



# Hypercerts

## for Regenerative Cryptoeconomics

Evan Miyazono, Ph.D.

Head of Network Goods, Protocol Labs





Section 1

just  
Yesterday, people did things  
^

Yesterday, people just did stuff:



People make stuff  
People buy/fork/mod/steal stuff  
“Seen” and “unseen” impact

Yesterday, people just did stuff:



People make stuff  
People buy/fork/mod/steal stuff  
“Seen” and “unseen” impact

Yesterday

**externality** (noun) -  
an indirect cost or benefit  
to an uninvolved third party  
that arises as an effect  
of another party's (or parties') activity



Costs: construction

Revenue: parking

Positive externalities: (?)

Negative externalities: absorbs heat, poor runoff



Costs: water, etc

Revenue: apples

Positive externalities:  $O_2$ ,

Negative externalities: (chemical treatments?)

**externality** (noun) -

an indirect cost or benefit

to an uninvolved third party

that arises as an effect

of another party's (or parties') activity

	<i>Rival</i>	<i>Non-Rival</i>
<i>Excludable</i>	Private	Toll
<i>Non-Excludable</i>	Commons	Public



Costs: construction

Revenue: parking

Positive externalities: (?)

Negative externalities: absorbs heat, poor runoff



Costs: water, etc

Revenue: apples

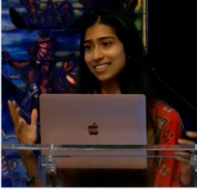
Positive externalities:  $O_2$ , rainfall absorption

Negative externalities: (chemical treatments?)

Yesterday

Also just a simplified model

	<i>Rival</i>	<i>Semi-Rival (Congestible)</i>	<i>Non-Rival</i>
<i>Excludable</i>	Private (Cup of Tea)	(Museum)	Club (Toll Road)
<i>Semi-Excludable</i>	(Office Printer)	(College Campus Pool)	(Book PDF)
<i>Non-Excludable</i>	Commons (Lake)	(Hiking Trails)	Public (Environment)



**Funding the Commons**

4

▶ ⏮ 🔊 1:40 / 18:28

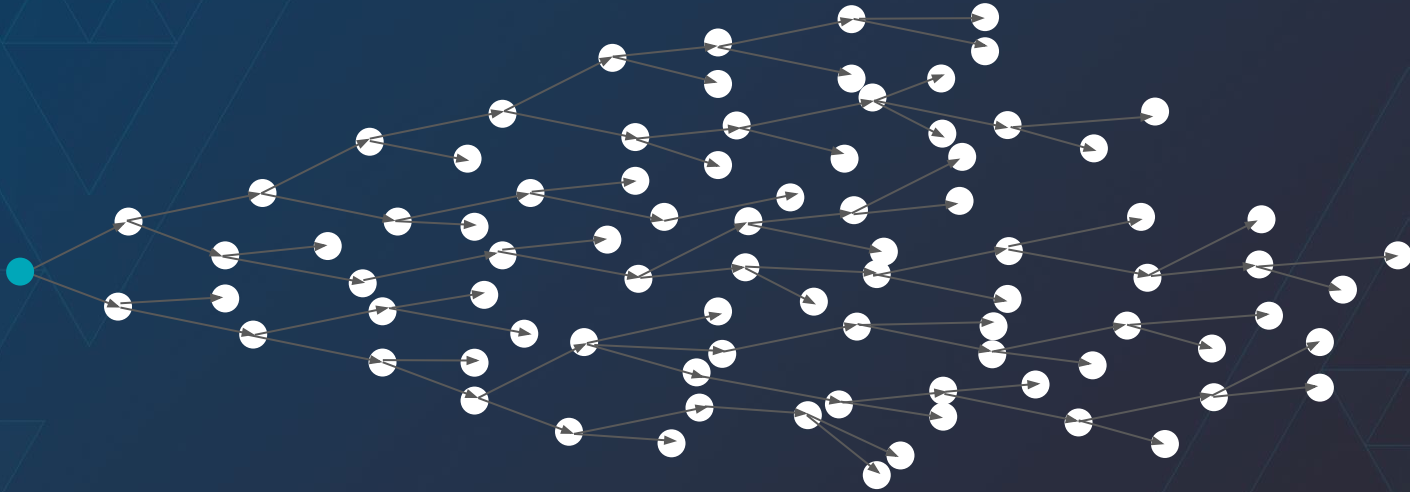
Funding Positive-Sum Goods with Divya Siddarth

<https://www.youtube.com/watch?v=iT3riInwd5c>

	<i>Rival</i>	<i>Non-Rival</i>
<i>Excludable</i>	Private	Toll
<i>Non-Excludable</i>	Commons	Public

impactful  
Yesterday, people just did things

You could try to account for all the impact (externalities) at all times...



Or you could account for the actions (work) at any time







We have

**Hypercerts** (noun) -

a specific, interoperable data layer

to account for actions

that are expected to have positive impact

Analogous to equity interest in a non-profit enterprise

Today

Today,  
people can track actions

We have  
**Hypercerts** (noun) -

a specific, interoperable data layer

to account for actions

that are expected to have positive impact

Today

Data fields:
Set of contributors
Scope of work
Time of work
Scope of impact
Time of impact
Rights

We have  
**Hypercerts** (noun) -

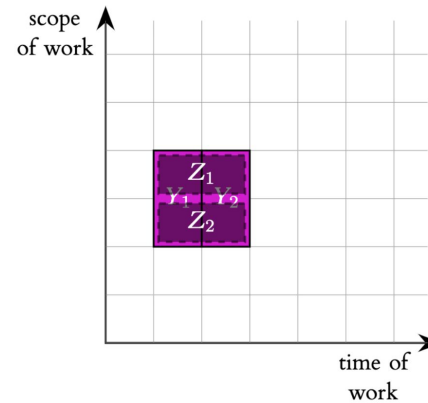
a specific, interoperable data layer

to account for actions

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Today

## Atomic merge-and-split



- Initial state:  $Y_i$  are existing hypercerts
- Owners propose alternative split  $Z_i$  of the same region
- **Required:**  $\sum Y_i = \sum Z_i$

50 Fifty Years x

# Funding the Commons

Talk June 24th, 2022

Hypercerts: on-chain primitives for impact markets

David Dalrymple, Protocol Labs

# Pilot app

HyperCert v0.1 Claim Burn Connect Wallet

Certificate name \*

Human-readable name for the certificate

Description \*

Description for the certificate

External link \*

External link with more information

Image

Drag and drop some files here, or click to select files

Work time start

dd.mm.yyyy

The moment at which work started

Work time end

dd.mm.yyyy

The moment at which work ended

Impact time start

dd.mm.yyyy

The moment at which impact started

Impact time end

dd.mm.yyyy

Impact time end

Work scopes \*

Click to start searching for work scopes

Add

The different scopes that are encapsulated by this certificate

Impact scopes

Click to start searching for impact scopes

Add

The different scopes that are encapsulated by this certificate

Rights

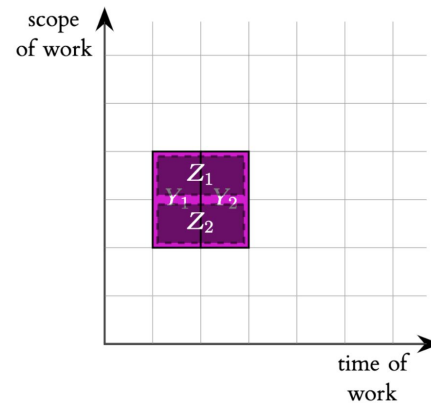
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Add

The different rights that are encapsulated by this certificate

Claim hypercert

## Atomic merge-and-split



- Initial state:  $Y_i$  are existing hypercerts
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Claim hypercert

Live on the Goerli testnet

Backend is an ERC-3525

<https://github.com/Network-Goods/hypercerts-protocol>



Today

<http://pilot.hypercerts.xyz/>

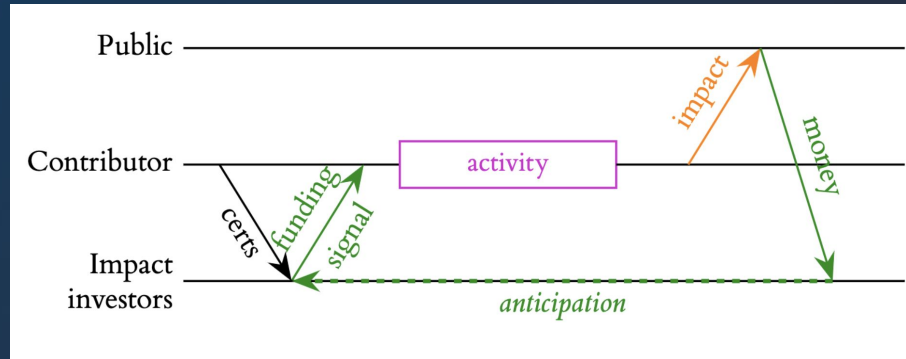


### Section 3

Tomorrow, people will coordinate in new ways

# Tomorrow, people will coordinate in new ways

We'll start with new funding programs:



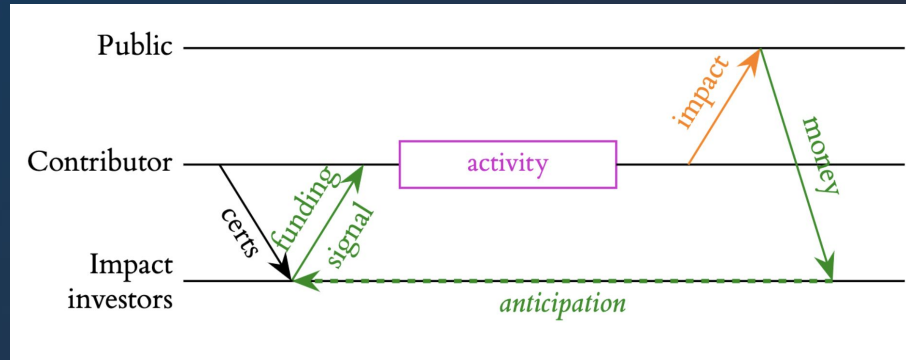
Like a bounty/prize, but...

- pledge to award the team and anyone who supported them
- in a proportion that was previously agreed upon



# Tomorrow, people will coordinate in new ways

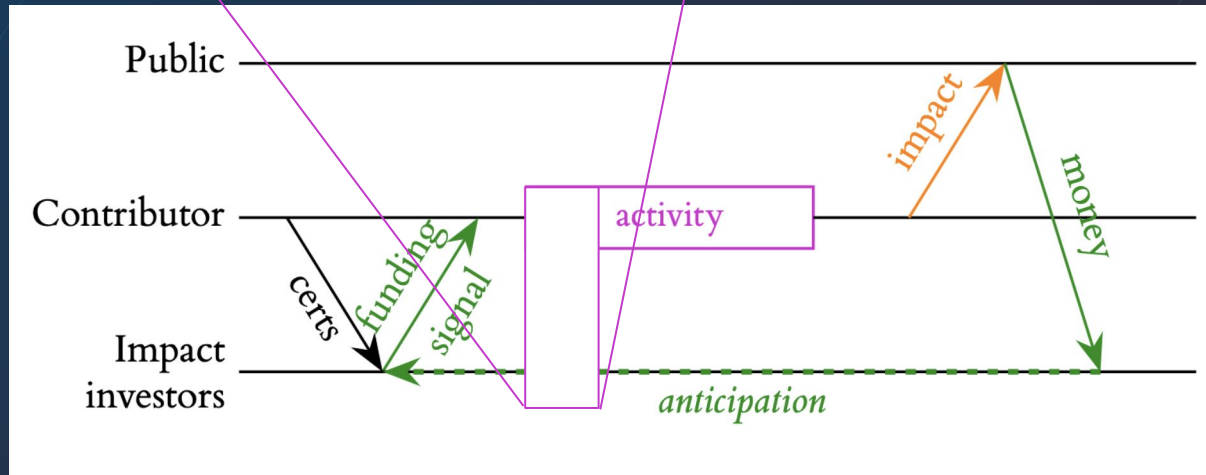
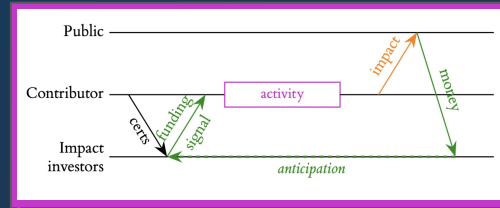
We'll start with new funding programs:



All the de-risking + causal impact of prospective funding  
All the hindsight of retrospective funding

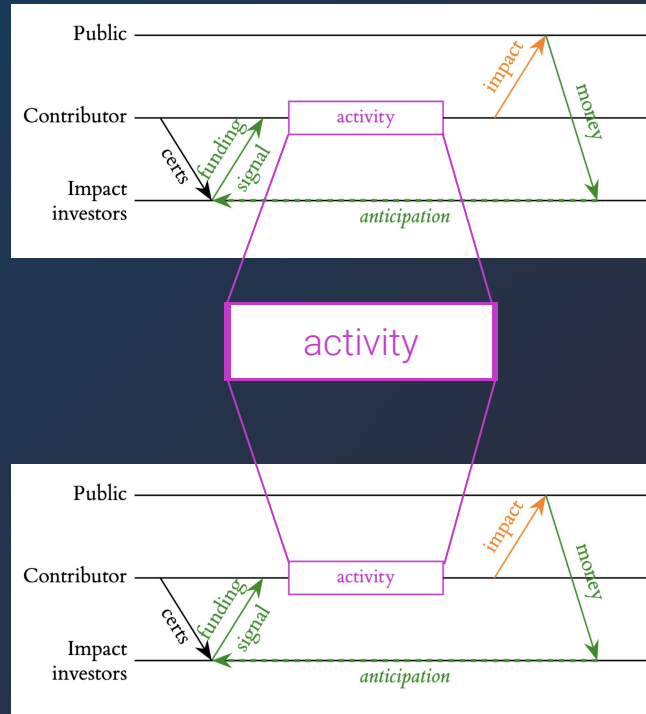
# Tomorrow, people will coordinate in new ways

## They'll cascade in time



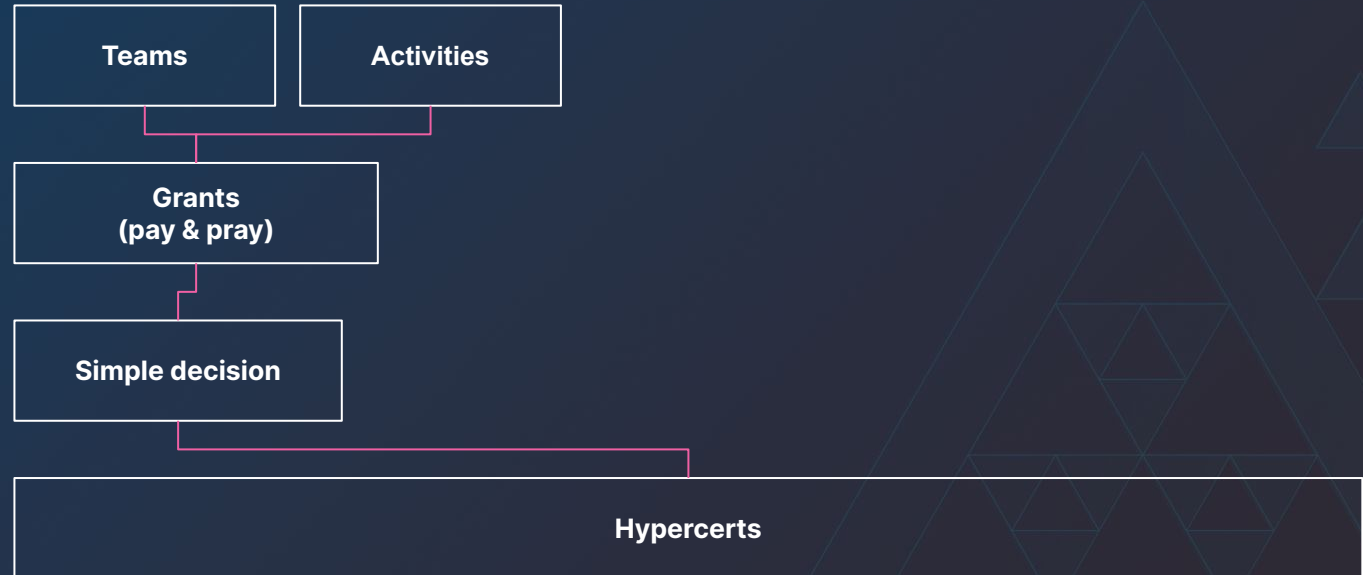
# Tomorrow, people will coordinate in new ways

They'll overlap in scope



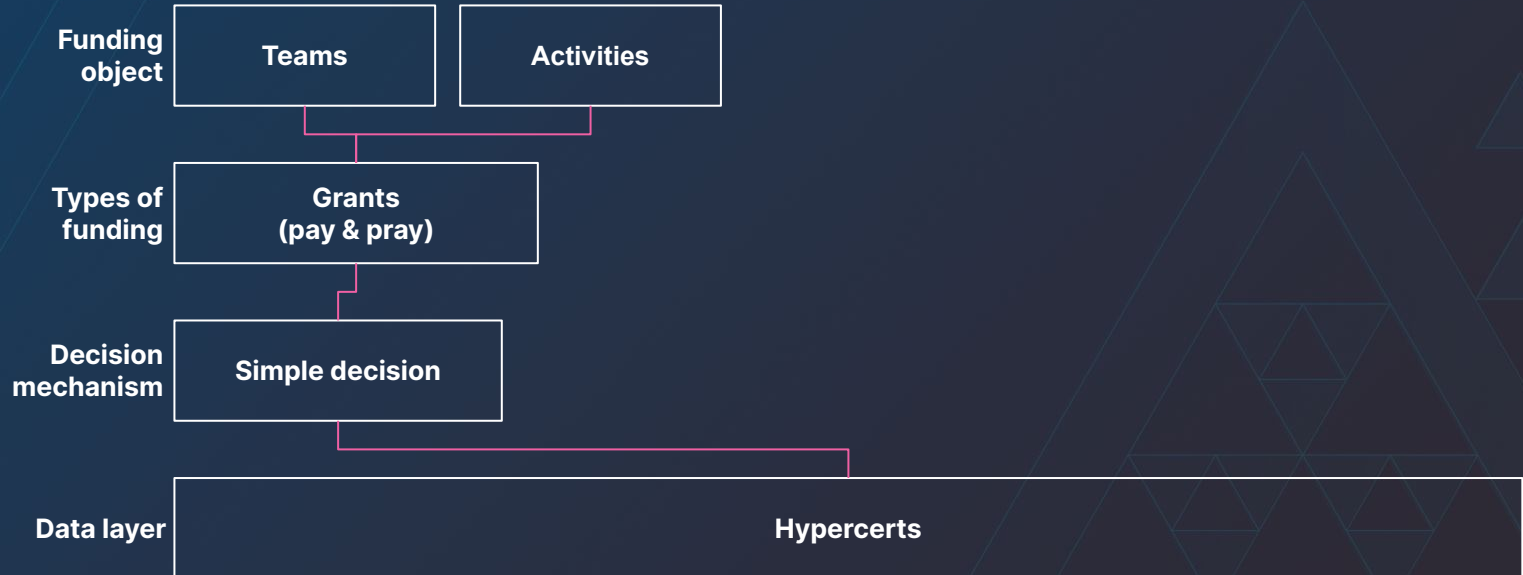
Tomorrow, people will coordinate in new ways

They'll generalize



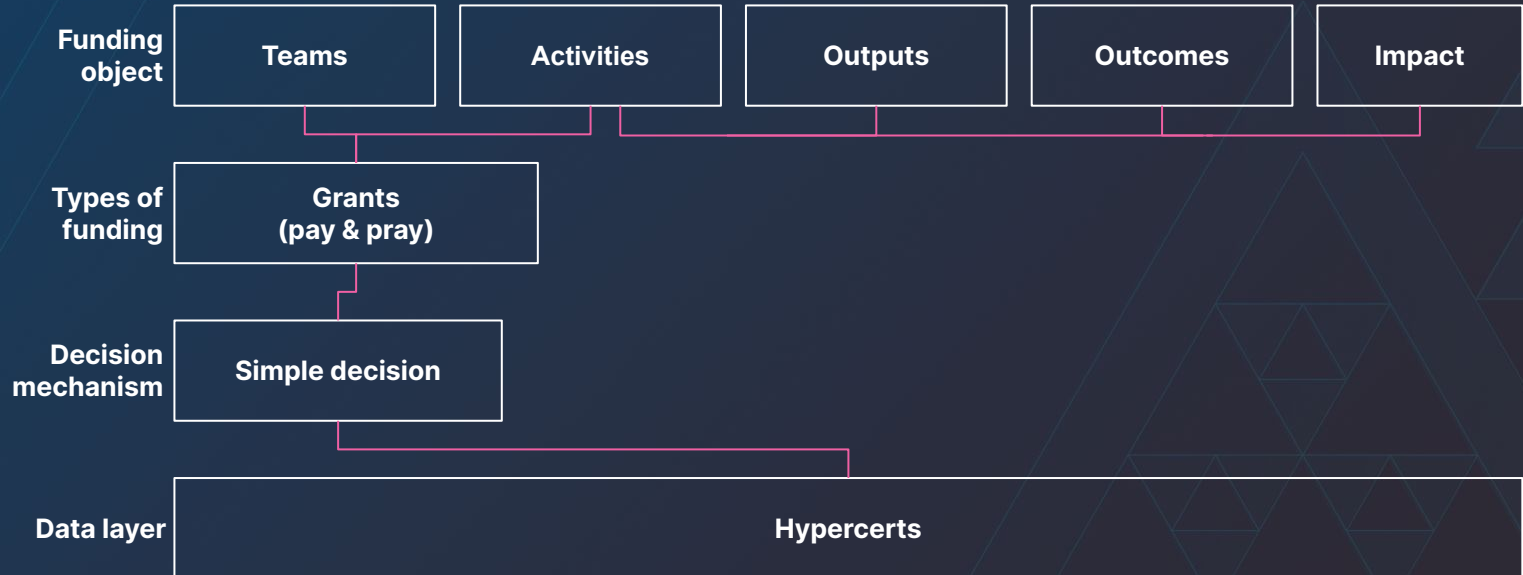
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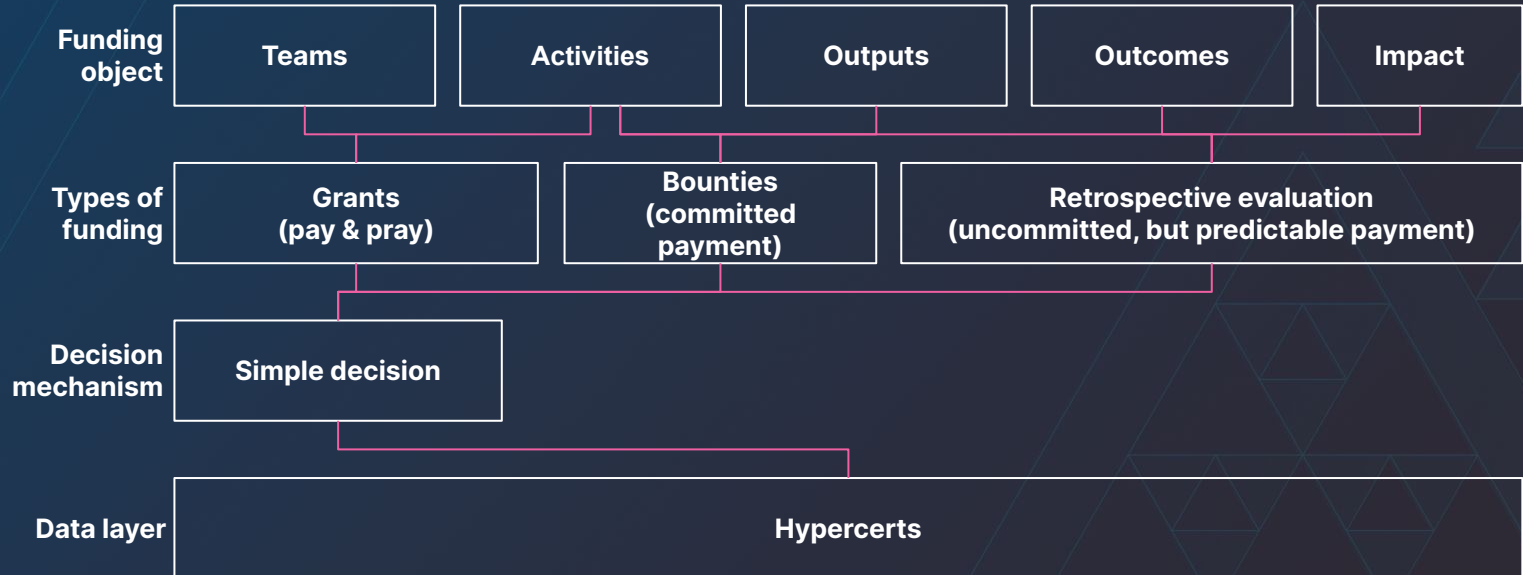
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# Tomorrow, people will coordinate in new ways

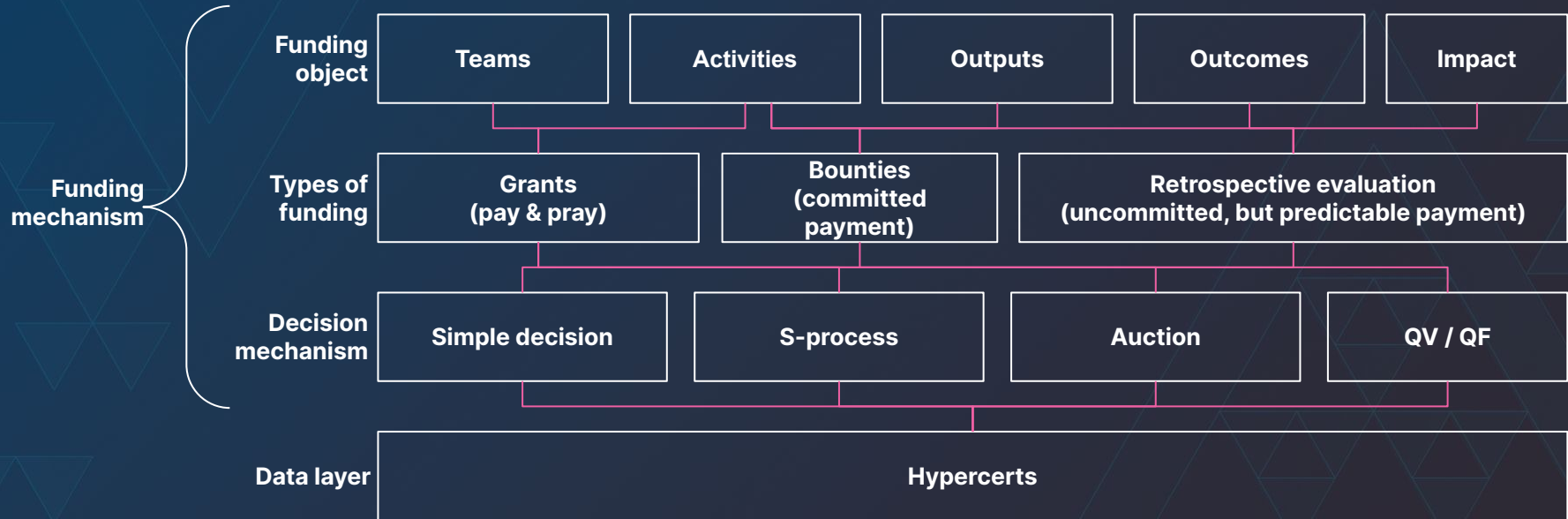
They'll generalize





Tomorrow, people will coordinate in new ways

They'll generalize









# Join us!

Evan Miyazono

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evan@protocol.ai



@emiyazono

## Funding the Commons:

Lisbon, Oct 26, Convento  
[fundingthecommons.io](https://fundingthecommons.io)  
[commons@protocol.ai](mailto:commons@protocol.ai)  
@FundingCommons

Do you want to discuss this and  
other coordination systems?

## Hypercerts:

[hypercerts.xyz](https://hypercerts.xyz)  
(tg linked)  
[hypercerts@protocol.ai](mailto:hypercerts@protocol.ai)

Do you want to help  
implement this?

Do you want to build  
front-ends for this?