Rook and public goods

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Rook's ability to operate as a credibly neutral, open marketplace is predicated on its fundamental commitment to operate in the service of public goods. This commitment is reflected in both the organization of our protocol and its tokenomics as well as the technology of organization we use by operating as a DAO.

PCV as Rook's Public Good

The Rook protocol is the infrastructure enabling a permissionless network whose users create and share value. It does this by coordinating participants' behavior in such a way that they realize and share the value they bring to the network, and in turn contribute to the ongoing development and innovation of the protocol. Doing this transforms the extractable private good of Maximal Extractable Value (MEV) into a shared public good: Protocol Coordinated Value (PCV).

Simply put, Rook turns *MEV* into *PCV*.

Rook's PCV meets the two definitional criteria of networked public goods. First, it's *antirivalrous*, meaning that the participation of any actor in the network delivers value to both the actor and the larger network [1]. Second, it's *non-excludable* - the network is permissionless, and charges users no direct fees. In fact, the protocol ensures that the value its participants create is distributed back to them, less a minimal tax that funds its ongoing development. It is also designed to block vectors for potential concentration (and thus rent-seeking) through the use of competitive auctions.

As a network public good, PCV doesn't exist on its own - it needs to be created and sustained over time. Rook accomplishes through two primary structures: the Rook

Protocol, which realizes and distributes this value, and the Rook DAO, which governs and funds the ongoing development of the Protocol, and coordinates the larger ecosystem of Rook stakeholders that interact with the protocol directly. For the sake of simplification, we can think of these stakeholders as a combination of *users* of the protocol (whether directly or through an integration partner) and *searchers* competing in its open marketplace. Taken together, the Protocol and the DAO work with Rook's stakeholders to create a public good flywheel that generates, distributes and recycles value back into the development of the protocol and ecosystem.

Rook's Public Good Flywheel
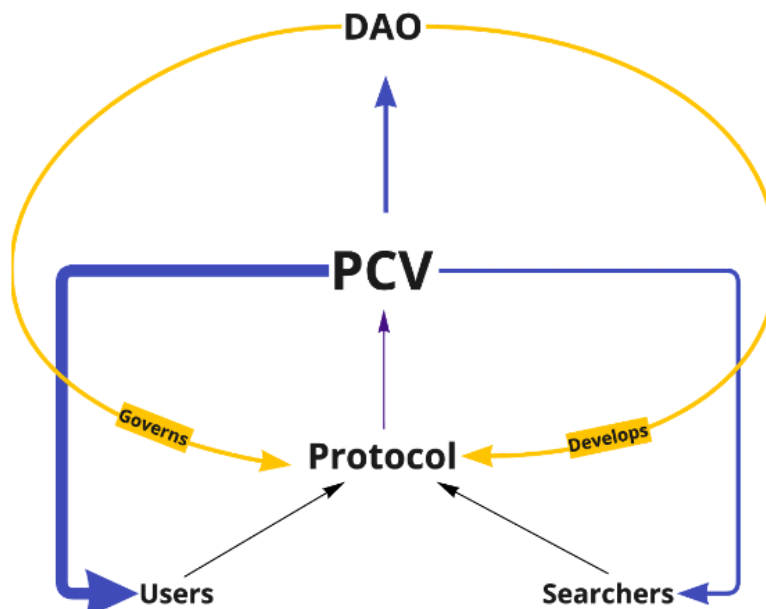
Realizing and Distributing PCV: The Rook Protocol

Rook's protocol is designed to coordinate participants' behavior through an interlocking set of mechanisms that support its ability to realize and distribute PCV as a public good. These mechanisms work together to create a public goods flywheel powered by the network externalities of increasing trade volume.

The protocol is designed to do this by providing the same potential utility and benefits to all of its participants. For *users* submitting transactions, the protocol delivers the best possible execution price <u>and</u> a rebate of the MEV created by those transactions. For

searchers competing to fill those transactions and provide rebates, the protocol creates a competitive bid marketplace where their bots have the potential to earn a portion of the rebates they generate, rather than competing with hundreds or thousands of bots in the wild.

Holding technology constant, the ability of searchers to crystallize the value of user transactions increases as a function of the number of trades they bid on, which in turn requires that users bring greater volume to the network. Incentivizing users with the bulk of rewards reflects the primary importance of both the value and the volume they bring to the network, even as sharing incentives with searchers should attract new searchers to make the network still more competitive in its price discovery. This tokenomics flywheel becomes a public goods flywheel with the addition of a small tax that flows from bids back to the DAO to fund the further development of the protocol.

The protocol controls against over-concentration by requiring searchers to submit their bids into a competitive auction market of other searchers, by incorporating some randomness in the auction process, and by building reputation for each searcher over time. This competitive dynamic serves a dual purpose of limiting concentration while also incentivizing constant development by searchers toward improving their performance.

Governing PCV: Rook DAO

Rook's coordinomics and mechanism design are necessary conditions for the ongoing creation of PCV as a public good, but aren't sufficient to protect its ongoing viability as a public good. The Rook DAO provides the organizational counterpart to the protocol by providing permissionless participation in the collective governance of the protocol and of the resources that fund its development and innovation.

Rook DAO governs through the Rook governance process, and involves a combination of direct decision making and targeted delegation of decision and execution power to named parties. This decision and oversight power provides a check on developments that are not aligned with Rook's long-term mission and are potentially harmful to the DAO and its larger ecosystem. It also ensures that the community is actively engaged with funding the ongoing research and development of the protocol.

The scope of the DAO is also dynamic, and likely to expand thoughtfully once aspects of the protocol transition from competitive (and thus private) research and development to become established aspects of the PCV flywheel. The ability to transition control to

become more decentralized over time is central to Rook's ability to continue to produce public goods that are also viable for the long term, a necessary condition for the maintenance of public goods. It also reflects our core value of coordination by opening aspects of the protocol to governance by a community that includes key integration partners and other stakeholders.

References

[1] Weber, S. (2004), _The Success of Open Source_, Harvard University Press, ISBN 978-0-674-01292-9