FINDING WILDLAND'S SOUL

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OVERVIEW

This report describes how <u>Wildland</u>, a decentralized storage platform spun out of Golem Foundation, can integrate plural technologies for diverse cooperation to move beyond web3 plutocracy toward <u>DeSoc</u> and <u>Plurality.</u>

Golem Foundation aims to move in this direction using a <u>User-Defined Organization (UDO)</u> – essentially a non-plutocratic DAO that gives users shared agency over the protocols, software and platforms they rely on.

We argue that a UDO will best realize its potential if a person's governance power in a network bears a relationship to how **socially central** they are to that network. But to formally measure sociality in Wildland, the plan is for users to earn governance power based on how much they "use" the Wildland storage marketplace (via non-transferable "Proof-of-Usage" or "PoU" tokens). As <u>BlockScience's</u> report thoroughly and convincingly argues, this design is concerning because exclusively tying political power to marketplace transactions threatens to leave us where we started – plutocracy.

Nonetheless, PoUs are a substantial improvement on coin voting governance, and with a few key refinements embedding principles of Plurality, Wildland can make a compelling first case for UDOs and non-plutocratic web3 governance. Soulbound tokens (SBTs) in particular can complement PoUs with a richer informational substrate for sociality that recognizes other kinds of community participation and enables more subsidiary governance models, correlation discounts, permissioned access to community resources, and even more robust security assurances for its decentralized storage system.

We conclude by discussing privacy and cheating concerns and recommending ways Wildland can begin bootstrapping its own decentralization.

INTRODUCTION

In this section we introduce Wildland and its existing primitives and governance parameters, as well as the framework of Plurality advanced by RadicalxChange Foundation.

Wildland

Wildland is an open protocol providing decentralized infrastructure for data management. It aims to redress the outsize power of traditional cloud providers and avoid platform lock-in by decoupling user data from any underlying storage provider – Wildland is <u>backend-agnostic</u> – and enabling data portability. For now only a few backends can be connected (including Dropbox, Google Drive, and IPFS) but the eventual goal is to have a storage marketplace, governed through well-crafted incentive systems designed to empower actual users.

However, despite its architectural decentralization, as a blockchain-based technology Wildland is premised on financial transactions and the use of scarce resources to delineate membership. Under such primitives, power is deterministically re-centralized in the hands of small groups — a predictable, all too common dynamic that must be anticipated and avoided if the network is to deliver on its goals of distributed and broad empowerment.

User-Defined Organizations (UDOs)

User-Defined Organizations (UDOs) have been conceptualized as an improvement upon the Distributed Autonomous Organizations (DAOs) paradigm.
DAOs are digital communities that coordinate through

automated governance rules and conditions, encoded on smart contracts. This new institutional format promised to enable networked public goods, where consumers and other stakeholders would have the ability to directly influence the technologies they used or were impacted by.

Yet the full anonymity of blockchain environments has posed a challenge to the development of such vibrant and participatory communities. Without identity markers, DAOs are restricted to governance models that derive membership from the use of scarce resources, such as one-dollar-one-vote, or one-cpu-one-vote. This model contrasts with their *distributive* aims, further entrenching the outsize power of technology companies and their investors in relation to other participants in the ecosystem. A few smaller DAOs have been able to circumvent this limitation by granting membership rights through interpersonal networks and Web2 reputation systems, such as social media profiles — yet this has been a precarious workaround, with <u>limited scalability</u>.

Golem Foundation <u>writes</u>, "Architectural decentralization should support political decentralization and not simply be a substitute for it." A User-Defined Organization is the Foundation's attempt at giving users shared agency over the protocols, software, and platforms they rely on. To overcome the deficiencies of DAOs, UDOs will employ:

I. **Usage patterns as a proxy to establish governance rights** within its network, thus ensuring those who actually use the platform are the ones who have the power to govern it.

II. **Non-tradeable tokens** to formally represent the allocation of these governance rights, hence reducing the surface of speculative economic attacks that can be successfully launched against it.

Proof-of-Usage (PoU)

Non-tradeable, Proof-of-Usage tokens are the means through which participants within Wildland's User-Defined Organization will be given decision rights over the *Build Fund*, a shared pool of resources dedicated to finance the future development and promotion of Wildland.

There are two primary ways through which PoU tokens will be acquired: (i) every unique Wildland user will receive a free cloud storage "starter pack" provided by Golem Foundation, alongside a PoU token; (ii) users with storage needs that exceed the free tier provided by the Foundation will be able to buy additional space at an open, multi-party, competitive Wildland marketplace.

Each payment made on this marketplace will be divided into three parts:

I.   **The service fee,** which constitutes the largest part of the whole payment and will go to the provider from whom the user has bought the storage.

II. **The Proof-of-Usage fee**, which will be converted through a GLM-burning mechanism into PoU tokens at a 1:1 ratio.

III. **The build fee,** which will be allocated to the Build Fund, out of which the future development and promotion of Wildland will be financed.

Finally, the Build Fund will adopt Plural Voting to disincentivize voters who don't care deeply about certain issues from casting several votes for them and to protect the interest of small groups with large stakes at certain governance outcomes.

Having established the primitives and assumptions of Wildland's governance schematic, we now set a few questions that will guide our inquiry in the present report:

• What are the means through which UDOs can prevent the power concentration dynamics at play in the DAO paradigm?

• How can UDOs establish protections against Sybil Attacks?

• Would it be possible to engage other stakeholders, such as builders or software providers, into the governance of UDOs?

• How can participants in the Wildland marketplace negotiate their different interests?

Plurality

Before diving into these questions, let us take a look at the concept of Plurality, an emerging technological and governance paradigm that will underpin many of the ideas outlined in this report.

Pluralism is based on the idea of recognizing and fostering the flourishing of, and cooperation between, a diversity of sociocultural groups and systems.

Pluralism is in contrast with universalism (or monism) — a philosophy with widespread implications on many of today's dominant institutional and economic formalisms. This contrast is best understood by one key distinction: while monism focuses on atomized, equally spaced *individuals* (or units of account), upon which universal rules are uniformly applied, pluralism is fundamentally interested in the *intersection of individuals and groups*, which is much

more complex and hence requires more nuanced mechanisms for effective coordination.

To understand how this distinction impacts different mechanisms, consider its implications on the basic institutions of *voting and property.*

One-person-one-vote takes the universalist assumption that all individuals are equally spaced between each other in their affiliations and solidarities, and have equivalent weights to their preferences. While this uniform distribution of power might seem fair, it tends toward unrepresentative results, as the preferences of most minority groups are nullified (which can and often has led to problems like the Tyranny of the Majority).

In contrast, Plural Voting achieves an approximately optimal collective decision procedure through two mechanisms: first, it lets participants flexibly express the intensity of their choices through a range of "voice credits"; second, it incentivizes coalition-building by making large individual contributions much more costly than an equivalent amount of votes coming from multiple individuals.
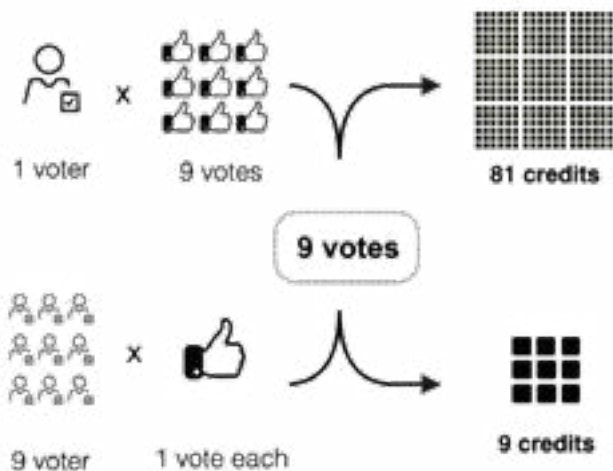
Effectively, this means *groups* are emphasized as much as *individuals*, and the preferences of participants are not universally boxed in a uniform, predetermined weight.

Plural Property provides another example of how individual and group interests can be better balanced with the right incentive systems in place. While private property is centered on individual rights, it fails to account for the source of most value creation: groups and their relationships. As such, this individual-centric model is incompatible with network goods of increasing returns, as it gives unchecked powers for a few actors to extract rents from the wider community, throttling economic growth.

To address disproportionate market power concentrations, Plural Property has holders of an asset post a self-assessed price at which anyone else can buy the asset from them. According to this price, a periodic tax must be paid to the broader network. This way, property holders are incentivized to not under-value their assets (or they run the risk of being bought out by others), or overvalue their assets (as the amount of taxes they pay will rise accordingly). This method makes the market more competitive and puts a check on rent extraction, so property becomes more fluidly shared between current possessors of an asset (individuals), and society at large (groups).

At a fundamental level, each of these mechanisms is acting as a negotiating agent that seeks to balance individual and collective interests in an algorithmic manner. However, it is important to emphasize that each pluralist concept comes with its own complexities and tradeoffs, which need to be closely examined to ensure proper implementation.

For instance, Plural Voting brings transactionality into decision-making procedures, thus it can re-centralize power (as in one-dollar-one-vote governance) if the distribution

of voice credits is rendered extremely unequal by external mechanisms. The mechanism also overcompensates groups with pre-existing ties of solidarity. Hence the need for additional checks, such as correlation discounting, to prevent PV from significantly skewing outcomes in favor of a single affiliated group, "oversolving" for their coordination.

In the following sections we outline how the same principles apply to identity primitives, public goods funding mechanisms, and security regimes for decentralized storage, helping the Wildland Network establish a pluralist foundation upon which it can grow and gradually decentralize itself.

Plural Memberships

Wildland's goal is to "empower individual users by freeing them from the dependency on unaccountable corporate entities that dominate the current internet landscape." It naturally follows that the authority to decide on the allocation of resources in the Build Fund should rest with Wildland's users. However, as the DAO experiment suggests, it is important to carefully analyze the proxies being used to define *who* can be considered a user, and *how* their decision-making power is established.

When Proof-of-Usage is narrowly understood as a reflection of marketplace transactions, membership rights in UDOs remain premised on objectively measurable, scarce resources — similarly to the DAO paradigm. This model risks leading to the dominance of large buyers, whose interests may be misaligned with those of the typical or prospective user, in important ways. For example, they may prioritize developments that make smaller operations too costly or slow for the typical user. Or they may undervalue the importance of thorough and user-friendly documentation, which would make the network more accessible to non-technical prospective users. Note that we do not put a normative value on these priorities, but simply point that incentive misalignments exist and should be taken into account in the governance design.

Proof-of-Usage as currently designed does not effectively measure sociality. To derive participation metrics more optimally, additional patterns could be explored such as the amount of gigabytes being stored, or the types of storage being consumed. These can be used to create more subsidiary governance structures, where users who consume any given type of storage can weigh in more powerfully on

decisions that concern their needs (more detail in the following section).

There are limitations, however, to inferences that can be made based on the usage of strictly objective resources. As a thought experiment, we can imagine two users with the exact same amount of storage consumption, but which come from vastly different positions. The first could be a DAO, representing the interests of thousands of participants, whereas the second could be a private business, accountable to a few individuals only. Should both have exactly the same kind of influence over the network?

Soulbound tokens (SBTs) can help address this question by providing more visibility into the interests at play in the Wildland ecosystem. These are publicly visible, non-transferable but possibly revocable tokens. An equal or better label is _community-bound tokens (CBTs)_, but this report will use SBTs for simplicity. The aim of such tokens is to represent various kinds of relationships and personally consented commitments, which may include affiliations, memberships and credentials, as well as permissions, rights and responsibilities. SBTs can work together with PoUs to move beyond strictly financialized membership and governance, instead representing other forms of human sociality and solidarity, and thus furthering the grand goal of UDOs to meaningfully decentralize power.

There are a number of instances in which having a more granular mapping of the participants in Wildland's marketplace can result in consequential gains to the network as a whole:

I.   **In establishing the reliability of storage providers.** Wildland does not promise persistence in its storage offerings. Instead it offers security through redundancy, concurrently mirroring data across multiple providers. It follows that

having a large set of _diverse_ providers is a crucial security need. Yet today, only a few trusted backends can be connected, such as Dropbox, Google Drive and IPFS. To build an open and wide-reaching marketplace, a mechanism is required to establish the reliability of storage providers, hence preventing data from becoming lost, or devices from becoming unavailable.

II.   **In illuminating the existing lines of trust, cooperation and solidarity, as well as social, economic and geographical cleavages** that exist across participants in the network. From a governance perspective, this would help measure and reward the _diversity of support_ behind each proposal in the Build Fund – a desirable metric, since correlated groups are prone to make similar errors in judgment or share biases. From a security perspective, this would enable taking measures that prevent socially correlated groups from accidentally coordinating or even intentionally colluding against other groups within the network.

III. **In increasing protections against Sybil Attacks.** To ensure the legitimacy of its governance processes, UDOs need to differentiate between unique humans and probable bots, among its participants. To that end, the Wildland Network can use a Proof of Personhood solution, such as BrightID. However, globally unique human signaling is not only vulnerable to multiple kinds of coordinated attacks, but also limited to universal applications, that treat all participants in the same way. A more robust approach is to integrate a PoP solution with SBTs, hence gradually establishing _differentiated_ humans, with their unique traits and solidarities. This would amplify the scope of possible governance designs, as mentioned above, while also offering a richer computable substrate, which can be used to map patterns that signal possible Sybils (in which case protective measures can be raised), or rule them out.

Some worry SBTs will create a panopticon of sociality. But thoughtful encryption schemes will ensure only *partial* and *mutually-consented* data sharing, where no two people have the same partial view of sociality (see sections on "Existing Implementations" and "Privacy and Cheating"). Striking the right balance between privacy and publicity will depend on more research and experimentation, as has been the case for the implementation of other RadicalxChange concepts, such as Plural Voting and Plural Funding.

There is an important question of who has the power to issue and assign SBTs, especially since the issuing of SBTs directly affects the distribution of power through PoUs. There is also the question of how this power to self-define groups via SBTs evolves and adapts over time. Here Wildland can learn from examples of progressive decentralization, such as Gitcoin, which has effectively transitioned to a DAO, and Wikipedia, perhaps the best example of empowering local moderation.

We suggest starting with a small number of defined groups and SBT-issuing authorities, branching out from the founding members like a web of trust; over time participants can progressively build reputation, establish provenance, and access more opportunities. Such authorities should also have bounded abilities to sanction the formation of other (derivative or otherwise) SBT-issuers. This lets the ecosystem evolve, but sustainably and with thoughtful constraints. Eventually, the UDO could assign PoU power not just to individual users but also to SBT-defined groups themselves.

It is important to note that sociality is emergent and thus unpredictable. Still we suggest below some likely intersections and dimensions of sociality that may become relevant for bootstrapping a rich ecosystem of SBTs to illuminate substructures within the community and support governance designs of increasing complexity:

- **Usage Pattern:** users can be grouped into different tiers through SBTs that reflect the amount of gigabytes being stored by them, the number of transfers made, and how long they have been a part of the network.

- **Storage Type:** different types of storage reflect different needs and preferences of users. SBTs can provide a map of the diverse needs and uses in the system (e.g. those of commercial providers, or those of users accessing the network from their personal computers).

- **App Integrations:** similar to storage type, as Wildland develops and enables integrations with other applications, the integrations that users plug into signal the different kinds of purposes and reasons for joining and using Wildland, which SBTs can begin to measure.

- **Locality:** mapping the different localities out of which users are connecting to the network may facilitate the formation of dedicated subgroups that weigh in on accessibility questions (such as translations), or partner to advance the adoption of Wildland within their region. Although geolocation is an easily gameable data point, such SBTs could be strictly granted to more highly trusted users (that already possess an abundance of other SBTs), and participate in local groups with thick communal relationships.

- **Engagement:** users that contribute to the network by working on documentation, mediating forum debates, participating in online or offline events, or promoting the project through various means, can be granted SBTs that unlock broader governance rights, access to additional free storage, and other benefits.

SBTs have the flexibility to represent and proliferate nuanced rights, selectively permissioning access to different features or resources, or granting rights to weigh in on

particular decisions. Since the allocation of resources in the Build Fund is likely to impact many different groups of stakeholders, and to different degrees, it makes sense to consider granting governance rights to groups other than users. These rights can range from global to specific decision-making spheres, as developed in the next section.

Other stakeholders could include:

I.   **Service providers**: the individuals or entities offering services related to the management of containers in Wildland, such as storage, resource directories, etc., which could be granted specific *service providers* SBTs (with different subgroups within).

II.   **Builders:** individuals or entities engaged in the development of the core Wildland infrastructure and associated protocols or providers of various other services beneficial to the Wildland ecosystem, which could be granted specific *builders* SBTs (with different subgroups within).

For each of these groups, the locality, usage and engagement metrics mentioned above can also be signaled through SBTs, providing greater insight into the affiliations and solidarities existing within the network.

Plural Build Fund

Currently, the Build Fund is imagined as a single pool of funds to be allocated via Plural Funding to public goods throughout the ecosystem. But while there are certainly broadly shared public goods across the Wildland ecosystem that require an ecosystem-wide layer of the Build Fund, many public goods are likely to be shared locally in different pockets of the ecosystem by subgroups.

In fact, these local pockets are how users may naturally join the ecosystem. Users start out in communities and ecosystems for particular reasons, and they interact with other particular users at first, before they start to branch out and learn where else they fit in, deepening their ties to the community in different ways.

Thus when users join the Wildland ecosystem, it makes less sense for their voice to apply equally across the ecosystem, of which they know rather little in the beginning, than to be bound to the initial, local contexts in which they start out. Then over time, as users form deeper and more trusting relationships with others in the wider network and become more knowledgeable of the varied experiences and situations throughout Wildland, their voice naturally and gradually broadens as well.

For these reasons we imagine a multi-level Build Fund that maps upon the nested communities in Wildland. Such a multi-tiered structure is both aligned with and actually unlocks the powerful incentives of SBTs. For example, for an ecosystem-wide funding round or vote, the Build Fund could force context on potential vectors of accidental cooperation or intentional collusion one level of community structure below them, by requiring every participating user

to hold an SBT of a particular sub-group.

With these primitives in place, it is possible to implement correlation discounts, which account for the dimensions of solidarity among the voters supporting a particular proposal (signaled by the SBTs they hold) and apply a lower vote weight to those who are highly correlated.

A simple example of this is pairwise-bounded plural funding, which discounts correlations across plural funding contributions themselves. Correlation discounting can prevent large users (i.e. those with higher gigabyte storage consumption) from having disproportionate power over decisions in the Build Fund that would disenfranchise the broader user base.

Plural Voting and Funding (and even deliberative tools as well) with correlation discounts can be seen as an improvement on the Penrose Method. Lionel Penrose showed that under certain conditions, the power of a holder of several votes grows as the square of their vote weight, rather than linearly; that is, the power of someone with M votes is the same as M2 separate people each with one vote. Thus small holders will inherently be disadvantaged. This is also called the Banzhaf power index. Thus Penrose designed a rule of degressive proportionality that gives groups voting power equal to the square root of its population. The United States Senate and the European Union share important elements of *degressive proportionality*, but the only correlating factor used is geography.

With a rich ecosystem of SBTs, the Build Fund could deliver a degressively proportional system along many different dimensions of social cleavages, and Wildland could better address network inequality and foster meaningful decentralization by encouraging diverse cooperation.

Importantly, applying this to every level of governance creates countervailing incentives for holding a particular SBT. A reason to hold an SBT is that if a user wants access to sub-governance of a particular aspect or subcommunity, they must hold an SBT representing that subgroup, or else governance is gated and they cannot participate. But this comes at a cost, which is that for governance decisions over broader, higher levels of the ecosystem, those who hold the same SBTs are put into correlated groups and their voices are discounted in order to foster cooperation across difference. By gating ecosystem-wide decisions to participants that reveal context from the sub-communities they are a part of, this multi-layered governance system can offset the incentives to hide SBTs.

Plural Storage

Novel cryptographic platforms for file storage promise decentralization, security and prevention of attacks by seeking **distributed redundancy**. But in their pursuit of redundancy, they limit themselves to purely anonymous and financial mechanisms.

A leading example is Filecoin, in which the only two parameters users can consider when choosing among storage options are geographic location and price. This is fine for some narrow use cases, but for many others, people have all kinds of specific needs (e.g. various security and regulatory requirements) that are complex and not captured by location and price. The lack of information about storage compliance with such needs is likely a major reason cryptographic file storage protocols have failed to reach mainstream adoption.

The lack of complexity also limits how much redundancy can even be achieved. Effectively distributed redundancy is not achieved solely by choosing the lowest-cost providers, even if they are spread out around the world. It comes from making *diverse hedges against risk*. Markets naturally concentrate due to efficiencies of scale (e.g. Bitcoin mining pools) and are vulnerable to all sorts of (local, geopolitical) risks and disruptions that location and price do not capture; effective redundancy is seeing and deliberately compensating for such concentrations. For example, the Ethereum community seeks diversified security in Staking and encouraging nodes to have diverse clients. But diverse hedging is not possible with economic mechanisms alone; it requires tracking locality and social structure, which can be done with SBTs.

Imagine certification organizations (perhaps audited by a consortium that includes Golem Foundation, and eventually supported by Wildland's Build Fund) who issue SBTs to personal computers that are, for example, compliant with certain security standards. Then users would be able to search for PCs that meet their required standards or that otherwise offer some hedge to bolster redundancy. By tracking the kinds of networked affiliations in the system, SBTs could allow for much broader use of distributed file storage and help decentralize the cloud storage market (and eventually cloud computing market) globally across personal computers.

Wildland seems well-positioned to provide users with this kind of architecture. Its backend-agnosticism, meant to decouple user data from any underlying storage provider, also means Wildland can provide much broader ranges of storage options with linked SBTs for its users to search across.

Existing Implementations

In their simplest form SBTs are trivial to create, and there are many existing standards that can be used and built upon to integrate SBT functionality into the Wildland network. In this section we will cover some of the options worth exploring.

• Minting and issuing SBTs can actually be computationally-efficient and gas-free. Also see more technical commentary.

• Sismo.io will launch in July 2022, offering non-transferable "badges" to public Ethereum profiles (ENS names). These badges will work with Zero-Knowledge (ZK) attestations of facts imported from other accounts (on Ethereum, as well as Twitter or Github) that can be aggregated to build reputation, with confidentiality, to a public profile.

• Others building ZK SBTs include 0xPARC, Iden3 and Polygon. Github repo leveraging Iden3 here.

• Open Zeppelin Governor enables vote tracking, vote counting, timelocks and other features that can be visualized through the intuitive interface provided by Tally. The team at Tally created this simple tutorial on how to create a SBT that can be integrated with the Open Zeppelin tools.

• Tribz.xyz is enabling Souldrops — airdrops of SBTs — to contributors of different open source repositories, such as Open Zeppelin and IPFS.

• BrightID, a Proof of Personhood solution, created a

Proof of Concept Soulbound NFT standard that addresses the transferability dilemma. In the absence of more sophisticated community recovery solutions (an area of active research), fully non-transferable SBTs face several limitations in cases of compromised wallets, or even more simply, when users want to change or restructure their addresses. To address this challenge, BrightID's standard enables special token transfers called "rescues" that are allowed when a BrightID owner can provide proof that the token owner wallet belonged to them.

• Gitcoin Passport allows users to collect non-transferable "stamps" that represent their unique personhood and sociality. The quantity and variety of reputable stamps help determine a user's "trust score", which affects how their Gitcoin Grants contributions are matched. Gitcoin signs the stamps and stores them on the Ceramic Network. At least for now, the stamps are associated with a user's Decentralized Identifier (DID) but controlled by Gitcoin's DID.

• Optimism Collective will use SBTs to gate access to its new Citizens' House, which will govern and allocate Optimism's Build Fund equivalent for public goods, "creating a flywheel of protocol development." This is part of its plans for a bicameral governance system of Token and Citizens' Houses. The Token House will use coin voting governance for protocol upgrades and project incentives to "drive growth"; the project is transparent about token airdrop allocations and its eligibility criteria. As Golem Foundation seeks to balance its responsibilities toward GLM with the desire to move beyond coin voting governance, a similar bicameral system may make sense. Wildland may need a similar Working Constitution and active forum for deliberation. Golem Foundation may similarly consider itself a steward "running experiments, bootstrapping the ecosystem, and eventually dissolving."

- <u>Sekuritance</u> plans to <u>mint SBTs</u> for compliance use cases like KYC and AML, so that "users… have more efficient control over verifying their identity on platforms via decentralized access."

Privacy & Cheating

There is no requirement for SBTs to be linked to a legal name. Instead, they can be accumulated through a persistent pseudonym, with anti-Sybil properties naturally emerging over time. Nevertheless, SBTs raise important questions of privacy and cheating, which remain unanswered but we can begin to sketch in terms of incentive compatibility.

Privacy is a real concern with SBTs: SBTs reveal personal information, and too much of this leaves people vulnerable. Certain kinds of personal information should simply not be tracked publicly or have public implications. Other kinds, such as what might go on a resume, are fine to reveal publicly. Arguably most kinds of information are contextual, which means they belong somewhere between purely public and purely private, within the relevant sphere of intimacy and local context.

In these cases, various combinations of privacy techniques can apply. A simple way to protect privacy is to store the data that an SBT represents off-chain (in Wildland), and leave only the hash of the data on-chain. **In fact, this is an interesting use case for Wildland which, if implemented well, could make it an important part of the emerging SBT ecosystem.**

More <u>cryptographically sophisticated approaches</u> may also be useful. For example, if the only relevant information is whether a user has certain memberships, there are cryptographic techniques to reveal that information and nothing else. Zero knowledge proofs can be computed over SBTs that prove a user's membership, and no other information about them is revealed to the verifier. Multi-party computation techniques like garbled circuits enhance the privacy of

membership verification processes by hiding the verification mechanism from the user.

A sociotechnical system should also hold social context and maintain accountability to shared standards. Such is the nature of pluralistic thinking about multi-level interactions: many groups are empowered in a decentralized way to keep power away from the center, but at the same time those groups are discouraged from local rent-seeking that would undermine broader solidarity and common interests.

Achieving this balance between local control and diverse cooperation requires elements of *partial publicity*. To understand the value of publicity, consider blockchains generally. They are known for their financial use in solving double spend, but the features that allow them to do so are not special to that problem. Instead, what blockchains enable is publicity–the ability to make public, consequential commitments–which has many uses beyond double spend and can be crucial for credibility and systems of scarcity. Without some kind of publicity, social coordination and governance is hampered by the fact that colluding groups can privately communicate, coordinate against broader interests, and hide from correlation discounting.

Keep in mind, however, that while blockchain-enabled fully public SBTs may, in a few cases, be a viable starting point, the goal is to achieve programmably plural privacy and partial publicity toward contextual integrity. This eschews the false divide of individual privacy and global publicity to deliver partial, plural, intersectional publicity, where SBTs can safely represent our private, partially private, and public commitments.

Then there is the related issue of cheating. Even with some kind of publicity about social solidarities, colluding groups can hide themselves by misrepresentation or faking other

solidarities; meanwhile, they can still effectively coordinate outside the system through side channels.

Ideally the incentives to hold an SBT–to gain access and maximize influence–countervail and balance out the incentives not to hold it. SBTs can gate and permission access to governance, such that users will want to hold more SBTs that give them access to governance and influence within the groups they care about. And SBTs can discount coordination, such that users will want to hold fewer SBTs, or none at all, from groups they care less about in order to score lower on correlation metrics and broaden their influence over the wider network.

Getting the incentives right so people reflect their true social commitments through SBTs depends on the SBTs gating the governance of meaningful social or user clusters, i.e., meaningful user sub-communities. The safe and sensible pathway is starting out with SBTs that can be considered in the context of Wildland as *reputable* – emerging as much as possible from actual human relationships. This would help differentiate real community members from bots and fake accounts that may try to farm and accumulate fake SBTs but will inevitably, by definition, be shown to sit outside the relevant social context and network.

It also seems sensible to start out with SBTs that do not contain Personally Identifiable Information and only represent purely public commitments — as is the case with the majority of markers we recommend under the section on Plural Membership. One, this eases implementation since encryption techniques are less required. Two and more importantly, this lowers the risk of losing contextual integrity (privacy) since the SBTs are only representing limited information on-chain.

Over time, as more sophisticated encryption techniques

are deployed and privacy becomes more socially pro-grammable (beyond purely public or purely individualistic), measures can be introduced that address more complex gaming and manipulation. For example, in addition to the anti-sybil measures previously mentioned, MACI could solve for most potential bribes, since there would be no way for the bribe recipient to credibly prove to the briber that they hold a particular SBT.

Note that while these balances of incentives and of privacy and publicity are delicate, similarly delicate balances are present in other RxC-style mechanisms. The countervailing incentives to hold an SBT look much like the countervail-ing incentives of Harberger taxation to over- and under-value assets, which can be designed to offset (by taxing at the turnover rate) and reveal the true and subjective value of the asset. And introducing and proliferating elements of publicity with SBTs hold serious dangers alongside its promises. This is not so different from Quadratic Voting, which threatened to bring harmful market dynamics and transactionalism to politics, and required key refinements and thoughtful norms and practices to develop around it that better harness its benefits and reduce its risks.

Similar adjustments will be needed for SBTs that nurture their beneficial uses and prevent perilous ones. Critical developments will include solutions for community recov-ery and programmable privacy, as well as standards that, for example, differentiate between consented commit-ments (SBTs) and non-consented claims (tags).

Conclusion

Throughout this report we've described a series of path-ways that can be explored by Wildland to integrate the ideas and concepts advanced by RadicalxChange Foundation into UDOs. While we hope this supports the development of a roadmap that embraces Plurality, it is also important to acknowledge that sociotechnical systems can never be fully planned out in advance. The key is to begin small-scale, watch and learn from how the community interacts with the new developments, and iterate on feedback from their experiences.

This is how Gitcoin Grants successfully implemented Qua-dratic Funding. Though their product now has significant credibility and social proof, it needed time to gradually improve as the Gitcoin community used it more and more. Similarly in Wildland, these new primitives probably need the time and space to allow for human culture, common knowledge and social norms to emerge around them. Fur-thermore, the community will need to participate in imple-menting these primitives and to understand why they are important for the ecosystem, which means inclusive com-munication and intuitive interfaces.

There are challenges ahead, and good reasons for caution. But in a space that moves quickly, there is already much that can be done here with confidence. With a few small but meaningful steps in these directions, Wildland can estab-lish itself as a first-mover beyond plutocracy in web3 and toward Plurality.