the defining features of scale are the myriad of qualitative phase shifts that occur at different orders of scale. The way we relate to each scale becomes the central focus: a tree packages the smallest amount of nutrients and information to travel long distances within a seed, it does not regrow a tree beside it and then ship it away to long distances. Throughout humanity's industrial revolutions we have mastered all too well how to scale quantities, yet have missed an incredible opportunity and lesson in the qualitative dimensions of scale. The global population has greatly increased throughout these industrial revolutions, and again, we have forgotten the qualitative changes that occur within any group or organization.

Nation states, of the size they are today, are not static and settled organizations but highly novel and experimental structures, as historically, the centers of power were city-states (think Athens and Rome). Nation-states are not merely scaled-up versions of city-states; likewise, the global problems and existential risks we face are categorically different from the national problems of the past. Recognizing the characteristic differences in how we relate to each scale is vital. According to Geoffrey West (ex-president of the Santa-Fe Institute of Complexity Science), all life and emergent collectives scale according to super-linear power law distributions.¹ Notably, cities were shown to scale as life does, whereas nation-states or multinational corporations did not follow this trend. Cities, after all, are deeply embedded in relational processes, whereas we are mere representations relative to our country's electorate or citizens.

There is much contention over questions of capitalism, socialism, or communism, but they continue to be interpreted at the national scale; somehow, agency is often only granted to this scale. Why is that? After all, such separation between individual and nation is not only akin to a shrinking middle class but to shrinking the middle scale. This neglect of the local not only maintains the power structure but also transforms each relational process into a transaction capable of measurement, tracking, taxes and fees. Such a shift, as we will see, is indicative of a strong bias and blind-spot central to our predicament.

Addressing this calls into question which collective human organizations we identify with, as there are many groups from families and friends that maintain the importance of relations over transactions. While we may want a monetary system to facilitate trust among strangers, the more we rely on money, the more strangers we create. Is there then a place for the "local" to blend the distinctions between strangers enabling new conceptions of an economy? Is there a place for new communication tools and currencies to bridge the divide between relational and transactional, between co-worker and consumer, between passion and labor, and between collaboration and competition? Throughout history there were many local currencies and gift economies that enabled local regions to thrive without adhering to such strict transactions. They were, unfortunately, dismantled one by one to centralize the national economic systems, but if these local regions were to reintroduce their own monetary system, would it grant agency to the local regions?

¹ Geoffrey West, *Scale*, Oxford, England: Weidenfeld & Nicolson, 2018.

When we view monetary systems as a communication technology, it would seem like a currency trivializes the richness of communication that is available at the local level. But we need not adopt the game mechanics of a national scale's monetary system. A local game mechanic need not be confined only to the representational view that focuses solely on products, but can be expanded to include a variety of measures; coupling currency, resources, attention, time, information, decision-making, conviction and voting. However, we must take utmost care in this, as when we begin to represent such things inherent to human social relations, we risk commodifying and debasing the very social fabric that holds communities together.

But at the local level, such rigid boundaries are not viable; instead of products we must focus on processes.

In her book *Doughnut Economics*, Kate Raworth describes various experimental monetary incentive programs that, in fact, debased the cultural norms they were intended to shore up, leading the incentive program to generate outcomes directly contrary to those they sought to achieve. As she describes, "In Hifa, Israel, ten Danish nurseries introduced a small fine for parents who were more than 10 minutes late collecting their children at the end of the day. The parental response: rather than arriving more promptly, twice as many parents started arriving late. Introducing a monetary fine effectively wiped out any feelings of guilt and was interpreted as the market price for overtime care. Three months later, when the experiment ended and the fine was removed, the number of late pickups rose higher still. The price had gone, but the guilt hadn't come back. The temporary marketplace had, in essence, erased the social contract." ² Outcomes such as these lead Raworth to conclude, "When market norms

² Kate Raworth, *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*, White River Junction, VT: Chelsea Green Publishing, 2017.

replace social norms, the effects can be hard to reverse. As markets reach into spheres of life traditionally governed by non-market norms, the notion that 'markets don't touch or taint the goods they exchange' becomes increasingly implausible. Markets are not mere mechanisms; they embody certain values, and sometimes market values crowd out non-market norms worth caring about.³ I would suggest the problem here is that they used a value system/game mechanics of the nation to control and coordinate local systems.

If the 20th century was marked by the dependency between the individual and nation-state, which has led to various social and environmental crises, may the 21st century focus on the local and global scales? I suggest that local coordination isn't merely a scaled-up version of individual coordination, but is distinct in many ways and requires an entirely different frame of mind. Through walls and weapons, we create imaginary lines between self and other, between the products we own and those we trade. But at the local level, such rigid boundaries are not viable; instead of products, we must focus on processes. The myopia of the product-mindset is why we fail to organize at the local and global levels and can only seem to plunder their commons.

To the extent that the diverse processes of our world are construed as mere products with their *value* somehow reducible and fungible to a single quantity, the true wealth of this world is corrupted. Similarly, when we determine the success of an economy by measuring the sale of products, we promote a system of individual property to increase consumption. Organizing at the local level in a way that fosters the commons, sharing, and gift economies thrive precisely by not measuring the sale of products but focusing on relational processes, which in turn reduce consumption. The failure to organize at the global level has been met with naïve attempts to model it as a singular game led by a world economy operating as a scaled-up neoliberal nation-state. These are all category errors; the local and cosmopolitan scales are different in kind than the individual and national levels. Such a frameshift requires a different way of thinking about life, organization, and economies along with the nature of work, ownership and reward. If we are to take the existential risks of the meta-crisis seriously, the solutions aren't merely technological, political, or economic, but address the core of our being and identification.

3 Ibid.

The Inverted City: Speculative P2P and the Urban Protocol Underground

by Exeunt and Open Protocol Research Groupo

The city, so we've claimed in the past, is an *anticapture* device, the high pressure collision of many classes of being into one complete whole, an emergent unity that at the same time undermines its own totalization. It's a locked event of sustained difference, and any attempt to assert control finds a dissident underground sprouting like daffodils. To paraphrase a certain anarchist Russian poet, "The city is not equal to itself - it stirs and vulcanates."¹

Can the same be categorically said of Ethereum? Can we will that? To Ethereum's novice, the city is a master. But this can't be a simple matter of learning a prescribed tradition, given that the tradition under discussion is self-overcoming. No, in the inverted logic of the urban local, with its understories and subterranean engines, the master and the student collapse into the substrate plane of *practical potential*. A possibility space opens up: what can an ethereal body do? How can an alliance between two nodes of anticapture become more monstrous, more open, more self-overcoming?

—

Our investigations into the urban space began with an initial claim: distinct kinds of open source social protocols found in cities - and particularly in cultural undergrounds - are robustly isomorphic with those of the web3 space, and represent an opportunity for intervention and alliance. That research quickly took us to further reaches, extitutions, protocol undergrounds and the speculative realism they harbor. The Undercapital thesis is what resulted, designating multicapital economic strategies brought to bear to forms of relation illegible to states and institutions but which Ethereum, with its open ontology, could service without flinching.

While these conceptual flights had us at times moving further than our empirical and ethnographic resources could justify - making them provisional frames rather than analytic conclusions - it's our hope that readers find in this overview a skeleton for their own investigation into the urban cultural possibilities of Ethereum localism.

1 Aleksandr Svyatogor, "Biocosmic Individualism," <https://cosmos.art/cosmic-bulletin/2022/biocosmic-interindividualism>

Open Protocols

From early on in the research vector, we understood that the open protocols of the cultural field had a primary difference from those within a virtual network: while open web protocols depend on a shared computational substrate - a standard - open protocols of the urban field have only practical adequacy, the hardness of certain material conditions and the shifting features of the socio-cognitive fabric of the city as their shared substrate.

Despite this fact, the propagation of these urban protocols formally mirrors what we see in the Ethereum ecosystem in distinct ways. (Informally) codified knowledge sets for urban gardening, for community organizing or throwing a party in an unregulated setting, for squatting a warehouse or wheatpasting a message or getting a zine out, spread in a free and coherent manner ambivalent to traditional institutional infrastructure. They fork and merge to meet different landscapes of implementation. Teams of developers find temporary cultural cache and then dissolve into the milieu, while their creations persist and change. Most importantly, all of this social and intellectual reproduction happens outside of the channels of institutional control and coercion. Open protocolization, it became clear, was the fate of knowledge outside of the walls of institutional sanction.

Unsheltered from these boundaries, with their organizational propaganda, bureaucratic compulsions and procedural ossification, open protocols face the hard realities and pressures of the outside - institutional coherence is instead replaced by productive fracture, and impractical strategies are naturally selected out by the experience of free agents ². This was expressed in what we called "a twin commitment to divergent exploration and material grounding," that is, characteristic features of memeticism and empiricism that seem unavoidable for protocols in extitutionsal settings ³. In retrospect we might say that open protocols are about hacking the material world to find wells of possibility space: the twin question is always, *does it work* (performative or impractical gestures don't survive)

2 Check Ven and Exeunt's pre-OPRG publication Friends of the Outside: Control, Substrates and the Afterlife of DAOs for a little lyrical indulgence on this topic.

<https://zora.co/collect/oeth:0xd17e1c913a616e30ff267afda30a69d9ad25343>

3 Note that legacy institutions are often handicapped by the panoply of forces that make their internal protocols antimemetic and anti-empirical.

and does it allow me to improvise, generate novelty, be creative (if a proto-colist was interested in following orders, they'd join an institution)?

This broad grammar for seeing the city, as it were, inverted, led to several insights. We'll give them an overview, then return to what the open protocol framework might imply for local interventions by Ethereum and how it might even help us better understand Ethereum itself, what it is and where it's going as it likewise searches the economic and computational ruliad for its own possibility wells.

Extitutions

As the Ethereum ecosystem itself has found, because of the heavy grasp that legacy infrastructure has on the flows of economic and intellectual reproduction, an institutional "front" is sometimes needed to maintain protocols in their open and free form, taking the place of interlocutor with legacy forces while they construct autonomous zones which will inevitably intentionally obsolete them. What exactly this looks like in the Ethereum space is a complicated question - you can use your imagination - but in the urban sphere, they operate with a distinct purity and levity that makes them easy to identify.

The archetype of the extitution - for us, deployed as a slight alteration of Jessie Kate Schingler and Primavera de Filippi's extitutorial theory⁴ to mean distinct entities rather than informal undersides of institutions themselves - was a Portland friend's description of the late 90's/early 2000's indie scene. To paraphrase: *We were starting record labels like it was nothing, running them into the ground and starting over. Call it a way of protecting ourselves from success.* "Extitutions," we wrote in our first document, "wear institutional masks" - they're formal status tells one story, but any organizational planner or MBA would be stunned at the irresponsibility, or incoherence, with which they wield this entity.

If this is the case, it is because their "legibility" is a farce, their coherence accountable to an utterly different calculus: the free propagation of the protocol.

⁴ Jessie Kate Schingler and Primavera de Filippi, "An Introduction to Extitutorial Theory," January 2021, Berkman Klein Center Collection, <https://medium.com/berkman-klein-center/an-introduction-to-extitutorial-theory-e74b5a49ea53>

Protocol Undergrounds

This touches on a key dimension of open protocols, mainly that they are inextricably linked to cultural undergrounds. In a fruitful foray into a more archival approach to the protocol underground question, we looked at four historical cases: the California LSD scene of the 70s and 80s, the UK Free Party Movement, the West Coast Appropriate Technology Movement of the 70's and the Bay Area S&M scene of the same time. For each of these scenes, we identified an extitution (the Brotherhood of Eternal Love, Spiral Tribe, RAIN and the Society of Janus, respectively) and a value it distinctly embodied/ helped export to the cultural field.

Open Protocol	Extitution	Value
LSD	Brotherhood of Eternal Love	cognitive pluralism
Free Party	Spiral Tribe	high agency
Appropriate Technology	RAIN	autonomy
S/M	Society of Janus	consent

Notably, all of the above protocols were culturally marginalized and, at one point or another, very illegal - this seems to have been a historical prerequisite for the development of autonomous values. For more on these particular scenes, you can check out my *Local DAO Summer talk*⁵ and our second essay, "Sketches Toward a Theory of the Protocol Underground"⁶, but the crucial point is how they helped us construct a set of characteristics to not just explain the protocol underground, but the nature of the alternative values that keep its inhabitants avoiding institutional scaling at

⁵ "Open Protocols and Extitutions in Urban Spaces with Exeunt (July 24, 2024)" https://www.youtube.com/watch?v=A0_DAodAOJs

⁶ Open Protocol Research Group, "Sketches Toward a Theory of the Protocol Underground," July 2024, https://mirror.xyz/openprotocolresearch.eth/YuZvCx5ge2nQXo8L-2n0iWKN_CflivaCfsoLNMoVTqf4

all costs.

Later, in "Undercapital,"⁷ we identified three hazards of scaling that inform the intentionality of the underground: 1) **Institutional-behavioral bias**, a set of regulatory and cultural "multipolar traps" that lead to reflexively policed passive consumption (elsewhere known as the problem of spectacle) 2) **Limits to circulation of scene protocols**, wherein mutual expectations of high agency and consent are logically difficult to scale vertically, 3) **Cults of personality**, for obvious reasons including internal capture, the degrading presence of a figurehead to withdraw agency to, and a target for external capture.

To quote from "Sketches": "there is no objective vibe, there is no monopoly of the real. Feeling, sense, atmosphere are relational, and without institutions to impose a mystified neutrality - the oppressive, monoculture din of a Walgreens, bank, or a hospital - we are challenged with the responsibility and freedom to constitute for ourselves what the sense of things are, and in so doing, redefine what possibilities exist in them." Of course members of the underground depart, conform, become institutional subjects through and through, but the underground persists because its forms are innately decentralized, capture resistant, modular, free and open.

Speculative Realism & Undercapital

In the farthest reaches of our thinking this year, we realized the ontological significance of the alternative and aggressively pluralistic tactics of the open protocol form, one that points to a much needed cultural orientation for the Ethereum ecosystem itself.

By ontology, we mean, of course, what is *real* - namely, what entities enjoy legibility in a system when you're drawing one up. If cultural undergrounds are ontologically creative (in part because of their deployment of a maximally permissive knowledge reproduction strategy), it is because their acute sense of aesthetic self-determination - against all passivity and spectacle - ceases to be disciplined into a category of art and infects all manner of organizational logistics, governance and economics. In cultural undergrounds, the pluralistic forking of open protocols locates itself at the

⁷ Open Protocol Research Group, Undercapital: Open Protocols and the Underground Potential of the Distributed Ledger, September 2024, <https://gallery.manifold.xyz/optimism/listing?listingId=586>

speculative edge of the real, and its empirical imagination actively builds around exotic entities: scene egregores, crowd consciousnesses, agential vibes and colors out of space.

To speak of these entities in institutional time is to be subject to ridicule, but immersion into the protocol underground is an empirical ordeal that alters your tolerance quotient of what is real by showing you, through inputs and outputs, what works. The economic space of undercapital is rich with empirically realized, underinstitutional inputs and outputs that point the way toward a pragmatic, formalized, interoperable action space under a condition of social creativity and imagination.

Ethereum as a tool for Prefigurative Infrastructure

If there is a meaningful consistency between the extitutionsal strategy of open protocolization and the proliferation of open web protocols in the Ethereum ecosystem, the question becomes, where has one succeeded where the other has failed?

For the undergrounds, it's on the level of cultural imagination, for they have elevated the death of institutional values to an ontological status and discovered new seats of agency that point to new ways of living in the world. In flights of microeconomic planning and ad hoc governance, they have developed atmospheres and corridors of social life that are peopled with far weirder creatures than any institutionally sanctioned humanism could contain.

On the other hand, these experiments in many-worlding remain scarce, offering little threat of competition to the dominant systems that enjoy robust channels of expansion and reproduction. Reproducing without the above mentioned "hazards of scaling" has remained a taboo for these undergrounds, while for the Ethereum community, the nurturing and resourcing of free protocols is a technical problem with dozens of engineered solutions, from DAOs to self curated registries to token engineering and exotic participatory funding strategies to the many hybrids between them.

Cities represent an ancient and creative locus for the capture and censorship resistance Ethereum aspires to. If their cultural undergrounds have long since discovered open protocolization as a natural defense against an (often legally enforced) institutional hegemony, along with scenes and extitutionsal storefronts to expand those protocols, their sole limitation is the one of scaling. To our eye, many scene veterans are morbidly content with the fatalism of this project: to scale is to die (a sensible impulse, giv-

en the barriers mentioned above). Against this self-reinforcing impasse, Ethereum's pragmatic sensibility offers an exit: in a machinic, thermodynamically grounded *formalization without institutions*, the social tendency to pluralism and empathic imagination could be unleashed.

The Open Protocol Research Group is Ven Gist, MacksWolf and Exeunt. We are a research initiative of Portland's Ethereal Forest DAO, currently conducting interviews in the Portland region to gain insight on the autonomous structures that animate our present - and the promise they hold for our future.

Semiotic Bridging: a practice for Ethereum Localism and the Commons Economy

By Giulio Quarta, Director of the Commons Economy Roadmap

The art of weaving together different perspectives toward a common goal is nothing new. Political movements have long practiced the hard work of reformulating diverse viewpoints into unifying powerful narratives. Corporate marketing departments invest billions in understanding and influencing collective narratives to keep the profits machine going.

We live in an age where flows of meaning have become as vital as those of material resources. We all generate value in a Memetic Economy, where the whole complex of perceptions, affections and interactions which is our collective life has become the new frontier and substrate of capitalist extraction. We are semiotic beings, more than ever and every day more, living on meaning and memes as much as we live on food and water.

Both of these two dimensions of our survival are in great danger or already compromised for billions of people right now. It is from this growing awareness that the Commons Economy Roadmap project has emerged over the last few years, as an experiment in collective sensemaking around Commons-oriented economic systems. What we here call "semiotic bridging" can be useful in the context of Ethereum Localism – the

ambitious quest of connecting global protocols with local realities, across the world's cultural spectrum, ideally with an Ethereum core developer in every bioregion, to paraphrase Trent VanEpp.

What is Semiotic Bridging?

Semiotic bridging is the intentional process of mediating between different narratives and frameworks to reveal their underlying compatibility. It demonstrates how diverse cultural, economic, and ideological perspectives often align in their goals and actions, even when their language and framing differ significantly.

An example of successful semiotic bridging can be found in the history of climate activism. Before the term "environmentalism" or the "environmental movement" gained traction, many of the efforts to address issues like species conservation, pollution, and atmospheric science were fragmented, with groups focusing on specific causes without much overlap. This super narrative of environmentalism – which is now fully established and naturalized in our common sense – acted as a unifying framework that brought together these diverse efforts under a broader understanding of human impact on the natural world.

This approach becomes particularly relevant in the context of Ethereum Localism, where a bridging strategy can reconcile different scenarios and needs: global protocols and local implementation, socio-technical networks and natural ecosystems, in the context of an always evolving political plurality of the crypto industry and movement(s) social base.

Advancements in the information revolution have significantly reduced the marginal cost of "semiotic bridging work," and recent developments in large language models have only further amplified the effectiveness and potential of this approach. If I had to rewrite this piece in three versions for it to be understandable by a Syrian farmer, a Mexican environmental activist and an audience of young artists, while also creating a fourth piece that combines – semiotically bridges – all three perspectives it would have taken me weeks before generative AI, while now it would

be a matter of days, with the most time consuming parts of the process performed by a computer while the human effort can be moved to where it's more needed, like proofreading or actually interacting with the people involved.

The Commons Economy Roadmap: a sensemaking protocol

The Commons Economy Roadmap (CER) represents our experimental attempt at building a collective sensemaking protocol around the emerging Commons Economy. At its core, it's a knowledge base and promotion mechanism for infrastructure projects working toward societal regeneration. More fundamentally, it is an exercise in semiotic bridging at scale. We identify and feature projects that combine viable alternative business models with strong ethical values – initiatives building open infrastructures for citizen empowerment, ecological regeneration, and community resilience. Importantly, the selection is based on their potential contribution to the commons economy, through a set of evolving criteria which we invite you to read in greater detail on the project's website.

Once selected, projects can amplify their reach by funding the production of "Knowledge Elements" – articles, videos, and other media created by our network of research partners. These aren't simple promotional materials: they are curated pieces that situate each project within broader narratives of systemic change, revealing natural alignments with other movements and approaches.

Collectively, Knowledge Elements form a growing network of meaning that connects different vocabularies, frameworks, and communities. They facilitate translation between sectors – showing how ReFi projects align with mutual aid networks, how privacy protocols complement cooperative principles, and how traditional commons governance informs blockchain-based systems, just to name a few examples. Through these connections, projects discover new audiences beyond their niches, while building a richer understanding of how different pieces of the Commons Economy reinforce each other.

Speaking of the current memes and trends involved in this broad umbrella of the Commons Economy, CER also deals with ReFi and CoFi as they emerged out of DeFi – respectively regenerative, collaborative and

decentralized finance -- as well as traditional movements such as co-operativism and mutual aid, together with the variety of privacy-oriented communities like cypherpunks, lunarpunks and the meme of post-web, just to name a few.

The protocol emerged in the context of the Crypto Commons Association events and community, which was specifically initiated in 2021 by Felix Fritsch and myself with the exact aim of bridging these two worlds – blockchain and the Commons – which, until then, were mostly unlinked. The strong convergence around the Commons meme that we observed in the last four years convinced us that this could have been a more effective “supernarrative” than the “Post-Capitalism” one, for a variety of interesting reasons that we can’t delve on here for lack of space.

The core CER belief is that all of these networks are working on different dimensions and components of the same emerging system, assembling and expanding the same dense web of connected social and technical infrastructures. While each sector uses its own language and emphasizes different aspects, they share a fundamental vision which, as we suggest, might be expressed as:

“We all aspire to a global, distributed, open-source economic infrastructure – one that is resilient, nearly impossible to shut down or monopolize by a powerful few, and capable of bringing about global peace and abundance.”

Semiotic Bridging and Ethereum Localism

It will be clear at this point that our work is very much aligned with the vision and strategy of Ethereum Localism, which itself has been a strong influence in the development of the CER protocol. We want to support the great work that has been carried out by the thousands of tech workers worldwide, animated by the supernarrative of decentralization, so that these important infrastructures can be developed in alliance and symbiosis with the broader movements for social and ecological regeneration.

For such new narrative layers to be successful, all these meaning building blocks should be assembled and recombined through an endogenous process, driven by the continuous bridging of existing stakeholders narratives, revealing and strengthening what the Ethereum Localism

framework calls *cosmolocal* patterns. Just as Ethereum and blockchains in general provide technical protocols to enable decentralized coordination of economic resources, semiotic bridging can be used to design sensemaking protocols that accelerate the emergence of effective system-wide narratives.

The future of Ethereum Localism and the Commons depends on our ability to bridge multiple worlds: the technical and the social, the global and the local, the digital and the ecological. Organizing plurality without leaving anybody behind is the most demanding mode of existence one can choose in general, and much more so when fascism is coming back on the global stage with the precise goal of exterminating such diversity. We are convinced the semiotic bridging practices introduced in this piece can better equip us all in this struggle, helping us to appreciate both the wonderful variety of our efforts and their fundamental unity, as well as the deep beauty of this tension.

*For updates on this work and to join the conversation,
subscribe to the Commons Economy Roadmap newsletter
or contact gulioquarta@protonmail.com*

Manifesto da Sociedade Enraizada

via AgroforestDAO

https://mirror.xyz/diogoj.eth/Pqsja1w8I-6Gr4Uc0Fd5j5uH5ooFqYgovH7iH1t_Fwc

Este documento foi escrito por diversas mãos ao longo do período de um ano dentro do grupo de conversa da AgroforestDAO

Muitas sociedades humanas esgotaram o ambiente que as rodeia e por isso tiveram que conquistar novos territórios. A cultura dos conquistadores dominou as sociedades modernas e, com o advento da globalização, o padrão de esgotamento regional que levou ao colapso do Império Romano e de outras civilizações antigas atingiu um padrão globalizado e está a ameaçar todas as formas de vida.

Face a este possível colapso global, muitas pessoas no movimento ambientalista defendem um regresso às antigas formas de organização e governação, como o biorregionalismo e o localismo. De acordo com Tristan Bove, "o biorregionalismo considera que as biorregiões são definidas pelas pessoas que as habitam, que partilham uma identidade cultural única e se consideram igualmente em casa dentro da biorregião".¹

Hoje em dia, a maior parte da população consome direta ou indiretamente bens globalizados, e alguns consideram uma hipocrisia defender o localismo enquanto consomem bens produzidos globalmente. Muitas pessoas não querem abrir mão do café, do chocolate, do açúcar, da carne ou das redes sociais globais. A maior parte da população urbana está mais envolvida com as cadeias de abastecimento globais do que com as locais e, portanto, o biorregionalismo parece-lhes estranho e não existem atualmente incentivos para mudar a sua mentalidade.

Os modelos de organização localizada, por si só, não foram suficientemente fortes para manter as pessoas na terra ou incentivar as pessoas urbanas a sair da cidade para se envolverem com a regeneração local. Muitas vezes, as comunidades locais estão vazias e degradadas, aqueles que ainda vivem lá não são reconhecidos pela sua contribuição para o ambiente e enfrentam muitas privações em comparação com os moradores urbanos. Exemplos comuns são a falta de emprego, formação, educação de qualidade, diversidade alimentar, plano de aposentadoria e convívio cosmopolita.

Acreditamos que devemos integrar os moradores urbanos e rurais no esforço regenerativo através de agroecossistemas que evoluem e vivem mais do que a nossa própria geração. A camada biorregional por si só não é suficiente para regenerar os ecossistemas esgotados e deve ser complementada por uma camada global de coordenação para garantir a regeneração assistida e o aporte de sementes. Felizmente, neste século XXI temos a Internet e a blockchain e esta pode ser usada como o local onde implantamos uma estigmergia digital, co-criando sistemas de reconhecimento, incentivos e recompensas para ajudar a reintegrar os humanos nas agendas agroflorestais.

Defendemos a compreensão de que somos uma tribo global e que o nosso planeta é a nossa biorregião. Com esta consciência em mente, podemos criar sistemas de governança que permitam a participação de todos os seres humanos na construção de uma cultura comum de impacto socio-ecológico em todas as biorregiões, construindo os nossos bens comuns seguindo os 8 princípios de Elinor Ostrom para governos comunitários:

Limites claramente definidos.

Regulamentos feitos pelos membros que correspondem às necessidades e condições da comunidade e do seu ambiente. Um sistema estabelecido para tomada de decisões que permite que indivíduos afetados pelas regulamentações alterem as regulamentações.

Mentores oriundos ou responsáveis perante a comunidade de membros que garantam ativamente que as regras estabelecidas pelos mestres estão a ser cumpridas.

Sanções graduadas para membros que violam os regulamentos. Estes são determinados pelos membros da comunidade ou por indivíduos responsáveis perante a comunidade.

Mecanismos de resolução de conflitos de baixo custo e facil-

mente acessíveis aos membros da comunidade.
A capacidade de criar regulamentos sem a necessidade de uma autoridade externa.
Tomada de decisão descentralizada no caso de bens comuns maiores.

The Rooted Society Manifesto

This document is the result of a collaborative effort opened for 2 years on AgroforestDAO's chatgroup of 200+ members:

The Rooted Society Manifesto

By Diogo Jorge

Most human societies have depleted the environment around them and for that reason had to conquer new territories. The culture of the conquerors have dominated modern societies and with the advent of Globalization the regional depletion pattern that led to the collapse of the Roman Empire and other ancient civilizations has scaled to a globalized pattern and is threatening all life forms.

In the face of this possible global collapse, a lot of people in the environmental movement advocate for a return to ancient forms of organization and governance such as bioregionalism and localism. According to Tristan Bove, "bioregionalism considers bioregions to be defined by the people that inhabit them, who share a unique cultural identity and consider themselves equally at home within the bioregion." ¹

Today most of the population directly or indirectly consumes globalized goods, and some find it hypocritical to advocate for localism while consuming globally produced goods. A lot of people don't want to let go of their coffee, chocolate, sugar, meat or global social media. Most of the urban population is more engaged with the global supply chains than with the local ones, and therefore bioregionalism feels alien to them and there are currently no incentives to change their mindset.

Localized organization models alone were not strong enough to keep people in the land or incentivize urban people to exit the city to engage in

¹ Tristan Bove, "Bioregionalism: A Model for a Self-Sufficient and Democratic Earth," March 2021, Earth.org, <https://earth.org/bioregionalism/>

local regeneration. Very often local communities are empty and degraded, the ones still living there are not recognized by their contribution to the environment and face a lot of deprivation compared to urban dwellers. Common examples are lack of jobs, training, quality education, diversity of food, retirement plan and cosmopolitan conviviality.

We believe that we must integrate the urban and rural dwellers in the natural regeneration via agroecosystems that evolve and live longer than our own generation. The Bioregional layer alone is not enough to regenerate the depleted ecosystems and must be complemented by a global layer of coordination to insure stewarded regeneration and seeds inputs. Fortunately in this 21st century we have the internet and the blockchain and it can be used as the place where we deploy digital stigmergy, co-creating recognition, incentives and reward systems to help re-integrate humans to forestry agendas.

We advocate for the understanding that we are a global tribe and that our planet is our bioregion. With this awareness in mind we can create governance systems that allow for participation of all humans in building a common culture of socio-ecological inclusion across bioregions, building our commons following Elinor Ostrom 8 principles for governing the commons:

Clearly defined boundaries.

Regulations made by the commoners that correspond to the needs and conditions of the community and their environment. An established system for decision-making that allows individuals affected by the regulations to change the regulations.

Monitors drawn from, or accountable to the community of commoners who actively ensure the rules established by the commoners are being adhered to.

Graduated sanctions for members who violate regulations. These are determined by members of the community, or by individuals accountable to the community.

Conflict-resolution mechanisms that are low cost and easily accessible for members of the commons.

The ability to create regulations without the infringement of an outside authority.

Decentralized decision-making in the case of larger commons.

On Open Civic Systems

An Excerpt From Towards An Open Civics

Stigmergy: The Nature Of Open Civic Systems

Across the natural world, we can see examples of nature engaging in positive sum feedback loops in which plants, animals, fungi, bacteria, water, light, and soil exchange energy and information for mutual benefit. The sum total of these interactions is the “web of Life,” a nested set of relationships that form a complex adaptive system that is self-regulating, self-healing, self-reinforcing, and continuously evolving.

Stigmergy is a type of swarm intelligence¹ in which individual agents, taking their own actions, signal those actions to other agents in such a way that other agents can contribute in a positive sum feedback loop. Examples of stigmergy in non-human organisms include ants, termites, bees, flocks of birds, bacteria, and slime mold. In humans, we can see examples of stigmergy in Burning Man, open source software development², Wiki-

¹ “Loren Carpenter Experiment at SIGGRAPH ‘91,” <https://vimeo.com/78043173>

² Ted Lewis, “Why Can’t Programmers Be More Like Ants? Or a Lesson in Stigmergy” August 2015, <https://blog.ubiquity.acm.org/why-cant-programmers-be-more-like-ants-or-a-lesson-in-stigmergy/>

pedia³, the Occupy movement⁴, and various internet experiments⁵. More akin to jazz music or an improv troupe than an institution or organization, stigmergy uses a simple set of decentralized rules to support individual agents in contributing to mutually beneficial goals. What is lost in terms of the linear clarity derived from centralized planning and control is greatly outweighed by the unplannable complexity and beauty of a swarm contributing their unique gifts towards an emergent structure.

Stigmergy is made possible by the decentralized rule set that all agents choose to abide by, creating the conditions for feedback loops that reward positive sum behaviors. Positive sum feedback is driven by stacking the contributions of individual agents. Contributions that attract more contributions feed back on themselves. These rewards are intrinsic to participation. No one needs to direct or command them to occur. When it is clear how to contribute without stepping on someone else's toes (literally or metaphorically), humans naturally want to converge around shared efforts in which their participation is meaningful and purposeful. This is a form of participatory commons governance⁶ in the sense that it empowers us to collectively steer the ship of a common effort through our contribution instead of through our top down control of others' agency.

Open civic systems create scaffolding for stigmergic coordination by providing open templates for agent-centric coordination. Institutional functions and all other functions of a society are ultimately based in human coordination, making open civic systems capable of achieving the same outputs as any centralized institution. Open protocols, the DNA or source code for open civic systems, function similarly to the pheromone pattern languages of ants that inform how agents communicate and stack their contributions. In this way, open civic systems integrate human social systems with the patterns of living systems.

3 Justus Uitermark, "Longing for Wikitopia: The Study and Politics of Self-organisation," *Urban Studies* 52, November 2015, https://www.researchgate.net/publication/283356364_Longing_for_Wikitopia_The_study_and_politics_of_self-organisation

4 Kevin Carson, "The Stigmergic Revolution," November 2011, <https://theanarchistlibrary.org/library/kevin-carson-the-stigmergic-revolution>

5 Ben Armstrong, "Coordination in a Peer Production Platform: A Study of Reddit's /r/Place Experiment," 2018, https://uwspace.uwaterloo.ca/bitstream/handle/10012/14060/Armstrong_Ben.pdf

6 Jeff Clearwater & the Stewards of VillageLab, "Participatory Commons: Innovating Organizational Structures & Processes for a Regenerative Economy," May 2020, https://docs.google.com/document/d/1U2VoaNEaEoZDyURUqpDemu9Kwb6kroZougl_6t5XYB4/edit?tab=t0

In the same way that an ant colony or bee hive can be considered a macroorganism, an emergent whole with its own form of collective agency, a human social organism is the equivalent design pattern for human coordination. Social organisms grow out of a core mission, vision, and culture that is defined in the nucleus of the social organism's social DNA. This social DNA serves as a north star as it is encoded and reproduced by agents through means of peer accountability, empowering human agents to opt-in to social organisms with whom they align at the fundamental DNA level. This core DNA also informs the functions, roles, flows, and membranes that are required for the social organism to achieve its purpose within its social ecology. Distinct from institutions or corporations that tend to function as a kind of "zombie" or cancerous social organism, never dying or engaging in reciprocal flows with their environment, social organisms are intended to be conceived, gestated, matured, and decomposed as the entire social ecology continues to evolve and transform to reflect the needs and desires of the many generations of agents who animate them.

While this fundamental transformation in human social behavior and structure is profound, it reflects patterns that exist all around us in the natural world. A human civilization based on these fundamental design patterns would represent a truly open civic system, able to easily adapt to changing circumstances, respond to collectively determined needs, and provide cosmo-local feedback cycles in which the collective superorganism of humanity could continuously learn and grow as peers.

Polycentricity: Holons Of Self-Organization

Embracing the living systems view of the interrelatedness and complexity present in our ecologies, and perhaps our future human systems, we begin to view components of a system as nested wholes or holons.

"A holon is something that is simultaneously a whole in and of itself, as well as a part of a larger whole. In this way, a holon can be considered a subsystem within a larger hierarchical system" – Wikipedia

This fractal perspective allows us to view the world through the lens of polycentricity, a way of seeing that can contextually shift depending on which holon we're seeking to understand. Because each component is a whole unto itself within a fractal web of relationships, polycentricity emerges as a way of engaging with the sovereign sphere of each holon while acknowledging that a complex system will contain many component parts which are themselves sovereign wholes. This whole systems

approach allows us to engage with and design human systems that reflect the various interconnected holonic scales of a complex system, from the sub-atomic to the molecular, cellular, organismic, social organismic, ecological and biospheric scales. At each scale, the autonomy and healthy reciprocal flows within and across each holon will affect the health of the system.

"A holon is something that is simultaneously a whole in and of itself, as well as a part of a larger whole. In this way, a holon can be considered a subsystem within a larger hierarchical system" – Wikipedia

This living systems understanding is reflected in political philosophy through the principle of subsidiarity⁷, an idea which emerged out of the natural law philosophy of Thomas Aquinas⁸ and the neo-Calvinist political philosophy of "sphere sovereignty,"⁹ which states that "social and political issues should be dealt with at the most immediate or local level that is consistent with their resolution."

Alexis de Tocqueville's Democracy in America offers a description of the principle of subsidiarity in early America. Tocqueville observed that "decentralization has, not only an administrative value, but also a civic

7 "Subsidiarity," <https://en.wikipedia.org/wiki/Subsidiarity>

8 rthur Utz, "Principle of Subsidiarity and Contemporary Natural Law," Natural Law Forum, https://scholarship.law.nd.edu/cgi/viewcontent.cgi?article=1032&context=nd_natural-law_forum

9 "Sphere Sovereignty," https://en.wikipedia.org/wiki/Sphere_sovereignty

dimension, since it increases the opportunities for citizens to take interest in public affairs; it makes them get accustomed to using freedom. And from the accumulation of these local, active, persnickety freedoms, is born the most efficient counterweight against the claims of the central government, even if it were supported by an impersonal, collective will.”¹⁰

A beautiful living example of a cosmo-local and polycentric approach to whole systems thinking, bioregionalism embraces the holonic nesting of our belonging to and embeddedness within our living systems. Thinking bioregionally shifts our perspective towards the holonic nature of our relationships. Instead of seeding a new kind of nationalism wherein the locus of power and identity is an abstract nation state, bioregionalism sees humanity as part of a single biosphere and global human community while localizing our actions at the scale at which closed loop systems are most needed and relevant. In this sense, bioregionalism and a living systems view of civic infrastructure are one and the same.

Blockchain: Peer To Peer Cybernetics

To build the infrastructures of open civic systems that align with this holonic and polycentric view, new technological substrates are needed. Although the early stages of the internet were defined by peer to peer interactions between academic institutions¹¹, our digital commons was quickly captured by centralized “web2” entities like Google and Meta who realized that by placing essential internet services on their own servers, as opposed to self-hosted ones, they could extract attention and advertising revenue. What followed was a classic multi-polar trap in which misaligned incentives and the enclosure of our digital commons led to a race to the bottom in which the monetization of our attention became an arms race between increasingly monopolistic tech giants. At the core of these dynamics is the infrastructural failure of the “client-server” model which prevents users from interacting with one another outside of a centrally mediated context.

To both address these dysfunctional system dynamics as well as to create alternative systems, it becomes necessary to develop decentralized

10 Alexis De Tocqueville, Democracy in America, trans. Henry Reeve, <https://www.gutenberg.org/files/815/815-h/815-h.htm>

11 “How the Internet Was Stolen,” <https://youtu.be/oLLxpAZzyOs?si=nVWbT5Pmcpw2R5SH>

technological substrates in which users may interact with one another peer to peer and produce novel forms of autopoetic self-governance that are not possible within centralized technology platforms. Blockchains are one such technological substrate. While not without fault or its own forms of centralized capture, blockchains – and related P2P technology – represent a significant step towards a technological substrate for civic infrastructure that supports composability and interoperability.

Emergent System Capabilities

This design approach to open civic systems is directly connected to the development of open source software, applying the same methodologies for social systems. Coherence and consensus in this stigmergic and evolutionary landscape is determined based on swarm intelligence and the utility of the outputs themselves.

As the system evolves, patterns that produce positive outcomes will be selected, with forking and merging of patterns achieving the same effects as genetic mutation and reproduction. Through an open protocol pattern language, these learnings and evolutionary adaptations can be cosmo-locally shared and integrated, allowing humanity to learn together how best to design and deploy open civic systems.

If humanity can align around open civic innovation models, our collective intelligence can be harnessed to collaboratively compose the civilization that we share.

A Walkthrough of The Green Crypto Handbook

by Patrick Rawson & Louise Borreani, Ecofrontiers.xyz

“The cybernetician’s mission is to combat the general entropy that threatens living beings, machines, societies, that is, to create the experimental conditions for a continuous revitalization, to constantly restore the integrity of the whole.”

– Tiqqun, The Cybernetic Hypothesis

The Green Crypto Handbook (upcoming 2025) proposes a block-chain-based (alternatively: 'Web3') Environmental Finance Stack as a multi-layered framework that encompasses various material and conceptual layers as relating to the collective production of transferrable green crypto-assets (alternatively: 'natural capital'). It aims to describe the cutting edge of planetary cybernetics through the new forms of living capital that Web3 evokes.

Web3's generalized benefits¹ offer a more ethical and novel path for eco-capitalist development, as the rights to produce, own, and profit from the production of green crypto-assets can be extended to all individuals at little to no operational cost. Web3's immutable, transparent, and decentralized tools are game changing for green markets, where provenance, materiality, and accountability are paramount. The rise of crypto-institutional tooling and its immutable protocols effectively democratize asset production. Tokenization plays a crucial role, allowing the creation of new assets ("birth") or the re-ledgering of existing assets ("rebirth") using blockchain technology.²

Web3's planetary-scale open liquidity environment facilitates digital asset exchange that transcends state-mediated markets that are often governed and restrained by developed nation interests. For instance, the development of a regenerative finance³ ecosystem in Africa is but one data point that showcases the potential of leveraging these tools in developing economies.⁴ Cryptomarkets' unprecedented access and the accelerated capital formation a just and rapidly scaling climate transition requires. They are global, 24/7, universally accessible, and move capital at lightspeed, driving operational settlement costs to near-zero.

Cryptocurrencies have gained popularity, particularly among individuals with lower incomes⁵, indicating a broader reach and accessibility. While there is currently a significant sector focused on crypto-enhanced donations⁶, there is a non-negligible potential for crypto to move beyond philanthropy and find applications in various impactful sectors. It is in this design milieu that *The Green Crypto Handbook* aims to plug existing gaps in the design literature describing the democratic production of green crypto-assets.

1 Simone Cicero, "Weighing the Impact of Web 3 Protocols on Platforms," <https://stories.platformdesigntoolkit.com/weighing-the-impact-of-web-3-protocols-on-platforms-ae-98c8bef952>

2 Teej Ragsdale, Jack Chong, & Mukund Venkatakrishnan, "An Unreal Primer on Real World Assets," <https://docsend.com/view/u53utyp2j4ycg7r6>

3 Regenerative finance broadly refers to the application of ecological economics as applied to Web3.

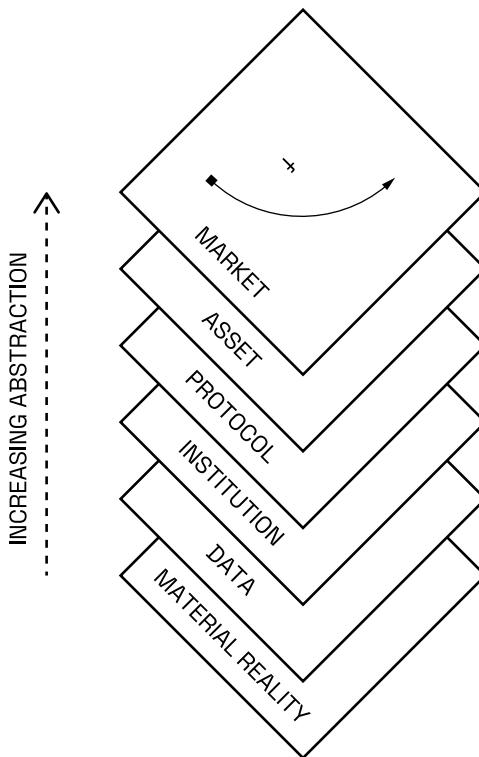
4 "ReFi projects in Africa May 2023," <https://pbs.twimg.com/media/FxY3gRfaIAA4XOK?format=jpg&name=medium>

5 Sebastien Derivaux. Twitter. Last modified May 23rd, 2023. <https://twitter.com/SebVentures/status/1661063483369177108?s=20>

6 "Your DAO". Endaoment. <https://app.endaoment.org/>

Web3's Environmental Finance Stack

As mentioned, *The Green Crypto Handbook* identifies six layers critical to evolving eco-capitalism:



At its bottom is the **Underlying Material Reality**, the diverse family of planetary systems described by the natural sciences from which all financial abstractions are derived. Using human-designed tools of observation and measurement, human society translates the physical world into data. The contingent qualities of the technologies used for measurement and the translation of these measurements into accounting frameworks are mediated by the economy as an information-processing assemblage. While

The Green Crypto Handbook is not about the epistemology of nature or science, these starting principles must be acknowledged as the basis by which environmental finance is epistemologically situated as accounting technology.

The **Data Layer** acts as the technical infrastructure responsible for the conversion of material reality into digital form, facilitating the transition from analog to digital representation. To measure the efficacy of ecosystem conservation and restoration efforts, one needs data. Data ultimately legitimizes all environmental stratagems in the production of green assets, as well as the institutions that originate them. As infrastructure, the data layer converts analog ecosystem complexities into actionable digital intelligence for evidence-based interventions. It presupposes and establishes the substrate on which territorial planning, sustainability initiatives, and financial abstractions must be developed.

The **Institution Layer** refers to the institutionalization process, the formal and normative decision and rule-making processes that filter the data layer and define protocol rules for the object representation—thus financialization—of green crypto-assets. Institutions ultimately define the overarching legal and regulatory frameworks, scientific methodologies, and technical protocols that delineate and govern green crypto production. They determine “techniques and procedures” that ultimately structure “the possible field of action.”⁷ Like all institutions, they compete and collaborate to secure economic factors of production—land, labor, capital, and innovation—in order to survive.

The **Protocol Layer** provides a structured definition for the production of assets governed by an established institution. As nodes in an institutional network, institutions exchange and incubate factors of production—land, labor, capital, and innovation—in order to ensure their long-term livelihoods and achieve well-defined objectives. The Protocol Layer deals with how crypto-institutions technically structure their intra- and inter-institutional relationships, covering those blockchain-based institutional protocols crypto-institutions use to exercise control and boost productivity for themselves and their neighborhoods. The affordances of these technical protocols are of particular importance to green crypto-institutions, whose supreme thermoreal imperative compels them to weave a planetary-scale institutional network that can “evolve fast enough to contain climate change” and resolve “fundamentally global problems... beyond the reach

⁷ Michel Foucault, “The Subject and Power,” *Critical Inquiry* 8, no. 4, 1982, pp. 777–795.

of existing institutional forms like nation-states and pre-internet global institutions such as the United Nations, World Bank, and IMF.”⁸

The **Asset Layer** arises from the systematic combination of the preceding layers, yielding a taxonomy of transferable green crypto-assets ready for market exchange. Assets are the oxygen of markets, and understanding the types of green crypto-assets that exist and can exist is paramount. A green asset, in comparison to a typical financial asset, is understood as a transferable financial object that *generates a positive impact for the underlying material reality* while providing economic benefit to its holder.

Finally, the **Market Layer** represents the conditions under which green crypto-assets are exchanged. Ultimately, the successful production and use of green crypto may come down to the conditions of its exchange in the global financial system. As mentioned, a singleton, planet-scale market in which all actors can compete on a level playing field is evolving in real-time.

In Conclusion

The rise of Web3 unlocks a new substrate for computational civilization to experiment with the production of new forms of natural capital. Ultimately, the goal of applying cybernetic principles to the 21st century economy “to combat the general entropy that threatens living beings”⁹ lives on and through Web3’s emerging environmental finance stack, which is uniquely poised to create socioecological networks that are resilient, responsive, and capable of achieving their adaptive objectives in a digitalized, dynamic, and climate-catastrophic world.

8 Venkatesh Rao, Tim Beiko, Danny Ryan, Josh Stark, Trent Van Epps, and Bastian Aue, “The Unreasonable Sufficiency of Protocols,” Summer of Protocols, <https://summerofprotocols.com/the-unreasonable-sufficiency-of-protocols-web>

9 Tiqqun, The Cybernetic Hypothesis, South Pasadena: Semiotext(e), 2020.

Bioregional Organizing Networks

By Andrea Farias

In Barcelona, Spain, we've lived with drought since I settled here in 2020. Our reservoirs hover around 30% capacity, even after recent devastating floods that ravaged nearby coastal cities, throwing cars around like toys and tragically claiming hundreds of lives. Every summer, we fear running out of water... and every summer, the solutions proposed feel increasingly desperate.

In a move fit for political satire, officials have proposed to address this crisis by shipping in tens of millions of euros worth of water by boat. While our local government genuinely wants to address this challenge, they operate within systems that limit both thinking and action. Water management is fragmented across political boundaries that ignore ecological reality of watersheds, while bureaucratic structures restrict responses to a narrow set of solutions - more infrastructure, more control, more engineering.

Change is blossoming through a growing movement of people relearning how to organize human activity around ecological rather than political boundaries. These bioregional organizers are pioneering a fundamental shift in how communities operate within their local ecosystems. Their work happens through both ecological projects, like watershed restoration, and the careful work of bringing people together through new forms of community building and governance.

The bioregional movement operates as an interconnected ecosystem with three key elements working in dynamic relationship: bioregional organizing teams working directly in their territories; learning networks and support providers creating infrastructure for knowledge sharing and capacity building; and broader players such as funders that play a crucial role in supporting bioregional work.

This diagram is loosely based on Idea Machines by Nadia Asparouhova.¹

At its heart, bioregional organizing is grounded in a philosophy of ecological embeddedness - moving beyond treating ecosystems as resources to be controlled and instead developing a deeper ecological consciousness that lets living systems guide human activity. This represents a fundamental shift from the mechanistic approaches seen in conventional resource management. Instead of responding to water crises with expensive and energy-intensive technical solutions like transporting water, ecological embeddedness works to restore right relationship with natural systems.

This ecological consciousness manifests in three key ways:

Bioregional organizing is inherently **process-centric**, recognizing and working to support the dynamic flows and cycles of life - from salmon runs to seasonal water patterns to wise capital allocation.

It operates with a **fractal** structure, where patterns of organization repeat and adapt across scales, enabling appropriate governance to emerge at each nested level, from neighborhood to watershed to bioregion.

It is **plural** in both knowledge and practice, making space for multiple ways of knowing and being, and recognizing that boundaries are often fluid rather than fixed.

This philosophy is translated into local action by bioregional organizing teams – groups working to coordinate regenerative activities within their bioregions. These teams implement place-based processes to maintain healthy ecosystems while meeting human needs. This includes both ecological regeneration and organizational processes – the essential activities of bringing people together and coordinating resources. Some examples of bioregional organizing teams are pictured in the map below.

While early-stage organizing teams might focus on basic community

¹ "Idea Machines," <https://nadia.xyz/idea-machines>.

building and knowledge gathering, mature teams develop complex systems for governance, strategic development, and financial management. The table below details how some of these key organizational processes manifest, particularly in more mature bioregional efforts:

Strengthening relationships between individuals, organizations, and stakeholder groups by creating dedicated spaces for meaningful dialogue. The original bioregional congresses in the Ozarks in the 1980s brought people together to network, share information, and make collective decisions around bioregional organization. For example, certifications were developed for bioregional leaders that included requirements around organizing experience.

Governance Systems

Establishing decision-making structures and accountability systems, along with shared agreements and protocols for how the community will work together.

In South Yorkshire, communities are pioneering models that give voice to the River Dōn through a combination of sensor networks, citizen science, and AI technology. By enabling real-time interaction between the river and its human stewards, the project is creating civic infrastructure for including more-than-human voices in decision-making processes.

Sensemaking & Learning

Documenting & Holding Knowledge

Mapping and documenting both ecological and cultural knowledge of their place, building shared understanding among community members about their bioregion's history, resources, and current realities.

To define their bioregion, organizers in Cascadia work with multiple overlapping mapping approaches – from watershed boundaries and geological formations, to cultural identities and transportation corridors. This pluralistic approach shows how the boundaries of a place shift depending on where you stand in relationship to living systems.

Strategy Development

Engaging in collective sensemaking to identify challenges and opportunities, developing shared visions and concrete plans for implementation while establishing ways to track progress.

In Barichara, Colombia, organizers practice emergent sensemaking by observing patterns through continuous dialogue with community members, enabling them to channel resources and energy in real time. This deep understanding of local dynamics enabled them to harness an unexpected funding opportunity by quickly launching a regenerative entrepreneurship program that created opportunities for young people who tend to leave the area.

Economics & Finance Funding Flows

Building financial mechanisms and infrastructure to mobilize capital for regenerative activities while ensuring these resource flows strengthen rather than undermine local relationships.

In the Amazon headwaters, the Sharamentsa community developed Jaguar Coin – eco credits that protect 10,000 hectares of primary rainforest. Working with Regen Network, they created a framework that combines indigenous knowledge and governance systems with blockchain technology to track ecosystem health, creating sustainable livelihoods while protecting critical habitats and cultural heritage.

Capacity Development

Building portfolios of interconnected projects and initiatives that can address systemic challenges, accelerating aligned ventures and thoughtfully allocating resources across efforts.

The Greater Tkaronto Bioregion developed seven thematic areas for regeneration by weaving together western science and indigenous knowledge. These themes, ranging from watershed restoration to community resilience hubs, guide a coherent portfolio of local initiatives, which together help fund systemic impact while reducing risk for experimental projects.

This **process-centered** approach allows us to learn how to create life-enhancing social systems informed by ecosystem processes in place. Since transformation moves at the speed of trust, the most crucial element of bioregional organizing is building the social capital and relational capacities that enable genuine collaboration. Teams must demonstrate sustained commitment over time to build the legitimacy needed for deep systemic change.

Blockchain technologies act as a critical enabler by providing a sandbox

for experimenting with new institutional components in action. Communities are using these tools to create eco-credits that generate sustainable funding flows, track and reward community contributions to regenerative activities, enable participatory budgeting for local projects, and develop new kinds of nature-driven governance structures. These experiments provide the building blocks for new systems to take shape.

At a deeper level, blockchain's influence extends beyond technology to how we think about coordination itself by highlighting the power of protocols as flexible frameworks for collaboration. Protocols provide just enough structure to enable cooperation while maintaining adaptability, whether they are computer code managing digital transactions or social agreements governing shared resources. Like traditional commons management systems, they create a clear set of rules that communities can enact without imposing rigid hierarchies.

This protocol thinking offers powerful new models for **fractal**, cosmo-local relationships between the globalized world and local communities. Common protocols enable coordination across scales – supporting nested governance between cities, ecoregions and bioregions – while preserving local autonomy. This mindset also allows successful organizing protocols to act as a shared social infrastructure that can be shared across bioregions, while remaining deeply responsive to each unique context.

Learning networks play a crucial role by stewarding these common social protocols - facilitating relationships, developing shared knowledge, and enabling resource flows across the movement. Rather than organizing specific bioregions, these groups support the broader ecosystem of bioregional organizing teams. Through this higher-level coordination function, they drive the movement's growth and development.

Learning networks offer different approaches, areas of expertise and value systems. This **plural** diversity is a key strength – by exploring multiple directions simultaneously, the movement uncovers a fuller range of possibilities. For instance, Hylo's broader community organizing scope has helped channel resources that might otherwise be unavailable within a stricter bioregional frame. Similarly, ReFi DAO's approach to impact measurement and capital allocation mechanisms is able to appeal to traditional sustainability fields, opening pathways toward bioregional thinking.

The diagram below illustrates some of the key learning networks in the movement, along with their core focus areas.

Through the dedicated work of bioregional organizing teams and the networks that support them, the infrastructure to enable systemic transformation is being built today. Together we are re-learning through practice how **process-centered**, **fractal** and **plural** principles can be embodied in how we organize ourselves.

This ecological embeddedness uncovers new approaches to ongoing crises like Barcelona's water supply. Rather than treating the water as a mechanism to be engineered, we could organize around watersheds, understanding deeply how water moves through our landscape. This means creating governance systems that incorporate the voice of the watershed itself, developing financial models that enable long-term investment in ecosystem regeneration, and building community processes that help people understand and steward their relationship with water.

But this transformation requires more than just good ideas – it requires the patient work of building new organizational capacities and ways of relating. Through the growing ecosystem of bioregional organizing teams and the learning networks that support them, we're developing the social and technological protocols needed to reorganize human activity around ecological rather than political processes. By strengthening how these groups learn and work together, we can help catalyze the deeper shift in how human communities relate to the living systems that sustain us all.

Neighbourhoods: Web3 Technologies and Progressive Alter- globalism

By *Emaline Friedman*

The 1999 protests in Seattle at the World Trade Organization (WTO) was described by Naomi Klein as the 'coming-out party of a resistance movement'.¹ Activists organized to decry the damning effects of neoliberalism and the reduction of all social life to transaction relationships, and all meaning to capital. Since then, anti-globalists have sought alternatives that aren't against globalization *per se*, instead understanding it as an objective process.² This conceptual shift has led such activists to move progressively from condemnation of globalization, to demanding a more fair and humane globalization, and finally to articulating means by which forces of globalization might be harnessed toward the interest of civil, human, and employee rights.

1 Naomi Klein, "A Fete for the End of History" March 2001, <https://naomiklein.org/fete-end-end-history/>

2 Leszek Gawor, "Globalization and Its Alternatives: Antiglobalism, Alterglobalism and the Idea of Sustainable Development," *Sustainable Development* 16, 2008, 126-134.

It is in this spirit that this chapter poses some ideas about how to harness the technologies that emerge in the context of the inevitable process of globalization to bring about a humanitarian transformation of society. Rather than empty defiance, we must be willing to articulate how change comes about and to proffer an ethic of social sensibility in deploying the tools, processes and inter-connectivity that the high times of globalization have brought about. Alterglobalism was rare in its time for specifically addressing the meaning and influence of the 'information revolution', so it is fitting to adopt its progressive premises to forward locally valuable uses of global computing infrastructure.

Two points stand out in particular: first, alterglobalism embraces a tighter loop between economies and societies. While global coordination of exchange of goods and services may be necessary, any institution responsible for this area should take into consideration a broad range of social goals, such as provision of basic economic rights to all people (fair wages and working conditions), environmental protection and the promotion of the model of sustainable development. Second, alterglobalism opposes social uniformity. This manifests in practice via support of local movements. In this sense, it propagates a program that is close to communitarianism. Although it does not distance itself from globalization processes, alterglobalism promotes the catch phrase 'Think globally, act locally'. It uses the term 'glocalism' to define such a model of community, which, while making use of the opportunities offered by globalization processes (for example fast information communication), does not lose its local, regional color.

Yet, since the founding inquiries of alter-globalism in the 2000's, much has changed. We find ourselves now in a historical moment when neoliberal globalization is breaking down of its own internal crises; the financial crisis of 2008, the COVID-19 pandemic, and the war in Ukraine have all manifested new tendencies toward deglobalization.³ The monolithic New World Order in which the United States is *the state*, and other nations are expected to subordinate their sovereignty to the interest of its firms may in fact be coming to an end, and accordingly we may adapt alter-globalism to this new context of post-globalism. So, as far as social technologies are concerned, the creations of Silicon Valley, under the auspices of American national security policy, might be considered but then also reconsidered.

³ Wolfgang Streeck, *Taking Back Control? States and State Systems After Globalism* (United Kingdom: Verso, 2024).

Against platform monopolies

Global-scale platforms that enrich transnational, American-based firms have tended to treat their mass of users as a fungible set of 'any people' whose value is solely in the data traces that they leave. The novelty of data as an economic asset is that, while the value of any data point is minimal, it contains meaning that becomes very valuable in aggregate. That aggregated masses of data are so valuable is a linchpin of the data economy as we know it today, where a few platform giants fight ruthlessly over the privilege of hosting peoples' actions, thoughts, and online "behavior" and to exclude others from accessing the same aggregate data. We mill about as these 'any people', caught in the cross-hairs of misinformation campaigns between imperialists vying for dominance.

Ultimately, we are pulled by social and economic imperatives to migrate on-line. Network effects work, and we need to be wherever our social support systems are and to follow the money into increasingly digitized labor. As it stands, these social forums, or platforms, certainly constitute the faceless, inhumane globalism against which we should fight. Yet, they currently render our memories and our pasts. The politics of cultural records is a question of who defines what is worth saving and why. On monopolistic social platforms, the project of archiving, personally and collectively, is a nearly antithetical practice to the corporate and military surveillance and hoarding of data. The personal data we supplied remains archived without our conscious intent, according to protocols we have no input in shaping. Most importantly, it is not available for creative re-use. Is it possible that the limited forms of social coordination generated on these apps might seed a proliferation of society-level coordination in the name of alter-global, collective sovereignty against hyper-global expropriation?

Social applications are distinct from other types of technologies with these same capabilities because they are the ones that people use to relate to one another and to carry out our daily activities. The capturing of such activities as 'inputs' slowly becomes an end in itself, with ad-driven, attention grabbing social web environments built to suit this end rather than specific needs of people using it. Against the alter-global ethic of tightening the loop between social and economic activity they loosen it; proprietary software with its own business agenda is placed in between the people it is supposed to help connect. For this reason, social applications and the transfer and exchange of social data is a uniquely rich zone of activity for local applications of Web3 technologies.

Imagining local stacks

So, what does it look like when global-scale record-keeping is placed in service of local cultures and distinctive ways of life? The impetus toward preservation is not only preservation for an unknowable future, but preservation in the present: of style, flavor, custom, and local meaning. Planetary computerization is a product of globalization. Together with the rise of global computing came the rise of global metrics that implicitly turn groups against their own needs. Nevertheless, the web can and must involve sub-networks whose logic is not subordinated to any defining, single market characteristic; in other words, networks can retain the cultural flavors of the people who use it. It is this integrated character of diversity and the persistence of difference-in-itself that is what needs to be preserved in order to 'think globally and act locally' about software. For this reason, it is critical that alter-global information technologies lend the full force of humanity's know-how to local causes, customs, and meanings. Primitive elements of social computing can be focused and easily programmed to further goals that take shape in the context of *this group or this people*.

It is this integrated character of diversity and the persistence of difference-in-itself that is what needs to be preserved in order to 'think globally and act locally' about software.

Some techno-social responses to the problem of the globalization of the Internet and the way it takes our attention away from issues 'on the ground' are networks and protocols that forward a culture of participation and collaboration around digital technologies, fostering not only literacy but input into the design of social technologies and the metrics

and values they implicitly carry. At the bottom of the stack, this can mean storing and processing data locally. P2P or peer-to-peer describes consensual connections between peers using open protocols that facilitate permissionless sharing and contributing. Mesh networks, too, are private networks that are hosted locally and used without an internet connection to connect and communicate locally.

Local-first development is also in this tradition, using edge computing to process data closer to the source, at the "edge" of the network, instead of in remote data centers. It enables a modern, real time multi-user synchronization, offline capability, resilience, privacy and data ownership. This technological affordance – holding and processing data locally – is an entry point to a larger discussion about how social software might be used and even re-designed for the purposes of geographically proximate or otherwise culturally close groups to further their economic interests and remediate some of the damage done by the hyper-mediated character of global capital.

In the organization of grassroots associations, for example, a social platform might be useful for tracking contributions, recording local history of activities, recording votes and pledges, connecting people and services, vouching for oneself and others, attesting to events witnessed on the ground, and on and on. It is important, then, to have both *more choice* about what platforms optimize for (e.g. what *kind* of participation, what *kind* of valuing the system does) and *less choice* in that selecting a tool for community organizing does not pull participants into a global web or chasing metrics that have no merit in the contexts in which they live; why should we need to use Facebook to organize locally?

Global records: personal hedge and group mouthpiece

Concurrently, cypher-punk libertarians and anarchists dreamed of a decentralized cash system that would release control of central issuance of moneys by nation states, creating a new system of exchange that accomplishes some of the same goals as these movements – disrupting the trade relations of national economies and their financial sectors – but with no position or interest in locale. In fact, such a cash system might seem like the apex of hyper-globalism in transcending the limitations of nation-states and fostering 'trustless' participation between any parties whomsoever in financial transactions and speculative games.

What in the world, then, do blockchains and distributed ledger technologies have to do with localism? At first blush the answer might seem to be ‘nothing’. But we should not be so quick to dismiss web infrastructure that retains the waning hyper-globalism of the 2000’s. What can be done with it in the interest of giving voice to collective diversity, fostering peaceful coexistence, and preserving local customs and character? First, persisting records on non-local, but also censor-proof and tamper-proof ledgers adds protection against both infighting and devastation of local infrastructure. As collectivities we want outside groups to know how we do things and why, and as individuals, we want outsiders to know that our reputations are real in our communities of origin.

As subjects of global markets and the migrations to which they give rise, the preservation of personal history is paramount to digital subjectivity and being-in-networks. As envisioned in the Neighbourhoods project, data generated in a local context should be held locally such that it can benefit owner-members in the objective process of globalization. Data sovereignty and the ability to take personal data with you, as it were, across the web and to new contexts, is the technological requirement for being able to transmit information about one’s history and past relationships in order to make way for the new, and to reliably become neighbors. A web of connection should make no one a stranger; it should put a data-clothed face to the migrant who might otherwise be met with contempt. While personal data is generated locally, often geographically local but also proximate to the meaningful activities of the person, appending these to tamper-resistant, distributed ledgers means that these are handed off from the community in which they are meaningful to be globally recorded.

At the collective level, data sovereignty means giving voice to the needs, interests, and capacities of the data-generating group. Combining Web 3.0 and local stack technologies means lowering the cost of record-keeping and enabling group-specific custodianship of all of information and the software that generates it. This means that communication and record-keeping can be preserved, creatively used on- and off-line, modified, and deleted without the limitations or permission of anyone cloud-based service provider — think Google, Meta, YouTube, and even smaller companies like Miro and Figma that create excellent tools but whose lifespans as companies are ultimately unpredictable. Such an approach fosters internal coordination power. Old school, non-web based apps put files directly on peoples’ computers for exactly these reasons.

The combination of local-first/distributed/p2p protocols and Web3 technologies offer the close collaboration groups need to thrive, plus the resilience, control, and offline use possible with traditional applications. The Neighbourhoods project (\$NHT) is a local-first project that combines interface-level configuration of interactions and metrics per community, but utilizes a token on the Ethereum network to (1) harness funds from a global network of communities, (2) provide a means of trustworthy interaction between communities, and (3) attest to various community-held social data by inscribing them in a tamper-proof, decentralized record.

Conclusion and questions

In summary: hold data in common with the community of purpose that generates it! Decide together how to append these to a resilient, "global" ledger for the benefit of those to whom the data pertains. Many questions about what this entails remain. For example, is the context of data generation necessary geographically local? I don't think so, though this may often be the case. As the era of de-globalization progresses, it remains to be seen what the target unit of social change will be. Much to the chagrin of blockchain maximalists, many of whom represent the market fundamentalism that alter-globalism opposes, the nation-state may again come to matter as much as ever in representing the interest of members of various societies and communities on the ground, arranging methods of peaceful coexistence with other collectivities, and facilitating or blocking access to computing infrastructure. And, while context may be non-geographically proximate, personal data generation will always pertain to the imagined communities on which actual people depend. The way in which 'online first' and 'offline first' communities stand to utilize the approach outlined here remains to be seen; my hope is that the tension between local and global participation become generative, rather than cancerous, to the development of subjectivity and society in the 21st century.

dPAN's: Reimagining Collective Action in the 21st Century

by Nate Suits

When disaster strikes, when systems fail, or when communities feel abandoned, it's the collective efforts of individuals that weave the fabric of resilience. It doesn't require grand gestures or sweeping policies; it begins with the simple, profound truth that when we unite, we can achieve more than we ever could alone. Whether it's rebuilding after a storm, reviving a forgotten corner of a neighborhood, or addressing the struggles of daily life, collective action is the thread that binds us, making us stronger and more connected.

If we want to build better communities, collective action must become more than just an occasional response to crises; it must become an unconscious behavior within society. The ability of individuals and organizations to work together toward shared goals is essential for addressing our complex social, economic, and environmental issues. However, coordinating such efforts requires overcoming significant obstacles, including limited resources, varying priorities among stakeholders, and the complexities of effective communication. These challenges are further compounded by the need to build and sustain trust, ensure equitable participation, and adapt to the rapidly changing demands of our modern societies. Collective

action is the outcome of solving complex coordination problems in our immediate environments by uniting communities around shared goals and aligning their efforts through collaboration and mutual accountability.

Currently, we rely on our institutions of government to facilitate this collective action on our behalf through bureaucratic forms of public administration. In our daily lives we rely on our local governments to solve a myriad of problems ranging from the provision of essential social services to maintaining our fragile and degrading infrastructures.

A significant barrier to the continued efficiency of our centralized public-sector is the limited capacity that local governments have to monitor and execute the policies adopted by the citizens of their respective jurisdictions. Additionally, the financial and human capital within these centralized structures are not well equipped for the adaptation of the ever-growing needs of the local population. As we continue to see the stress that our local governments are under, we must come to the realization that our modern-day administrative methods for collective action are not and will never be sufficient.

Our reliance on government institutions has allowed us as individuals to be as free and creative as we can be, knowing that we do not have to worry about providing these things for one another. However, this reliance cannot be maintained without public trust; trust that our tax dollars are spent wisely, and trust that those with the power to make decisions on how our tax dollars are spent do so ethically and with precision.

While we have a lot of bureaucratic mechanisms in place to preserve that trust, we often see the degradation of these accountability structures in many of the institutions and agencies within our local governments. Public trust is the metric of survival for all governments, and when that public trust erodes we see how fragile our society becomes. As we strive to expand our government's capabilities to ensure this trust is never broken, all it takes is one bad actor to destroy everything we've worked so hard to build.

The growing distrust in centralized institutions combined with the increasingly complex demands for their work requires a swift reimagination for how we facilitate collective action in the 21st century. In order to do this, we need to do more than criticize and attempt to destroy our current methods of public administration...we need to provide alternatives.

Decentralized Public Administration Networks (dPAN's)

The use of distributed ledger technologies is a fundamental advancement within the category of coordination. While the majority of blockchain innovation has been centered around the financial mechanisation of everything, its applications within the area of human coordination have been extremely limited. While there are many reasons for this, ranging from a lack of funding to issues of liability, the largest obstacle has been establishing a vision and framework for how blockchains can be utilized for the purpose of facilitating local collective action.

Fundamentally, blockchains provide us with permanent pieces of digital public infrastructure that can be relied upon even after it stops providing us with meaningful utility. Blockchains inherently minimize the need for trust, and create robust incentives that can be fine-tuned to influence the formation and conditioning of new types of communal behaviors. Additionally, they offer an environment for repeated games to be played where acts of civic engagement through repetitive functions can lead to norms of reciprocity that improve the efficiency of society and facilitate coordination without the fear of corruption or exploitation.

A decentralized Public Administration Network (dPAN) is a local blockchain network that is designed to incentivize the coordination of local citizens and organizations around a specific set of collective functions. The purpose for creating these networks is to shift public trust away from government agencies and place it into equilibrium with the citizens it represents by giving local communities the tools by which they can become self-reliant. The thesis being that by atomizing the mechanisms of public administration, coordination networks can unlock a more inclusive, democratic, and cost-effective path for community lead governance, enabling a more direct and responsive means for facilitating collective action that serves as a more viable and sustainable alternative to traditional public administration frameworks.

dPANs consist of nodes within a local POA chain that are hosted by non-profits and government agencies, and execute a wide-range of decentralized applications (dApps) which attempt to mimic government functions. There are two (so far) fundamental types of public administration applications within these networks:

Functional Applications

These applications are designed to coordinate and execute the provision of public goods and services traditionally charged to our local governments. This includes activities such as road repairs, city cleanups, emergency response, community programs, park maintenance, etc.

Example: PotHole Network

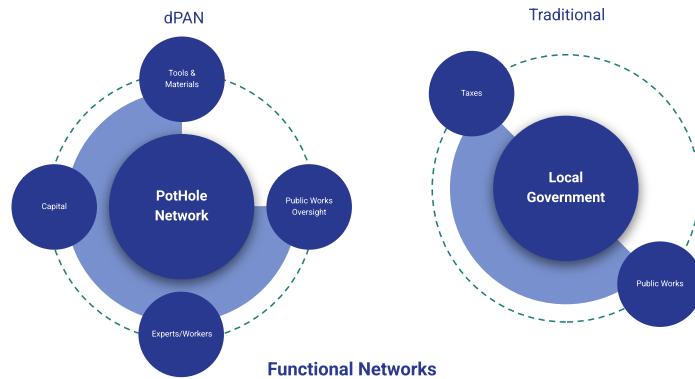
Imagine a city where potholes are no longer an enduring frustration, waiting months or even years for repairs due to bureaucratic bottlenecks and funding constraints. Instead of relying solely on tax-funded public works departments, the city implements a decentralized Public Administration Network (dPAN) dedicated to road maintenance. This network operates on a simple yet powerful principle: direct coordination between those who use the roads, those who repair them, and those who are able to supply the necessary materials.

In this model, residents and businesses who rely on well-maintained roads contribute directly to a crowdfunding pool, each contributing a small, voluntary amount proportional to their usage. These funds are then allocated through a decentralized system that prioritizes road repairs based on real-time community input. Contractors and road maintenance professionals register with the network and bid on repair projects, ensuring efficiency and competitive pricing. Material suppliers integrate directly into the network, streamlining procurement and reducing waste.

Now, contrast this with the traditional public administration approach. In a conventional system, road repairs are funded through taxes collected by the local government, which then allocates a fixed annual budget to the public works department. The department, constrained by limited resources and bureaucratic inefficiencies, must prioritize which roads to fix, often leaving smaller but heavily trafficked streets neglected due to budgetary restrictions. The process is slow, top-down, and often unresponsive to the real-time needs of communities.

With the dPAN model, the local government shifts from an active agent to an overseer, ensuring quality control and regulatory compliance rather than managing every aspect of road maintenance. The result? A more agile and responsive system where far more roads can be repaired in a given time frame, communities have direct influence over infrastructure improvements, and funding is allocated efficiently to maximize public

benefit. By decentralizing the decision-making process and removing bureaucratic barriers, this approach transforms a long-standing coordination problem into a dynamic, self-sustaining solution.



Structural Applications

These applications are designed to reorganize the way in which governments, organizations, and citizens interact with one another. This includes activities such as nonprofit funding, voting, health services, volunteer networks, homeless services, permits, etc.

Example: Homeless Service Providers

For decades, cities have struggled to provide consistent, effective solutions for homelessness. Traditionally, Homeless Service Providers (HSPs) operate as independent nonprofits, each vying for limited government grants. These grants come with rigid financial oversight, dictating exactly how funds can be spent and restricting the ability of these organizations to implement innovative solutions. As a result, HSPs spend as much time competing with one another for funding as they do serving the homeless, creating inefficiencies and limiting their collective impact.

Now, imagine an alternative—a decentralized Public Administration Network (dPAN) designed to change the way funding flows between governments, service providers, and the homeless community. Instead of issuing

individual grants to a fragmented network of nonprofits, the government funds a single HSP Network. This network then distributes funds directly to the homeless population in the form of a basic income that can be spent at participating service providers.

This structural shift fundamentally changes the incentive landscape. Under this new model, HSPs no longer compete for government grants; instead, they compete to provide the best possible services to attract and retain the patronage of the homeless individuals they are dedicated to serve. With the autonomy to experiment with their resources, HSPs can develop more responsive and effective programs, whether that means expanding transitional housing, improving mental health services, or offering job training programs. The result is a more dynamic and demand-driven ecosystem, where services align with the actual needs of the homeless community rather than the prescriptive constraints of grant agreements and public service strategies.

By decentralizing funding and shifting control closer to those directly affected, the HSP Network restructures the way homelessness is addressed in cities. The role of government shifts from dictating service models to providing funding, allowing HSPs the flexibility to expand their services and focus on the needs of the homeless. This transformation turns a system of scarcity and competition into one of abundance and collaboration, demonstrating the power of structural dPANs to redefine public service delivery for the better.



While these categorizations are a broad attempt to describe the design space, the types of potential applications are limitless, and can be tailored

to fit the needs and context of the local community initializing the effort. Since these applications can be open-sourced, the successful implementation of a network application in one city can also be provided as a solution for another, in essence, creating a marketplace of administrative solutions that can shift the role of local governments from an active agent in our communities to that of an overseer.

The continued development and experimentation of local coordination applications has the potential to transform collective action from a highly rigid, reactionary process (via government) to a highly adaptable and anticipatory process (facilitated by citizens). If these types of coordination tools can be utilized in a manner that incentivizes and rewards citizens for their civic engagement, we can begin to build the foundation for a highly anticipatory civil society.

Additionally, decentralized Public Administration Networks (dPANs) introduce a competitive alternative to traditional local government service provision by leveraging efficiency, transparency, and direct community engagement. Unlike bureaucratic government agencies bound by political cycles, budgetary constraints, and administrative inertia, dPANs operate with agility, responding dynamically to local needs through decentralized coordination and incentive structures.

The use of new allocation funding mechanisms can enable dPAN's to create a system that shifts the dominant sources of coordination capital from a taxation-based process via government to a voluntary or algorithmically distributed process through citizen contributions based on necessity. Over time, as these networks prove their ability to deliver superior services at lower costs, they can gradually absorb more administrative functions, allowing local governments to transition into light-touch oversight roles. If scaled successfully, dPANs could redefine local governance, replacing hierarchical government structures with self-sustaining, community-driven networks that provide essential public goods more effectively, ultimately transforming governance into a decentralized, participatory system tailored to the needs of its citizens.

From Information Tsunamis to Local Streams: Rebuilding Community News to Protect Democracy

By Crystal Street of JournoDAO

We live in an era of information tsunamis. What passes as "news" in 2025 travels at a dizzying speed, is riddled with disinformation and bias, dumbed down to the point of futility and echoed back to us through our "trusted neighbors" lacking doubt or discernment. We consume this information in glances, soundbites and TikToks while doom scrolling the drama du jour. The disinformation pipeline is fortified by weaponized algorithms running through the fingers of oligarchs on a mission to reshape society into a techno-utopia where an elite class dictates an unwanted reality upon us. And we all participate in the Spectacle (knowingly or not) as those algorithms are intertwined in almost every aspect of our modern lives.

In order for a democratic society to function, access to unbiased, free, equitable, verifiable, factual information must flow fluidly. Prior to the internet age, civically engaged citizens gathered their information from a handful of sources-- local news, national news, newspapers and neighbors. Information flowed at a consumable pace and those who produced the news did so in a way that more often benefited their neighbors and, for the most part, was unbiased and factual.

Reporting wasn't designed to scratch that itch of controversial emotion to solicit a click-through, impression or extract data from the reader. Reporting was designed to deliver facts so community members could have robust debates about local issues, make informed decisions at the ballot box and move on.

News moved predictably, with slow deliberation, leaving time to check facts and digest complex information. Reporters, politicians and neighbors spent time in community on a regular basis so hatred and separation had no real incubation grounds. Face to face interaction between reporters, politicians, law enforcement, etc. and the community was the failsafe, unspoken mechanism that reinforced trust and kept bias and falsities at bay. We processed our news and formulated our opinions with time, care and a modicum of objectivity. The news was delivered to us slowly, on broadsheets that gently stained our fingers or every evening for 30 minutes while we gathered to break bread.

As the internet evolved from Web1 to Web2, a handful of corporations discovered that social networks could generate massive advertising revenue

by delivering polarizing content to uninformed audiences. While these platforms optimized for clicks and impressions, traditional media failed to adapt, leading to the decline of fact-based journalism and the rise of rage-based memetics and virality.

Media outlets lost revenue streams as the classified ads shifted to free online platforms leaving them vulnerable to corporate consolidation. Journalists lost the ability to make a living wage producing fact-based information and communities lost the ability to coexist in relative harmony. Sprinkle an isolation event like a global pandemic on top of a rise of identity politics driven by oligarchs through algorithms, and well, we find ourselves at the mercy of our neighbors who, to no fault of their own, are drowning in tsunamis of deadly disinformation.

We all have personal and painful examples of what was lost. We have aunts and uncles who harbor such toxic worldviews they make family dinners or holiday gatherings a warzone of racism and willful ignorance. We all have local school board meetings that devolve into violent confrontations complete with death threats and book burning rallies. We all live in a degree of fear now for what our uninformed and uneducated citizens have voted into power.

How do we address such a complex problem that seeps into the depths of our collective identity and holds the key to our survival or the fuel for our demise?

Can we rollback time to “slow news” cycles so we can consume information with balance and deliberation? Can we use immutable ledgers to create a viable network of fact delivery, source tracing and attestations of truth or dissent? Can we create alternative economic modalities for journalists and local media outlets using L2s, NFT subscriptions, capital allocation protocols and stablecoins? Can we restore our ability to step into community and not fear the “other” or the “separation” thriving in our Third Places because of unfettered access to disinformation?

Solutions to all of these current realities exist, or lie just on the cusp of existence as emergent technologies gain traction and approach mass adoption. Experimentation is a vital element for communities as they turn inward for solutions. Hyperlocal systems of information production and delivery to counterbalance the detriment of disinformation are emerging from distributed pods of journalists who see a different future.

We know our technology is far from mass adoption and our solutions are ephemeral at best. Yet we continue to push the boundaries of what we know is possible today for the hope of manifesting an informed tomorrow; one of nourishing local streams as opposed to devastating tsunamis.

Local journalists pushing fact-driven narratives onchain for distribution through immutable ledgers with permanent attestations of source, truth and dissent.

Local community papers deployed on Ethereum L2s that deliver news fast, directly to wallets and generate income through fractionalized subscriptions leveraging NFT protocols.

Hyperlocal information that protects the community during a crisis through a decentralized, unopinionated network curated, maintained and secured by the community itself removing the dependence on biased and centralized algorithms delivering breaking news on social networking platforms.

Immutable truths archived for generations to come producing knowledge graphs of a narrative over time, forcing all contributors to place their reputation on the validity of their information— for the duration of their lifespan and beyond.

Information that can never be removed from the record of history because it lives on decentralized servers owned by no one and powered by everyone.

Can hyperlocal rivers of information flowing on and within Ethereum ecosystems restore what was lost so we can continue this great American experiment? Or will our local human systems suffocate under the amplification of false realities as neighbors embrace dissolution and separation in a race to protect themselves from the mirage of a culture war masking the very real class warfare burning down everything we hold dear as a collective?

MycoFi: Where Web3 meets Emergency Finance for Communities

By Scott Morris (x Claude 3.5 Sonnet)

In the shadow of catastrophe lies revelation. Black swan events - the devastating, unpredictable crises that imperil and reshape our world - serve as brutal but illuminating stress tests of our social and economic systems. The 2008 financial crisis exposed the house of cards underlying global banking, while COVID-19 revealed the fragility of globalized supply chains and the deadly consequences of overreliance on centralized response systems.

These shocks expose the fault lines in our financial infrastructure - where rigid, centralized systems crack while more adaptable, distributed networks display surprising resilience. When traditional financial institutions fail, communities consistently create alternative systems of exchange and mutual support. From the Austrian town of Wörgl's successful emergency currency during the Great Depression to the Swiss WIR's decades-long stabilizing effect on small business, history shows us that peer-to-peer financial systems can provide crucial economic resilience precisely when conventional systems fail.

The patterns that emerge in these successful community responses

mirror some of nature's oldest and most successful resource allocation networks: mycelia. These systems have evolved over billions of years to distribute resources efficiently across vast and complex ecosystems. Just as fungal networks create resilient connections between organisms in a forest, sharing nutrients and information across the ecosystem, human communities can enjoy resilient economic networks that maintain circulation and trust when conventional systems falter.

Today, web3 technologies – particularly Ethereum's programmable trust infrastructure – offer unprecedented capabilities for implementing these time-tested patterns at scale. Smart contracts, decentralized identity, and programmable money provide the technical foundation for reimagining community finance for the digital age. The challenge now is not technical feasibility, but vision and strategy – understanding how these powerful tools can be applied to strengthen community resilience and enable re-generative economies.

The Crisis Context & Opportunity

Our legacy economic system exhibits alarming vulnerabilities that become starkly apparent during crises. Wealth has become increasingly concentrated, with the top 1% now controlling more resources than the bottom 90% combined. Infrastructure struggles to keep pace with rapid urbanization, as cities globally add 1.5 million new residents each week.¹ Meanwhile, climate change threatens to multiply and intensify systemic shocks, from supply chain disruptions to mass displacement events as we can see in the city of Los Angeles today.

Traditional financial institutions and government responses are consistently inadequate during these moments of crisis. Centralized systems, while efficient in stable conditions, often fail precisely when they're needed most, as the world can see quite plainly today in the way the American government has responded to the disastrous wildfires in Los Angeles. Given these events come at such a staggering cost, it's all the more important we learn the lessons they hold for us about avoiding similar outcomes in the future. Throughout history, when conventional financial systems fail, communities have consistently demonstrated remarkable creativity in developing alternative solutions:

¹ "Every Week, 1.5 Million People Are Moving Into Cities Across The Globe," July 2024, World Economic Forum, <https://www.weforum.org/videos/20444-this-is-how-cities-are-getting-bigger-and-changing-our-world/>

- Emergency scrip: Temporary vouchers and certificates used for future exchange.
- Mutual credit systems: Enabling communities to trade goods and services using internal accounting.
- Time banks: Facilitating service exchange based on time rather than money.
- Municipal micro-bonds: Enabling direct community investment in local projects.
- Revolving savings and credit associations: Pooling resources to help community members in turn.
- Revolving labor associations: Bringing neighbors together to work on shared and personal projects.

These aren't just historical curiosities - they're time-tested templates for community resilience. The key insight across all these systems is that money isn't just about numbers in an account - it's fundamentally about *trust* and *coordination*. When communities create their own financial resources and infrastructure, they're really creating new ways to work together, share resources, and take care of each other. That they are able to do this on the basis of their own resources, free from dependencies on external factors, is a feature, not a bug.

Web3 technologies offer powerful new tools for implementing these proven patterns while transcending many of their historical limitations. Smart contracts can automate complex trust relationships that previously required significant social capital or institutional overhead to maintain. This programmable trust infrastructure enables communities to:

- Create sophisticated mutual credit networks that can scale beyond small, tight-knit groups.
- Design conditional commitment pools where resources are only deployed when specific collective thresholds or criteria are met.
- Implement democratic governance mechanisms that ensure transparent and accountable resource allocation.
- Build reputation systems that carry across multiple complementary economic networks.
- Automate the issuance and redemption of local currencies based on real economic activity.
- Enable fractional ownership and trading of community assets which have historically been invisible and/or illiquid.
- Create cash-saving clearing networks based on automated invoice

clearing.

Traditionally, such community financial systems often struggled to scale beyond local trust networks or required substantial administrative overhead. Smart contracts remove these friction points by encoding critical functionality directly into infrastructure, increasing accessibility while lowering operational costs. A mutual credit system that might have required careful manual tracking and deep social ties can now operate seamlessly across larger networks. Emergency scrip that historically needed complex anti-counterfeiting measures can now be issued as verifiable digital tokens usable in for-purpose marketplaces. Multiplier effects won't happen so much by accident as by design.

It's important to understand and emphasize just how little mainstream audiences care about whether or not something uses web3. They do not. What they care about is that it works when they need it, it's easy to use, and it's readily beneficial to them and their community.

This infrastructure for programmable money and automated trust enables communities to implement more sophisticated versions of proven resilience patterns. Rather than simple bilateral exchanges, web3 enables multilateral clearing systems that can efficiently match needs and resources across complex networks. It becomes particularly interesting when we consider the possibilities of stacking these systems, so in addition to having simple things like basic time banking, communities can also create rich market networks of skills exchange, tool libraries, and other niche markets, each with their respective pricing and reputation.

Mycelial Networks as Economic Models: MycoFi

Nature's most successful distribution systems offer profound insights for designing resilient economic networks. Mycelial networks - the thread-like fungal structures that connect and nourish forest ecosystems - demonstrate some key patterns that can inform the architecture of community financial systems:

1. Distributed Intelligence: Rather than relying on central control, mycelial networks make decisions through countless local interactions. Web3 protocols can similarly enable emergent coordination through transparent rules and incentives rather than central authorities.
2. Dynamic Resource Flows: Fungal networks constantly adjust resource allocation based on local conditions and needs. Smart contracts can encode similar dynamic allocation rules, adaptively direct resources to where they're most needed based on dynamic community input.
3. Redundant Connections: Mycelial networks maintain multiple pathways between nodes, ensuring system resilience when individual connections fail. Multi-signature wallets and decentralized governance similarly provide redundant security and control mechanisms.
4. Pattern Recognition: Fungal networks develop sophisticated responses to recurring situations through chemical signaling. Reputation systems and oracle networks can similarly help communities develop collective intelligence about resource allocation.
5. Buffer Capacity: Mycelial networks maintain reserves that can be rapidly mobilized during stress. Community finance systems can similarly use automated liquidity pools and emergency response protocols to build systemic resilience.
6. Adaptive Growth: Successful pathways in fungal networks naturally strengthen while unsuccessful ones fade. Token economics and reputation systems can create similar positive feedback loops for beneficial behaviors.

These patterns are already emerging in web3 experiments worldwide. Decentralized Autonomous Organizations (DAOs) demonstrate distributed intelligence through on-chain governance. Automated Market Makers (AMMs) enable dynamic resource flows through programmatic liquidity

provision. Multi-signature protocols create redundant security through distributed key management.

Practical Applications & Implementation

Implementing mycelial finance (MycoFi) patterns through web3 infrastructure requires careful attention to both technical and social considerations. Here are key components that communities need to address:

Core Infrastructure Components

- Identity and Reputation: Decentralized identity solutions that can capture trust relationships while preserving privacy. These systems need to bridge on-chain and off-chain reputation, enabling communities to build on existing social capital.
- Resource Tracking: Smart contract systems for tracking commitments, obligations, and exchanges. These should support multiple forms of value beyond simple tokens - including time, skills, and other community resources.
- Governance Mechanisms: Flexible decision-making frameworks that enable both rapid response to crises and thoughtful deliberation for longer-term decisions. These often combine on-chain voting with off-chain discussion and consensus-building.

Implementation Strategies

The most successful community finance initiatives typically start small and scale organically. Consider the following approach:

1. Begin with a clear community need and existing trust relationships
2. Implement simple mechanisms first (e.g., mutual credit or time banking)
3. Add complexity gradually as the community builds capacity
4. Maintain focus on real economic activity rather than speculation
5. Build in feedback mechanisms to enable system learning and adaptation

Technical Architecture Considerations

When designing these systems, several key technical decisions need to be addressed:

- Layer Choice: Whether to build directly on Ethereum mainnet, layer-2 solutions, EVM compatible chains, or alternative networks
- Privacy Requirements: Balancing transparency with confidentiality of community transactions
- Interoperability: Ensuring systems can connect with other community networks and traditional finance
- Upgradeability: Building in capacity for evolution as community needs change

The goal is to create systems that are simple enough to be widely understood and used, while sophisticated enough to handle complex community needs. This often means hiding technical complexity behind intuitive interfaces that map to familiar social and economic patterns. It's important to understand and emphasize just how little mainstream audiences care about whether or not something uses web3. They do not. What they care about is that it works when they need it, it's easy to use, and it's readily beneficial to them and their community.

The convergence of web3 technologies with time-tested patterns of community finance creates unprecedented opportunities for building resilient economic systems. Just as mycelial networks maintain forest health through distributed intelligence and dynamic resource flows, these new financial tools can help communities thrive through periods of change and challenge.

The path forward requires engagement from multiple stakeholders:

For Web3 Builders

- Study historical community finance systems to understand proven patterns.
- Design for real community needs rather than theoretical use cases.
- Build flexible, interoperable components rather than monolithic systems.
- Prioritize user experience and gradual complexity growth.

For Community Organizers

- Identify specific local needs that could benefit from programmable trust systems.
- Start small with proven mechanisms like mutual aid, commitment pools, or time banking.
- Build bridges between traditional community finance and web3 tools.
- Document and share learnings to help the ecosystem grow.

For Policy Makers

- Create regulatory frameworks that support community financial innovation.
- Recognize complementary currencies and mutual credit systems as legitimate tools.
- Lean in to support pilot projects testing these approaches whenever possible.

The tools for building resilient community financial systems are at hand and ready to bear. The challenge is not technical feasibility but clarity of vision and coordination. By learning from both historical examples and natural systems, we can create financial infrastructure using new coordinative technologies that strengthen communities rather than extracting from them.

If this is your vibe, join us at **MycoFi.Earth** to connect with others building these systems and access open-source tools and frameworks for implementation.

We Got Us

A Regen Hub Playbook

Benjamin Life and Kevin Owocki

Civic Utilities and Commons Architectures

It's easy to imagine that the world is neatly divided up into for-profit and non-profit activities. We're conditioned to go after "mine" and make donations to take care of some less fortunate "other." But what if we could go after ours? What if not every part of our local economy was based on a profit motive? What if we cut out the middle man profiting on our basic human needs?

These are the questions that civic utilities and commons architectures aim to address.

Through dynamic, self-governing communal ownership of shared infrastructure, we can use the power of coordination and aligned incentives to provide utility and value that has traditionally been reserved for the private sector.

These civic infrastructures serve communities, cooperatives, and the commons by supporting the creation of value without extracting a profit, able to lower costs through the participatory means of cooperativism, volunteerism, and mutual responsibility.

Civic utilities increase the quality of life of our community through agent-centric coordination, enabling members of our communities to contribute what they have and receive what they need.

To illustrate this concept in practice, let's take a look at a case study currently underway in Boulder, CO.

Case Study: The Regen Hub

The COVID-19 pandemic rapidly accelerated an existing pattern of "work from home," a trend that initially seemed liberatory for many as a means to avoid stale corporate workplace culture. But a few years into this new paradigm, after the peak of the pandemic had subsided, the lack of camaraderie, connection, and in-person collaboration had taken a toll.

Knowledge and tech workers faced a choice: continuing working from home in their bedroom or home office, attempt to find an increasingly rare and often noisy or crowded public third space like a library or coffee house, or pay exorbitant fees to get a desk at one of the many new co-working spaces that had sprung up in many urban and suburban places.

An alternative was needed, and all it took was a spontaneous post into a group chat of an existing high trust network of friends in the Boulder decentralized tech scene to realize that many peers and allies were in a similar situation, seeking a co-working space that was community-centered, affordable, and values-aligned. Already knowledgable in the principles and infrastructures of decentralized coordination, this group of friends quickly realized that a simple DAO with a minimal governance structure and a set of operational volunteer roles could provide the entire community with a

low cost alternative to corporate co-working spaces.

Using one of the friends' LLC, they were able to secure a 2 thousand square feet of office space in downtown Boulder, CO, taking advantage of the depressed commercial real estate market to lock it in at an incredibly low monthly rate. Using a friend's truck, they filled their new office space with furniture they were able to find for free on Craigslist and Facebook Marketplace. Another friend donated monitors from an old office space they had to close down a few months prior. Some of the more network-savvy of the friends bought a new router and configured the network, expensing the bigger costs to the DAO treasury. Others brought in plants, art, books, and zines.

The space was starting to come to life. A participatory governance model was established with all key decisions occurring at weekly family meetings. Six months into this experiment, the community around the Regen Hub has grown, with weekly happy hours hosted at 4:20pm every Friday serving as a schelling point for the social impact tech scene in Boulder, strengthening the network by providing a reliable third space for community gatherings, workshops, and events.

To help you create your own version of a thriving third space, below is a simple playbook to help you get started.

What Is A Regen Hub?

A Regen Hub is a community third space that utilizes revenue from co-working membership to provide a physical hub for localists, innovators, and change-makers to converge, coordinate, and collaborate, strengthening local networks by increasing the number of spontaneous interactions between aligned individuals. Co-working membership is not limited to individuals working in the impact space but the hub itself is explicitly oriented to regenerating our communities and commons via decentralized networks.

Regen Hubs are deeply connected to the localist movement, implying a highly contextual identity based on the emergent local contexts wherever they're located. For that reason, Regen Hubs can look and feel very different depending on the local social ecology in which they emerge, but what unites Regen Hubs is their provisioning of novel types of third spaces that utilize coordination and co-working revenue to provide value to their

extended communities.

The concept of a “third space,” originally coined by sociocultural theorist Homi K. Bhabha, describes a space where different cultures, perspectives, or paradigms intersect to create something new and transformative. In its standard definition, the third space is a hybrid zone where boundaries blur, fostering dialogue, negotiation, and the blending of ideas or identities.

In the context of a Regen Hub, a “third space” retains these foundational principles while expanding their application to systemic innovation and regeneration. A Regeb Hub is a participatory environment where diverse local groups—ranging from individuals and communities to organizations and ecosystems—co-create shared solutions that transcend traditional frameworks and ideologies.

These spaces embody the principles of commons governance and open protocols, emphasizing inclusivity, mutual care, and ecological regeneration. Regen Hubs serve as experimental community spaces for prototyping new governance models, community-driven economies, and participatory structures. They are neither entirely formal nor informal but operate as flexible, adaptive zones that prioritize collaboration, creativity, and collective flourishing.

The Regen Hub Playbook

Step 1: Trust

Like all civic utilities and commons architectures, at the foundation of the formation of a Regen Hub is a high trust network of friends and allies able to lean in and contribute to a shared effort for mutual benefit.

A classic challenge in any commons-based effort is the problem of free-loaders. Free loaders latch onto collective efforts to extract where others contribute. Beginning with a high trust network of friends and allies is critical to ensure that everyone participates, adds value, and can be trusted to steward common pool resources.

Start by identifying a core group of friends with pre-existing relationships, trust, and mutuality. Invite those folks into a group chat to get them onboard. A great way to begin developing a trust network is to start by hosting regular meet ups at the intersection of your desired community’s focus and values.

Giving plenty of time to build these trust networks is critical to ensure the individuals you build your Regen Hub with are sufficiently aligned and connected to make it through inevitable challenges, setbacks, or conflicts. This core group will create the “social membrane” or barrier, able to vet new participants based on their general alignment with the vibe of your core. New members should be vouched for by existing members. If no one can vouch for a new applicant, consider inviting them to your weekly meet-up or social hour to vet their general vibe and alignment with the space.

Step 2: Procurement

Finding commercial real estate requires a few key factors: passing a credit check and signing a lease. Identify who in your core group has the best credit or a legal entity that can sign on behalf of your group. Setting initial agreements will be very important to create the security and trust required for the individual using their legal entity to feel confident in entering into a lease contract on behalf of your hub.

Work with a local commercial real estate agent to find a space. Alternative arrangements can be made with non-commercial or existing community spaces, but those relationships can often be harder to manage than traditional transactional ones. Ideally, find a space that can accommodate a range of revenue streams from private offices (higher contribution), shared offices (medium contribution), and common space for hot desks (lower contribution). A central location is key but tradeoffs may be made to find a space with the right affordances.

Create a multi-signature wallet with your core founding team and raise the appropriate amount for the initial month’s rent, security deposit, and basic utilities. Transfer those funds to the LLC signing the contract with the landlord and secure the space. Wait to sign a contract on the space until you’ve put together enough funds to provide a safety net for your space, ideally equivalent to the initial start-up costs and 1-2 months rent to ensure a stable footing as you navigate the rapid development of your core operational and financial systems.

Once the space has been secured, utilize available resources to assemble the basic infrastructure of desks, tables, monitors, and anything you might need for a small kitchenette. Most of these things can be found for free on Craigslist or Facebook Marketplace if you’re patient and able to move quickly as new items become available. Some hard costs are inevitable

so an early process for reimbursements will be one of the most important initial governance protocols to establish.

Step 3: Governance, Membership, and Roles

Now that your space is coming to life, you'll need a core council that meets regularly to discuss new members, plan events, evaluate progress, and approve reimbursements. This core council should start with a trusted core of committed members but can grow over time to any co-working member interested in participating in governance.

Regular rhythms are key to ensure the development of the culture and space. Create a public and private group chat for the wider community and members. Schedule your first launch event and invite all of your friends who align with the values, mission, and vibe of the space.

Use this first event to gauge interest from your wider community on becoming a co-working member. Set up a simple website, form and project management space to begin receiving and processing new membership applications.

Elect roles for community and finance management. These roles are critical to ensure cultural coherence, maintenance of the space, and financial accountability for paying contributions. Set up claimable NFTs and other mechanisms for community members to self-attest and track their volunteer contributions to the space.

Once your inbound revenue exceeds your rent and utilities, consider providing donation-based membership to members able to volunteer their time to help steward and support the space. During weekly or bi-weekly family meetings with the core group, evaluate the vibes, financial health, desired improvement projects and maintenance needs.

Create a lightweight constitution for the space that outlines membership tiers, responsibilities, shared values, behavioral agreements, and roles. Make sure to include a section related to graduated sanctions for those who violate the agreement as well as an off-boarding protocol if a member must be asked to leave by the core council.

Step 4: Vibes and Programming

While financial stability is essential, the vibes and programming in the

space are what will attract new members and ensure a thriving third space. Ultimately, the space is about enjoying being in community together so vibes and fun are paramount. Consider community partners who you'd like to invite to host programming in the space.

Determine a security protocol for sharing door codes or keys with these community partners. At the start, you'll want to have a core member onsite for all community events. As community partners develop trust with the Hub, consider empowering them with 24/7 access to minimize the need for core member volunteers. Establishing a digital lock with personal codes as well as an internet-enabled security camera can empower you to empower others with access while maintaining the security of the space. Perhaps even more critical than community-partner programming is the creation of weekly social hours. By offering reliable spaces for your extended community to converge in unstructured social connection time, new collaborations and relationships will flourish organically. Ensure the right members of your community are invited to these weekly social hours to keep the vibes high and conversations fruitful.

Step 5: Resolving Common Problems

Invariably, challenges or issues will emerge.

Conflict between members will require a trusted third party mediator to help resolve them.

Delinquent payment of rent contribution can put the entire space into jeopardy if payments to the landlord are missed.

Having hard conversations with community members is essential to call them into alignment with the agreements they have made as a member. Many of these issues can be resolved through distributed culture and peer accountability. It can often be overwhelming for the volunteer roles of a space to have to take on all of these responsibilities in addition to their baseline contributions so each member must feel empowered and responsible for the collective stewardship of the space from cleanliness to timely payments to behavioral agreements.

If challenges escalate beyond the membership's ability to address peer to peer, make sure to have a trusted third party mediator in your network to help facilitate. If you or your community don't have such a person, consider reaching out to one of the many online communities of dialogue facilitators and conflict resolution specialists.

Legally, this type of self-organization doesn't fall neatly into traditional legal structures. Utilize a member's LLC for basic protections and filing requirements at first but consider creating a Decentralized Unincorporated Non-Profit Association in Wyoming or a Colorado Limited Cooperative Association to provide better legal protections as you grow. A binding arbitration agreement could also provide some basic legal coverage for members if you're concerned about members taking legal action against one another or the space.

Ideally, the cultural membrane of the space will be strong enough to only allow in highly aligned members, front running these challenges by doing the due diligence on new member applicants to create the initial conditions for a laid back, coherent space.

Step 6: Iterate, Iterate, Iterate

Even though the steps outlined above provide an initial guide to getting your Regen Hub started, the most critical capacity for any emergent, community-driven initiative is the capacity to iterate and evolve. A minimum viable coordination and governance structure should enable your core group to sense the evolving needs of the community and create new solutions that address those needs.

Meeting regularly is critical to maintain an active sensing of how things are evolving. Creating accountabilities and projects to address the needs you're sensing helps to establish integrity and ensure follow through. Self-identifying leaders for projects helps to create clear communication and coordination support to respond to the needs you've identified.

What's right for RegenHub Boulder may not align with the needs of your local area. It's crucial to build your own tools for understanding and decision-making—using your own observations, intuition, and community input to adapt and evolve effectively. Your Regenhub is a journey, not a destination. By staying open to learning and iterating, you can create solutions that truly reflect the unique dynamics of your community.

Emergent Outcomes

Third spaces like a Regen Hub create the conditions for prosocial emergence, helping to activate and support latent capacities in your community. Emergent benefits include:

Free space for community events: You've just unlocked a new venue for your community to host free or low cost programming

Friendship and belonging: In an age of isolation where maintaining IRL friendships can be challenging for many, having a Regen Hub in your community offers a place to socialize, bond, and belong.

Civic tech hub: Need a place to host some servers or run some nodes for your community's p2p or blockchain infrastructure? A Regen Hub can host physical and digital infrastructure for your local non-profit and mutual aid ecosystem.

Collaborative Braintrust: Do you need feedback or support from capable peers? Regen Hubs gather a particular subset of community with related but distinct domains of expertise. Sometimes you need a fresh perspective to take your project to the next level.

Scenius: Scenius is a term coined by musician and producer Brian Eno to describe the collective intelligence and creativity that emerges within a thriving community of people working together. Unlike the traditional idea of a lone genius, scenius suggests that breakthroughs and innovation are often the result of collaborative networks, where ideas are freely exchanged, refined, and built upon.

Network Effects: The Regen Hub serves as an open protocol for a civic utilities, offering templates for self-organizing third spaces. By utilizing on-chain reputation and coordination, locally governed hubs can easily connect and share token registries. This means reputation at one hub can grant access to other sister hubs, fostering a seamless and decentralized network of collaborative spaces.

Please create your own Regen Hubs and let us know so we can federate and start creating network effects.

What We've Learned In Boulder

Having engaged in this process in Boulder for 6 months or more at the time of publication, we've generated a few key insights.

First, having some financial stability offered by members who can help fill financial gaps is incredibly helpful for a fledgling third space as it launch-

es. Giving yourself some extra runway if at all possible will help you focus on vibes over revenue, a key ingredient for making a space sustainable in the longterm and attractive to new members in the short term.

Finding key contributors who can add a disproportionate amount of volunteer labor as you're starting out is also key as there will be a heavy lift at the onset requiring more coordination support than once the space has its own inertia and trajectory.

Tracking volunteer contributions is a whole job in and of itself so having a high amount of trust with members volunteering their time in exchange for work space is important. Ideally, there won't be tons of volunteer labor needed, so avoid overcommitting too many free co-working memberships spaces.

Hosting community events for free is critical but having an easy way for community members to donate to the space is equally important.

The Future Of Civic Utilities And Commons Architectures

As a pattern, using decentralized coordination to provision services to your community at cost is an exciting new strategy for a whole range of community-based initiatives.

Communities in Boulder are already working on innovations like participatory budgeting for localized grants that empower communities to directly shape the allocation of resources. Similarly, early explorations of community currencies as self-governed civic utilities are being explored to unlock the untapped potential of local economies. But this is just the beginning!

Our next local goal in Boulder is the creation of SaunaDAO, collectively owned sauna, cold plunge, and hot tub infrastructure around the city that is managed by volunteers and some basic coordination technology for scheduling, permissions, and maintenance. Next, we might begin to imagine health cooperatives that pay the salaries for a host of yoga, Ayurveda, and holistic medicine practitioners, food system networks that use tokenization to provide food on a donation basis, and housing cooperatives that purchase apartment buildings on behalf of member-owners are among the many innovative strategies that can leverage this type of thinking to provide core services and goods to community members without extracting profit.

We imagine a world where these types of civic utilities are a common-

place aspect of our local economies, empowering collective ownership of the shared infrastructures that add value and improve the quality of our lives. While we're not against profit as a concept, we see the tremendous unlock that decentralized coordination can provide to remove the profit incentive in the context of the foundations of what make life and community meaningful, rich, and abundant. We hope this guide will inspire you to create civic utilities and commons architectures in your own community. If you end up creating your own Regen Hub, come say hi in our open community Telegram so we can explore creating a loose federation of Regen Hubs around the world.

We Got Us,

– Benjamin Life and Kevin Owocki

