# Tatterns for new incentive mechanism design and adoption

Common failure points and practical examples.

- ? QUE What are the patterns for designing a new incentive mechanism system, from inception to adoption by academia?
- ? QUE How do we know if a new incentive mechanism or tool is ready for academia?
- ? QUE What drives the acceptance and onboarding of scientists?

## Goal for the 2nd day

so priority is on achieving some escape velocity rather than "completing" a project or "closing" a topic/theme. We will consider it a success if each working group ends the workshop with 1) initial progress and momentum on the project's goals or a distillation of discussion themes, and/or 2) concrete, energized plans for next steps (e.g., "let's keep working on X and [submit it to Y, etc.])

#### ToDo:

- 1. Decide what outcome we want to achieve
- 2. Port all info to wiki
  - a. Copy links from past experiences
- 3. Prep presentation for larger group
- 💡 Wiki of incentive mechanisms:
  - Create an "incentive mechanism card", a structure om the wiki:

N.B.: old Notes ported to: <a href="https://synthesis-infrastructures.wiki/Social Systems">https://synthesis-infrastructures.wiki/Social Systems</a>

- imagine we have a wiki of all incentives ever designed, what would be the "mandatory" sections?
- Convert one of the examples in the chat to that structure



## **Opposing Opinions**

what are the points of tension, differences in values/experiences/etc. that cause them, ..., did we identify on the discussions of this working group?

#### CLM: Patterns

Patterns come from our reflective observations about our hands-on interactions to solve problems in the world. One simple definition is that a pattern is a repeatably applicable solution to a problem that arises in a specific context. What's the pattern form?

\_

#### CLM: Model Cards for new incentive mechanisms

Serve to disclose information about a new mechanism design. What would be the sections of a model card for a new incentive mechanism? Who proposed it, assumptions made, type of incentivized behavior, riks and perverse behavior, evaluation, theoretical support...

Incentive mechanism

|   | Example 1  | Example 2   | Notes:  |
|---|--|---|---|
| Mechanism<br>structure and<br>details             | Publicize<br>contribution (tiers &<br>digital tokens)  | Change our mind bounty  |   |
| Who built the incentive mechanism                 | Rescognito<br>(Richard Wynne)  | LabDAO  |   |
| What is the goal or outcome?                      | contribute info to a<br>knowledge/discourse<br>graph/evidence map  | Arrive at the optimal research proposal   |   |
| What is the desired behavior                      | encourage users to<br>contribute in more<br>granular and broader<br>ways than writing<br>papers  | Source<br>counter-points to<br>proposed research<br>project   |   |
| What is the structure of the mechanism?           | Users can contribute to some system and get other users to acknowledge that within the recognition.com platform, linking that open ledger of contributions (visualized) to their official ORCID records. Thus, many different forms of scholarly contributions can be recognized and added to a growing list of possibilities. | A proposal is submitted in a format where an alternative approach can be submitted to each claim in the proposal. If an alternative approach is taken the proposer is rewarded with a stake in the research project. The alternative approach suggestions would likely carry more weight when backed by synthesized evidence. |   |
| Do we need a license or agreement? What are legal | Rescognito: no<br>Sourcered: no  | likely  | If sharing data with others participants usually want |

N.B.: old Notes ported to: https://synthesis-infrastructures.wiki/Social Systems

| considerations?   |   |   | guarantee if reputation gain, publication or money, they have a stake. If give prize want agreement not just most impactful, but also positive impact. |
|---|---|---|--|
| Type of mechanism (Is it retroactive, prospective?)             | Social, prospective and retrospective?  | Retroactive   |  |
| Does it reward in money, reputation, hybrid?                    | (1) reputation<br>tiers<br>(2) visibility/publicity   | <ul><li>1) Reputation</li><li>2) Stage in project</li></ul>       | Use <a href="https://rescognito.co">https://rescognito.co</a> m/ (like PubPeer for any kind of contribution)   |
| Intended Use  |   |   |  |
| What is the scope?  | very broad, can be<br>used for many types<br>of contributions   | Per research<br>proposal  | Ex. if rewarding contributions, is awarding all contributors or is it award  |
| What is expected incentivised behavior (positive and negative)? | Positive (needs more detail on the behavior we want to promote)   | positive  |  |
| What is the linked data?  | Name and ID in ORCID linked to open ledger of scholarly contributions in Rescognito (no free possible yet?) | Claimed alternative<br>method and<br>supporting evidence          |  |
| Who are the stakeholders? Who are players in mechanism?         | open-minded<br>scholars at any stage<br>of education +<br>careeer   | open-minded<br>scholars at any stage<br>of education +<br>careeer |  |

N.B.: old Notes ported to: https://synthesis-infrastructures.wiki/Social Systems

| Is it decentralized?  | not for rescognito.com  | Can be decided on a per project basis.   |  |
|---|---|--|--|
| Technical requirements (from pen and paper through to testnet) Documentation, Set of Infrastructure, Software |   | Mechanism to capture who contributed what claims and distribute credit when agreed       |  |
| Feedback from users   | Let's demo it on a<br>group of<br>students/post-docs<br>and see how that<br>affects contributions |  |  |
| Design  |   |  |  |
| Test settings   |   | Decentralized<br>contribution graph<br>using the Discourse<br>Graph information<br>model |  |
|   |   |  |  |
| Quantitative<br>Analysis  |   |  |  |
| What was the model for testing the incentive mechanism?   |   |  |  |
| Results   |   |  |  |
| Risks and<br>Mitigations  |   |  |  |
| Anticipated risks<br>(how can people  | People may spend<br>too much time on  | Trusting that contributions when   |  |

N.B.: old Notes ported to: <a href="https://synthesis-infrastructures.wiki/Social-Systems">https://synthesis-infrastructures.wiki/Social-Systems</a>

| game the system?)                    | just the visible<br>rewards             | taken onboard are acknowledged (likely mitigated by starting within a trust network and building track record) |  |
|--------------------------------------|---|--|--|
| Links and resources                  |   |  |  |
| Documentation                        | rescognito.com<br>sourcecred.io/docs/   | Coming soon  |  |
| Public presentations, media or posts | YouTube: Rescognito YouTube: Sourcecred | Coming soon  |  |

Examples:

https://innovationsinfundraising.org/doku.php?id=tables:tools

Bibliography or references

## Goal for the workshop

"Resources, such as a system map/synthesis of the problem space, synthesis/directory of tools, essential reading list, case study library, or shared synthesis benchmark dataset"

- The best tools in the world mean nothing if no one adopts them. Let's merge together small scale testing, with rigorous validation.
- Create a resource that the tool builders across the group can glance at to not lose sight
  of the critical point of adoption. With practical examples of how these mechanisms are
  designed, iterated upon, and how they can be tested and communicated to academia.
  - Learnings from past and ongoing attempts (what truly motivates sustainable participation).
  - "A tool builder should check their assumptions agains this checklist before ..."
  - validate assumptions for the system that should work on a bigger scale / models to test the incentives
  - o Example:
    - Reputation & interactions in online space: how can we build better tools to help users navigate these spaces without being afraid of their reputation

## **Identified Open Problems**

- Acceptance and onboarding of scientists, even if we have a model that works in a small setting
- 2. Value attribution:
  - O How do you distribute rewards?
  - Opportunity side: new tools looking at ways to provide input to that distribution mechanism
  - O How do we connect the two sides?
- 3. How do we test the behavior of a model as it scales?
  - How do we predict the inventive structures or perverse behavior that will arise as it's adopted for a large number of players?
- 4. Incentive mechanisms for contributing and maintaining a collective knowledge graph

