EOS Mainnet
Blockchain Governance Lessons Learned - March 2019

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These are personal recollections and observations by the author alone, and are not intended to represent the positions or opinions of any other organization or person. Errors are the fault of the author alone.

What is Governance?

A system of:

1. **Making** collective decisions
2. **Carrying out** those decisions - auditably, verifiably, accurately, correctly, completely
3. **Tweaking** the decision-making **rules**

What is Governance?

Example:

1. A group of 20 agree to share 5 large pizzas with specific toppings and crust options
2. Actually putting together the order, placing it (where?), paying for it, picking it up, and serving it
3. Amend rules for deciding on future shared meals

"Governance" often used narrowly

Some people use the term to mean

- Corporate Governance (board duties)
- Administration
- Reporting

These are all related to "carrying out" decisions

Key Concepts in Governance

- Principals and Agents
- Unilateral, Cooperative, Unanimous, vs Collective Decisions and Actions
- Information Asymmetry
- Contract Incompleteness
- Friction and the Concept of the Firm
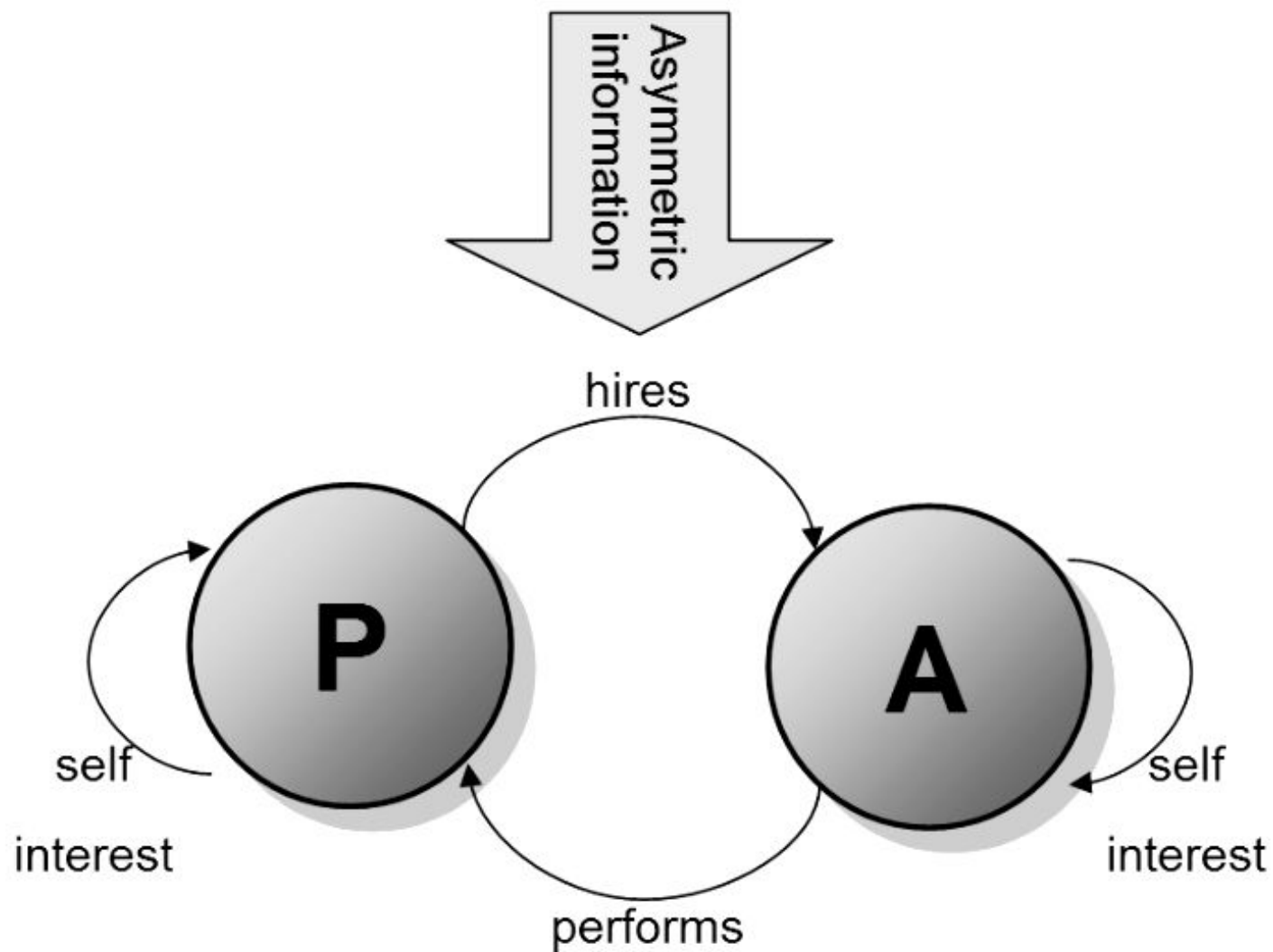
Key Concepts in Governance

Principals vs Agents -- a nested game

- Shareholders (Stakeholders) vs Board
- Board vs CEO
- CEO vs Staff
- Carver: Owners vs Board vs Staff vs Beneficiaries

Key Concepts in Governance

Principals and Agents -- the eternal struggle

- Self interest vs. Duty
- Information Asymmetry

Outline of this Presentation

1. Pre-Launch Assumptions

2. Pre-Launch Planning

3. Hypothesized Post-Launch Operations

4. Actual Post-Launch Operations

5. Lessons Learned and Patterns Suggested

6. Next Steps and Risks

1. **Pre-Launch Assumptions**
2. Pre-Launch Planning
3. Hypothesized Post-Launch Operations
4. Actual Post-Launch Operations
5. Lessons Learned and Patterns Suggested
6. Next Steps and Risks

EOS Mainnet Governance - Assumptions (Jan-Jun 2018)

A. There would be a Constitution

B. Token holders would embrace binding Arbitration

C. Token holders would vote actively to hold BPs accountable

D. Written (textual) contracts like RegProducer would be enforced by voters

What is a "Constitution"?

An agreement that we unanimously and freely enter into, whereby we agree to give the group the power:

1. To reach less-than-unanimous decisions that bind us all
   a. On specific topics
   b. Using various decision rules that can vary by topic
2. To compel us as individuals to honor those decisions
3. To change the decision rules via a collective process

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EOS Mainnet Governance - Planning (Jan-Jun 2018)

A. Constitution and Arbitration were socialized

B. Attempted to set Schelling Points

    a. BP subordination to the Constitution

    b. Voters as guardians of a shared set of rules

    c. Arbitration as a primary method of dispute resolution

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June Guesses about July-onward Activity

A. BPs would engage in disputes that they would settle via Arbitration

B. Vote selling & cartelization would be minimal

C. Any missing Governance elements would be launched soon after go-live (Referendum by August)

D. Voters would pass Referenda to set policy

E. Arbitration would be needed rarely, mostly for contract disputes

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EOS Mainnet Governance - Assumptions (Jan-Jun 2018)

A. There would be a Constitution

B. ~~Token holders would embrace binding Arbitration~~

C. ~~Token holders would vote actively to hold BPs accountable~~

D. ~~Written (textual) contracts like RegProducer would be enforced by voters~~

A. Yes, but some resist it

B. Token holders **rejected** Arbitration via ECAF (unelected, "secretive" etc. - much as ICC would have been)

C. Token holders have ignored BP behavior "as long as they make blocks" (and pay kickbacks?)

D. RegProducer largely ignored

June Guesses vs actual July-onward Activity

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E. Arbitration would be needed rarely, mostly for contract disputes

A. BPs never used Arbitration

B. Vote selling is off-chain; Cartels run Mainnet

C. Missing Governance elements were greatly delayed (Referendum by January and not in core code)

D. Voters ignore Referenda (max 2.33%)

E. Arbitration swamped with lost-key and hacking claims (that they arguably should not have taken on)

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Lessons Learned #1 - not enough real staking or automation

BPs can get paid for making blocks ("Block Pay") and getting votes ("Vote Pay"). Vote Pay keeps standby producers fed and available for service.

Neither BPs nor Voters faced any risk of loss for violations of stated norms:

1. A BP can register for free and not have a node, and still get paid for receiving votes ("Vote Pay"), with no risk
2. Voting for a nodeless BP is free and carries no risk
3. Disputes can't be raised and settled programmatically

Lessons Learned #2 - Arbitration wasn't protected

Arbitration wasn't protected from erosive forces. Protections might have included:

1. Could have excluded lost-key and (some) hacking cases entirely, reducing workload and narrowing focus to clear multi-party disputes
2. RegProducer could have said "BPs must execute Arbitration orders"
3. Arbitrators were not funded at launch; no free market for Arbitration arose

Lessons Learned #3 - Power matters; so do social values

The community had no strong shared set of values around enforcing the Constitution via BP voting, nor supporting (manual) Arbitration. (No "founding myth.")

1. No code-based enforcement was provided, e.g. disputes didn't automatically lock up tokens for an Arbitrator's MSIG signature
2. Failed the Kelsen Test of Efficacy [1]
   a. A norm is efficacious if it is actually (generally) followed by the relevant population.

[1] Hans Kelsen, ***The Pure Theory of Law*** https://plato.stanford.edu/entries/lawphil-theory/

Pattern #1: Ante, Lock, Risk and Reward

As we see in Decred voting, it's possible to link voting rights to voter risk:

- **Ante** (buy a 'ticket' to vote)
- **Lock** (buying a ticket locks up the buyer's tokens)
- **Risk** (if your ticket is drawn and you fail to vote, you lose your ante)
- **Reward** (if your ticket is drawn and you DO vote, you get Ante back, and you get paid a reward)

Similarly, BPs could be required to Ante weekly to re-register, and could forfeit their registration fee and their BP pay if they misbehave

Example of BP enforcement via 'altruistic punishment'

Design: Each BP's daily (Block + Vote) pay is sequestered in a personal lockbox for 7 days. Any two other paid BPs can 'file a grievance' for any reason, and ante 1 token for every 100 of the target's tokens to lock up.

At filing, 7 other standby BPs are randomly selected as a jury and have 7 days to agree 5/7 to burn the target's tokens, otherwise they are returned. (Successful plaintiffs get nothing; their ante is always burned.)

Selected Jurors who do not vote, lose their BP registration for the week.

Pattern #2: MSIG + time delays for Dispute Resolution

A criticism of EOS Mainnet Arbitration was that it could in theory put a HODLer's tokens at risk of "theft by Arbitration." The unlikelihood of this working was irrelevant, as the mere hypothetical threat violated a social norm of crypto that HODLed tokens should be as close to inviolate as the platform allows.

THEREFORE: establish a norm that every contract contain a 2-of-3 MSIG with a named Arbitrator, and a time delay for larger value amounts. Allow either party to 'freeze' the in-flight exchange and invoke Arbitration automatically. Allow the Arbitrator to enforce the ruling via the pre-set MSIG.

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EOS Mainnet is contemplating governance by BP fiat

Currently BPs are agents, acting under the Constitution and the RegProducer contract. They are protected from liability via contract law and Arbitration.

EOS New York has offered a BP MSIG transaction that would replace the current Constitution, without following the Constitution's rules for amendment.

This will be a new experiment in what some call "layerless DPoS governance" -- BPs will have to use low-turnout Referenda to infer voters' preferences, then take action, then see how voters react (if they do) via BPs being up- or down-voted.

Not "code is law" but rather "asking forgiveness instead of permission"

Governance by BP fiat could lead to increased liability

If BPs pass the MSIG transaction that replaces the current Constitution, they will amend governance rules without following the current Constitution's rules for amendment.

This could create a crisis of legal legitimacy. And it will strip the protections of default Arbitration from all BPs (and all other users of Mainnet). The proposed new EUA (End User Agreement) has no dispute resolution clause at all.

BPs would no longer be acting under a written agreement traceable to explicit, prior token holder approval. BPs legally could be seen as *de jure* 'in charge' of the chain and fully liable in local courts around the world. Without binding Arbitration, local courts will become the only venue for dispute resolution.

EOS Mainnet Suggested Next Steps

How to get a new, ratified Constitution and maintain legal legitimacy?

- Block.one could vote "present" on all referenda that include a new Constitution, thus giving all of them +10% turnout (toward the 15% threshold)
  - One votes 'present' by submitting an integer other than a 1 or 0 in a yes/no; or other than one of the valid integers in a multi-answer question.
- By voting neither 'yes' nor 'no' Block.one would leave the choice up to the rest of the community, AND signal the importance of voting.
- Exchanges and large HODLers could be privately encouraged to vote.
- The 15% threshold could be interpreted as 15% of all tokens then voting for BP

Questions?
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