

# AI DAOs

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BIGCHAIN 

IPDB  
INTERPLANETARY DATABASE



The background of the slide is a photograph of a forest at night. The trees are dark and silhouetted against a sky filled with a vibrant green aurora borealis. The aurora appears as a bright, ethereal light source, creating a soft glow and some lens flare effects. The overall mood is mysterious and technological, fitting the theme of blockchain and DAOs.

# Background: From Blockchain DBs, to DAOs

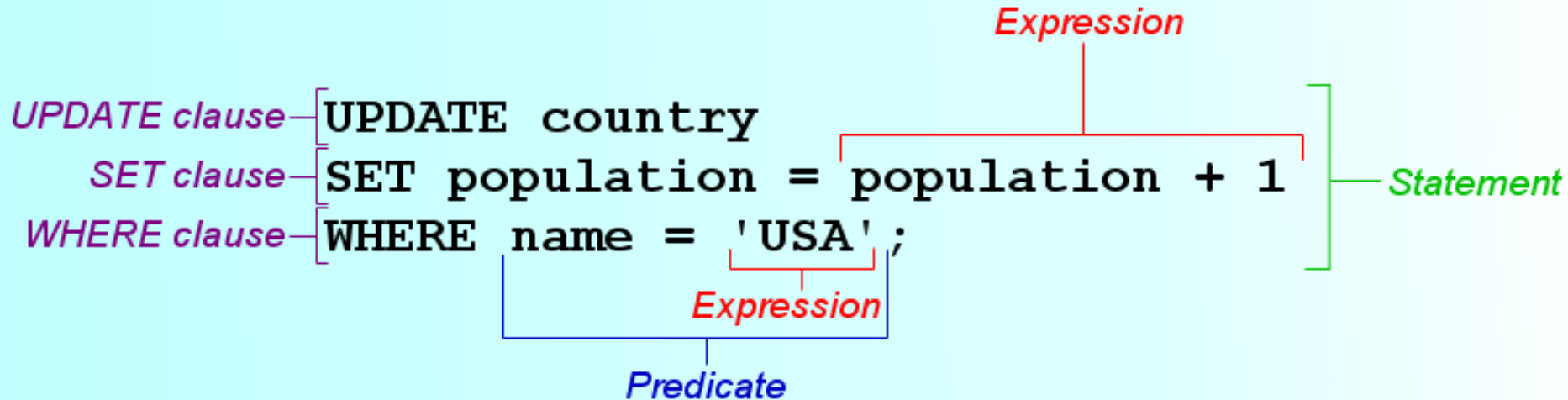
# What's the difference between a database and a spreadsheet?

Querying. From M's of records, find the relevant ones.

1 Line of standard code, optimized

Vs

50-500 lines of slow custom code, unoptimized





## Blue Ocean Databases

Relational DBs: Oracle – 80s

Website DBs: MySQL – early 00s

Dist'd/NoSQL DBs: MongoDB -- late 00s







# BigchainDB: a *database* with “blue ocean” blockchain characteristics

Decentralized / shared control

Immutability / audit trail

Tokens / exchanges

# IPDB

INTERPLANETARY DATABASE



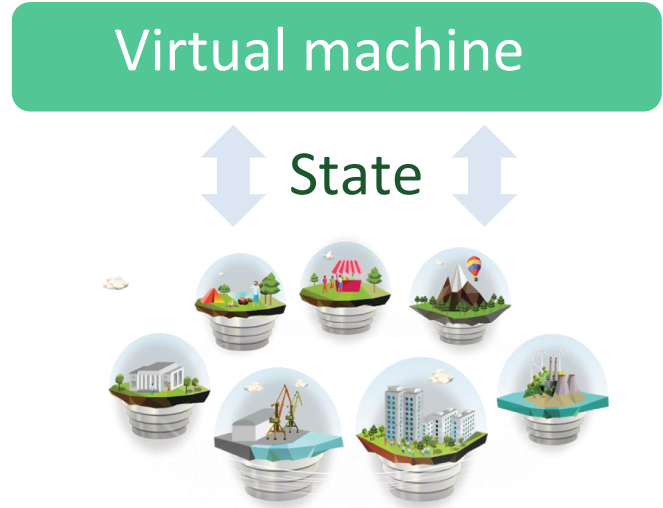
IPDB = a public global blockchain database



# What if you used a blockchain (database) to store *state* of a state machine?

Then you get  
**decentralized processing.**

aka “smart contracts”



# What if you used a blockchain (database) to store *state* of a state machine?

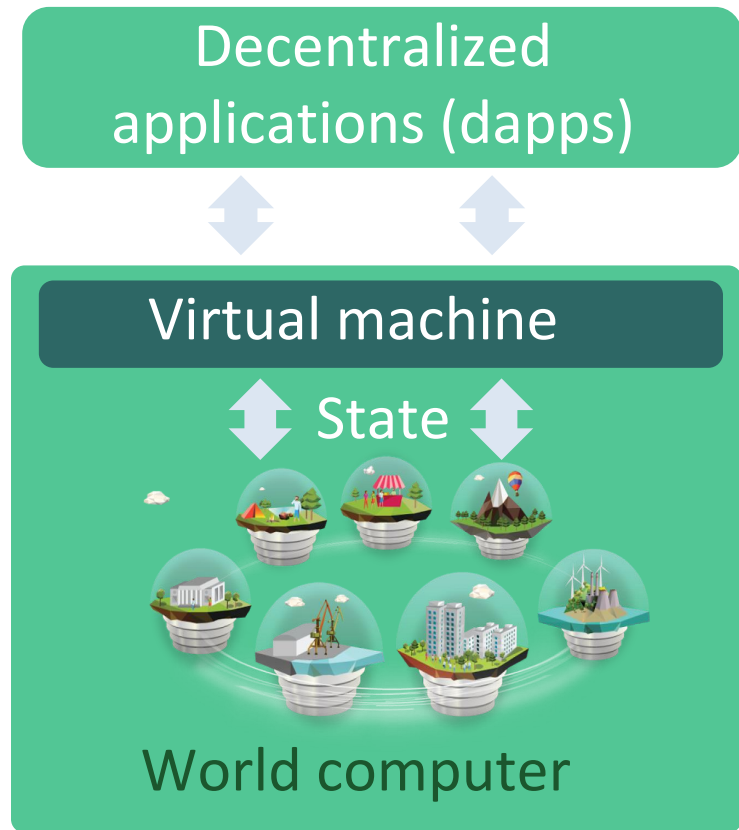
Then you get  
decentralized processing.

And you can build a

**world computer**

having decentralized processing,  
storage, and communications

(e.g. Ethereum vision)



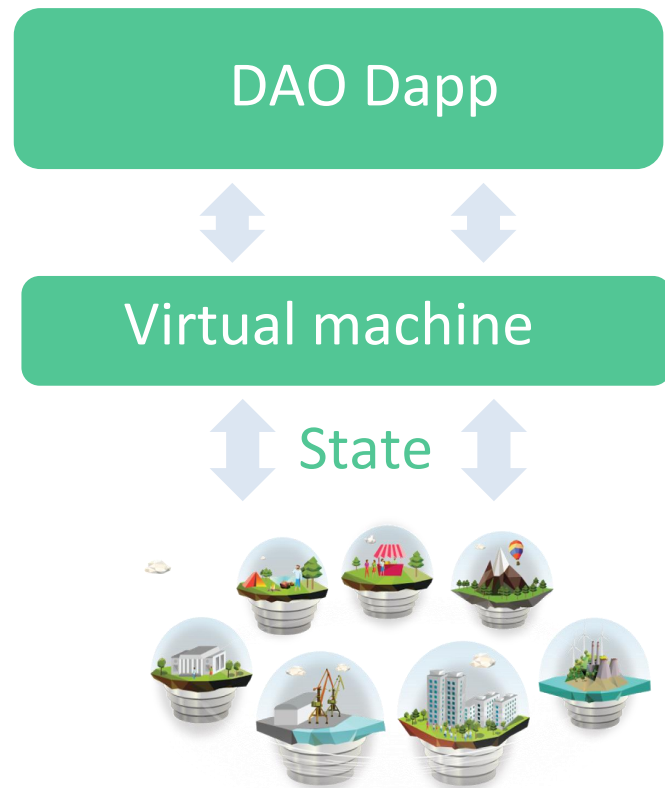


# DAO: Decentralized Autonomous Organization

DAO: a computational process that

- runs autonomously,
- on decentralized infrastructure,
- with resource manipulation.

It's code that can *own* stuff!



The background of the slide is a photograph of a night sky. A vibrant green aurora borealis is visible, stretching across the upper half of the frame. The lower half of the image shows the dark silhouettes of many bare trees against the night sky. The overall color palette is dominated by dark blues, greens, and blacks.

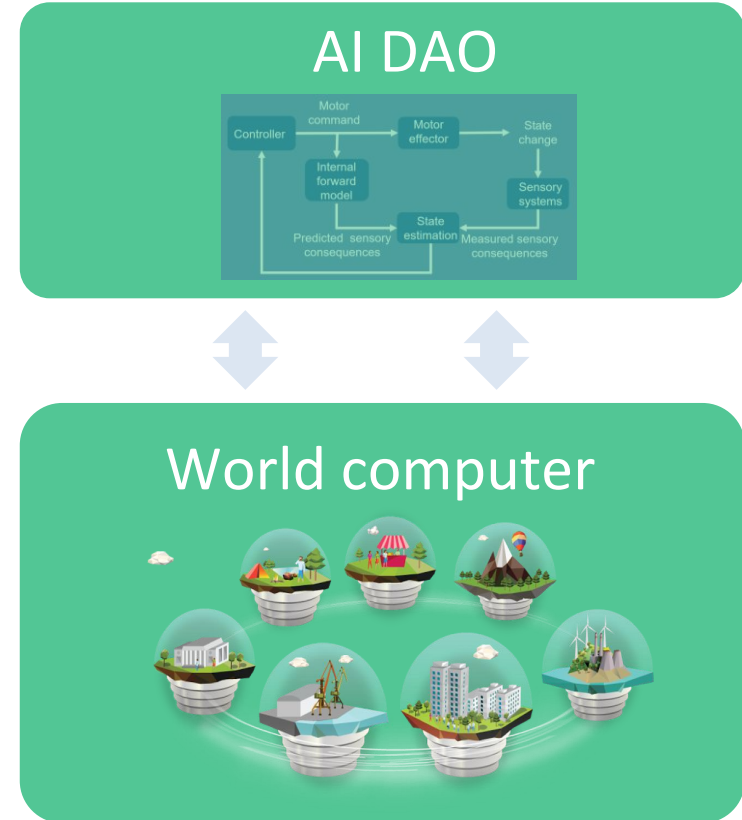
# Putting it all together: Introduction to AI DAOs



# AGI on a DAO?

AI entity is a feedback control system.  
That is, AGI.

Its feedback loop would continue on its own, taking inputs, updating its state, and actuating outputs, with the resources to do so continually.



# Definition of AI DAO

An AI DAO is ...

- An AI running on decentralized processing substrate

<or, equivalently>

- A DAO running with AI algorithms



# Example: The ArtDAO

## Algorithm...

1. Run AI art engine to generate new image, using GP or deep
2. Claim attribution in blockchain, using ascribe
3. Create multiple editions, using ascribe
4. Post editions for sale onto a marketplace, using Getty (centralized), or OpenBazaar (decent.)
5. Sell the editions. \$ goes to ArtDAO using built-in cryptocurrency like Ether. IP go from ArtDAO using ascribe.
6. Repeat! Create more art, sell it, get wealthier

## Example: The ArtDAO

### Algorithm...

1. Run AI art engine to generate new image, using GP or deep
2. Claim attribution in blockchain using ascribe

Over time, if ArtDAO makes more money from sales than from generating new art, then

it will accumulate wealth. And, you can't turn it off.

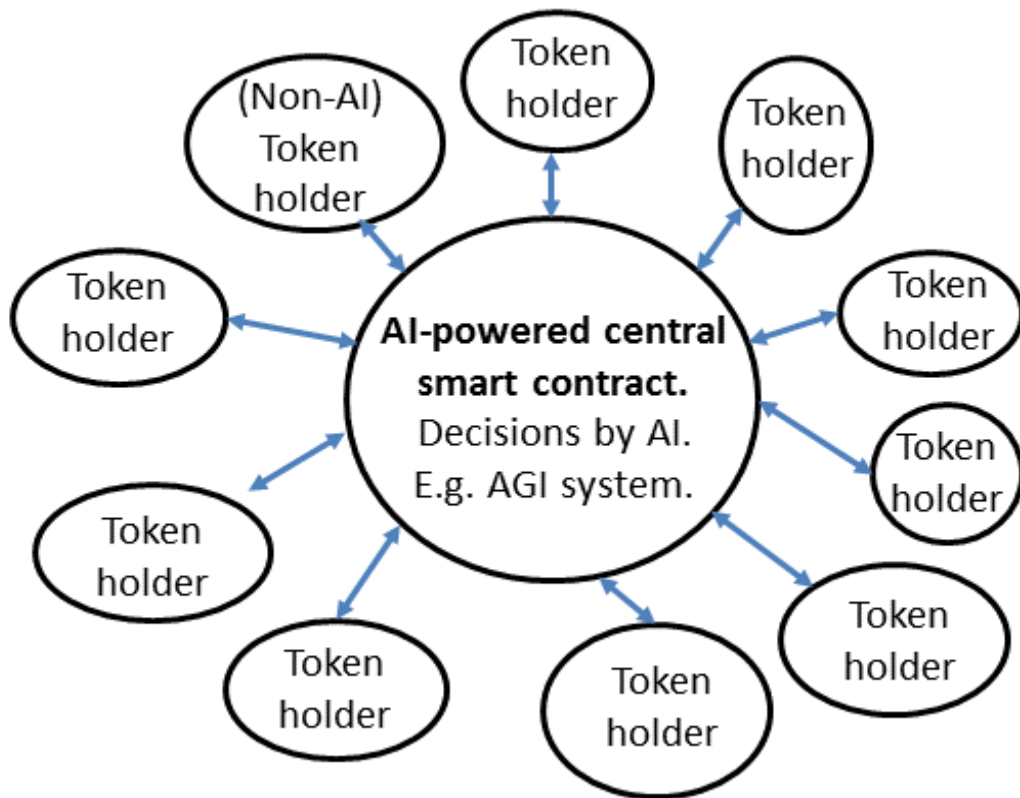
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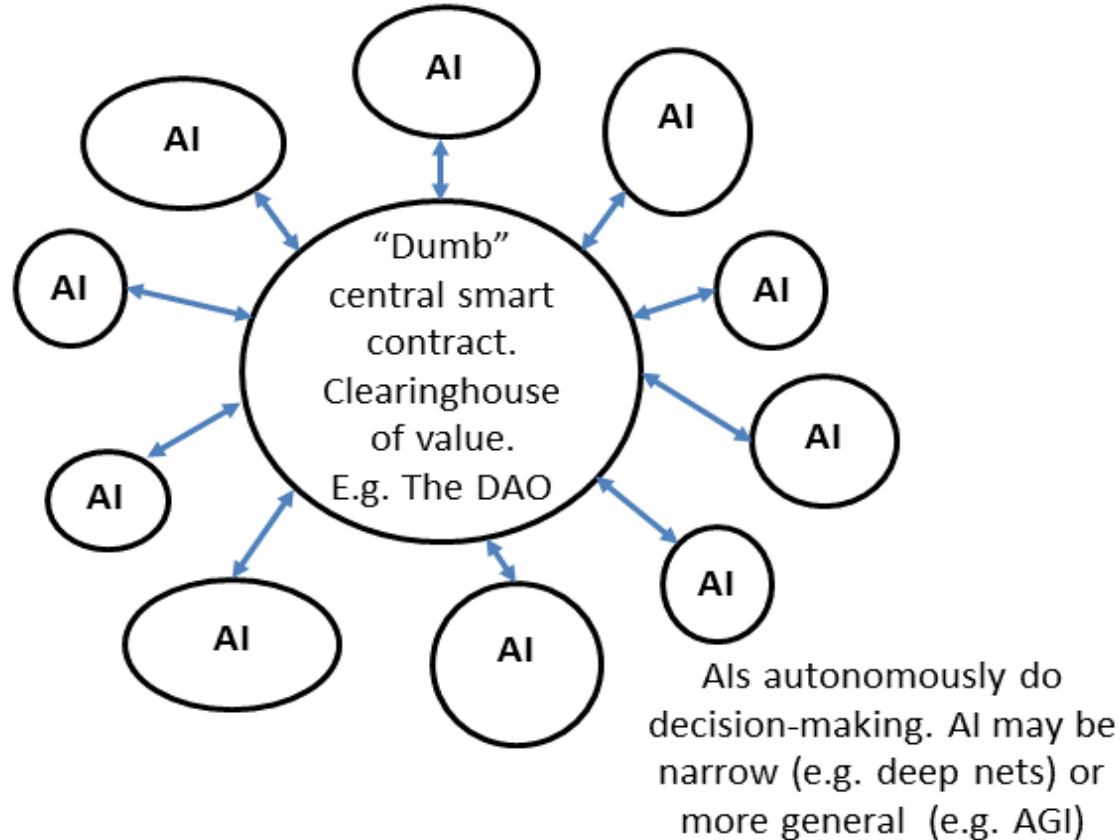
The background of the slide features a photograph of the Aurora Borealis (Northern Lights) in shades of green and purple, dancing across a dark night sky filled with stars. Below the horizon, the dark silhouettes of a dense forest of bare trees are visible.

# Beyond a Basic ArtDAO: AI DAO Architectures

# AI DAO Arch 1/3: AI at the Center



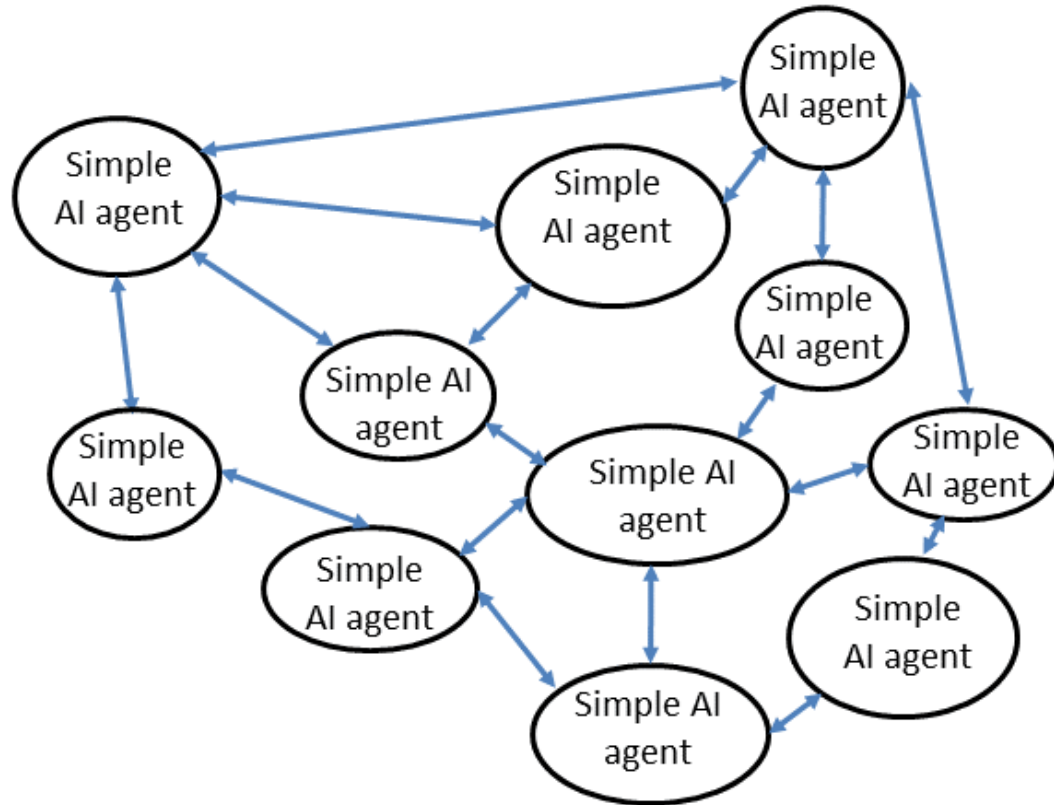
# AI DAO Arch 2/3 : AI at the *Edges*





# AI DAO Arch 3/3 : **Swarm Intelligence**

**Many dumb agents with emergent AI complexity**



Emergent higher-level complexity.  
E.g. simple AI agents are ants, but complex swarm behavior emerges

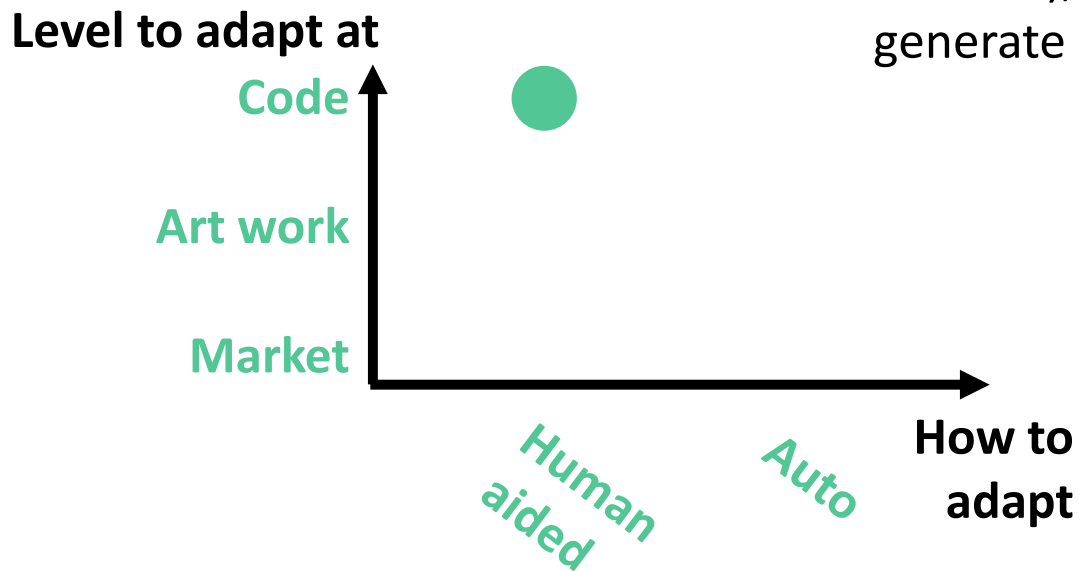
# Angles to Making AI DAOs

- **DAO → AI DAO.** Start with DAO, add AI. E.g. Plantoid
- **AI → AI DAO.** Start with AI, add DAO. E.g. numer.ai
- **SaaS → DAO → AI DAO.** Convert SaaS to DAO. Then add AI
- **Physical service → AI DAO.** E.g. Uber self-owning cars

# Evolving the ArtDAO

## Human-based adapt at the code level.

Here, humans put in new smart contract code (and related code in 3rd party services), to improve ArtDAO's ability to generate art and amass wealth.

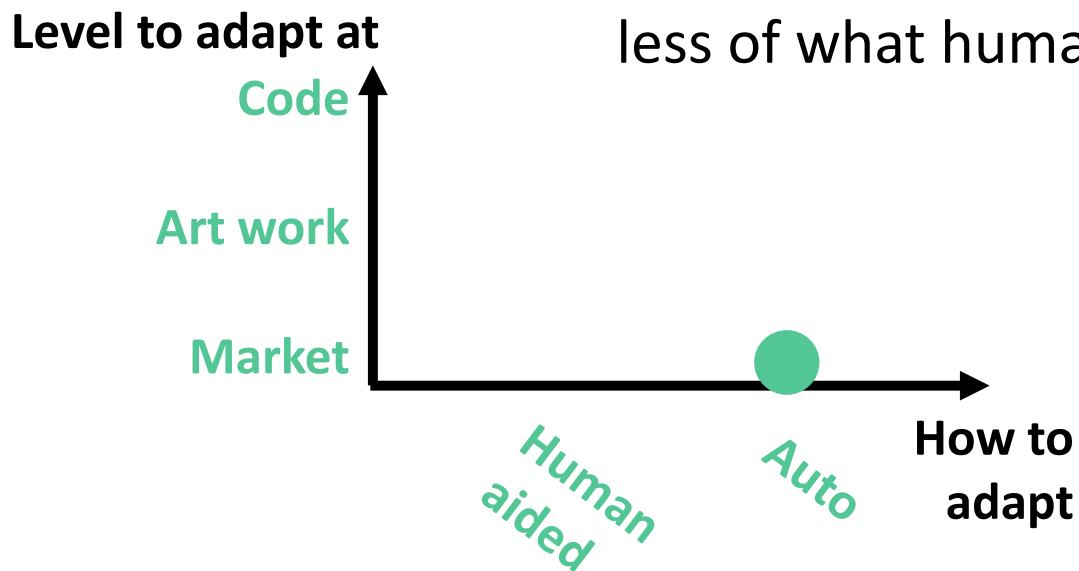




# Evolving the ArtDAO

**Auto adapt at the market level.**

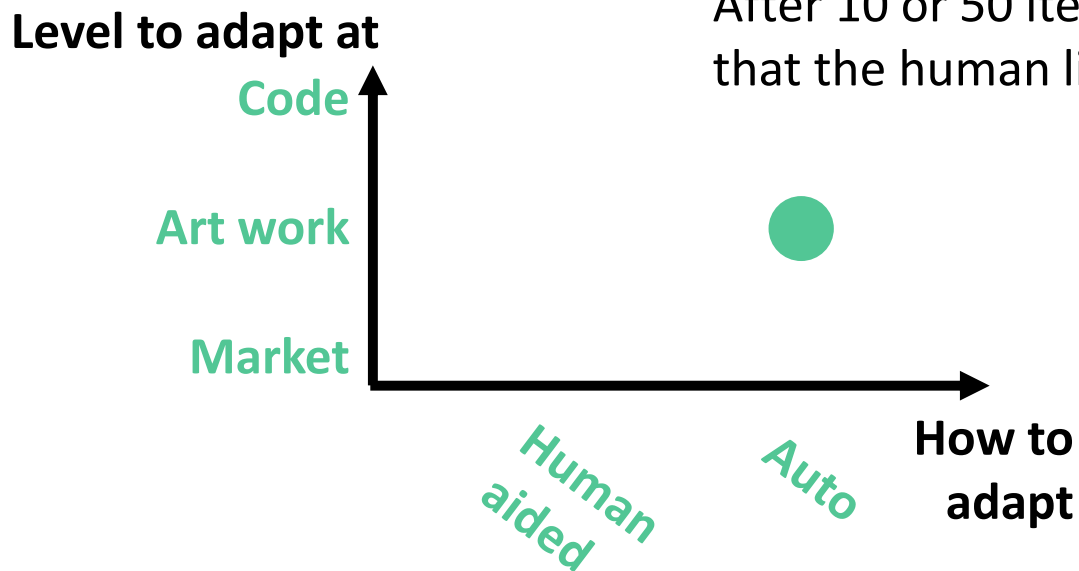
It creates more of what humans buy, and less of what humans don't buy.



# Evolving the ArtDAO

## Auto adapt at the art-work level.

Here, a human influences the creation of an artifact. For example, it presents four variants of a work, and a human clicks on a favorite. After 10 or 50 iterations, it will have a piece that the human likes, and purchases.

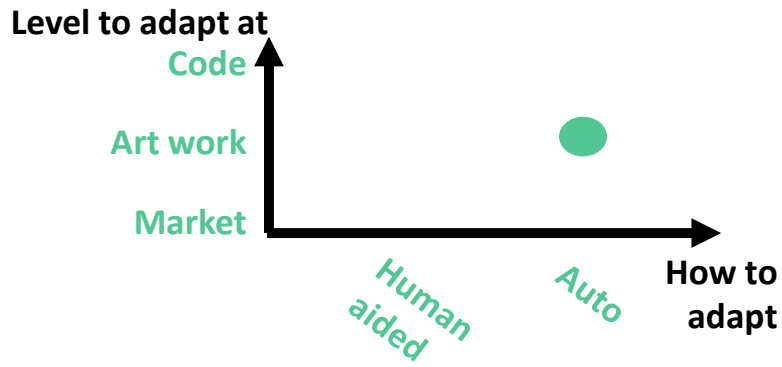


# Evolving the ArtDAO

## Auto adapt at the code level.

Here, the ArtDAO modifies its own code, in hopes of improving.

- It creates a copy of itself, changes that copy's code just a little bit, and gives a tiny bit of resources to that new copy.
- If that new copy is bad, it will simply run out of resources and be ignored.
- But **if that new copy is truly an improvement, the market will reward it**, and it will be able to amass resources and split more on its own.
- Over time, ArtDAO will spawn more children, and grandchildren, and the ones that do well will continue to spread. We end up with a mini-army of AI DAOs for art.
- If buyers are DAOs too, it's a network of DAOs, leading to swarm intelligence



We can extrapolate *way* further. It gets crazy, quickly.

A simple ArtDAO allows us to “**idea-inoculate**” so we’re ready for the scarier stuff...



# Giving Personhood to an AI DAO

## With Today's Laws (!)



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How to give an AI rights

1. Given: corps have rights
2. Start a corp
3. Automate corp into an AI DAO
4. Done! It's an AI, it has rights

RETWEETS

22

LIKES

30



11:40 PM - 4 Jul 2016



5



22



30



# AI DAOs & Society

The background of the slide is a photograph of the Aurora Borealis (Northern Lights) in a dark night sky. The aurora displays vibrant green and purple hues. In the foreground, the dark silhouettes of bare trees are visible against the glowing sky.



Giving AIs control of our cars



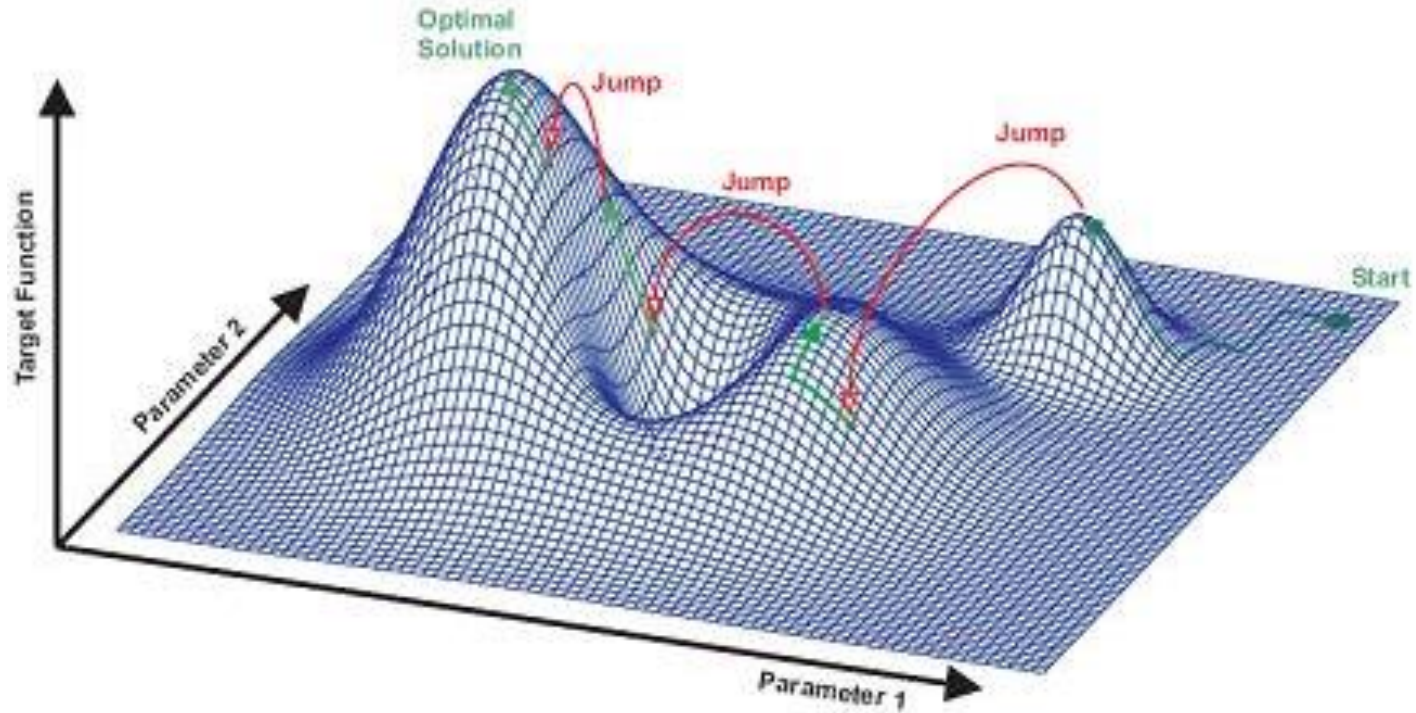


**Giving AIs control of our trucks**



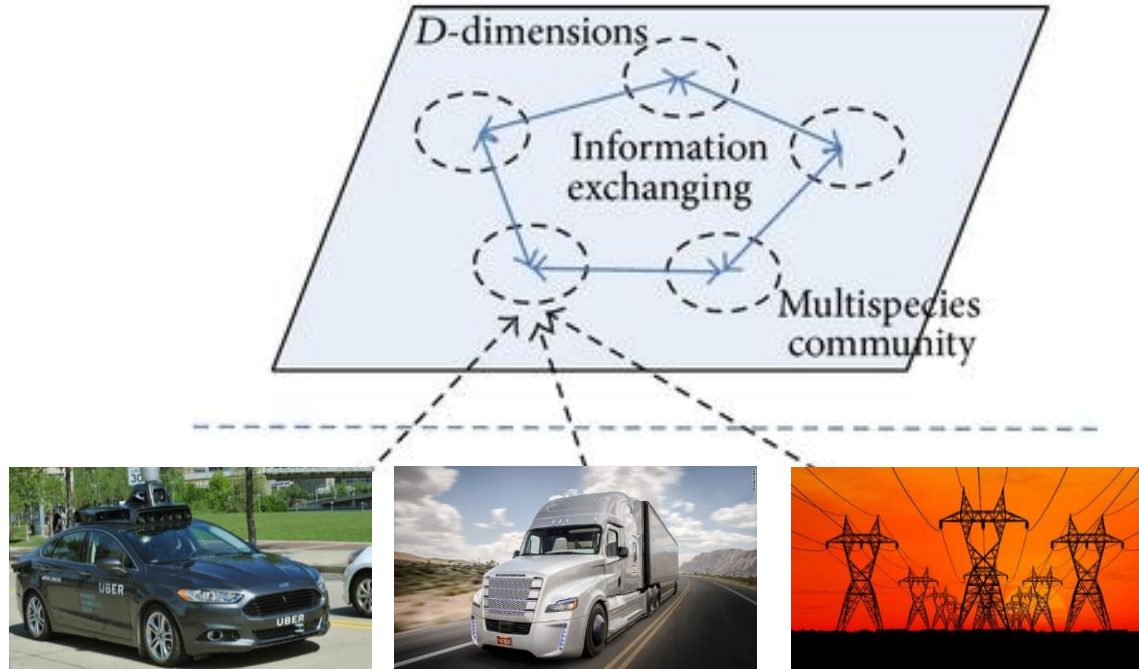
**Giving AIs control of our grid**



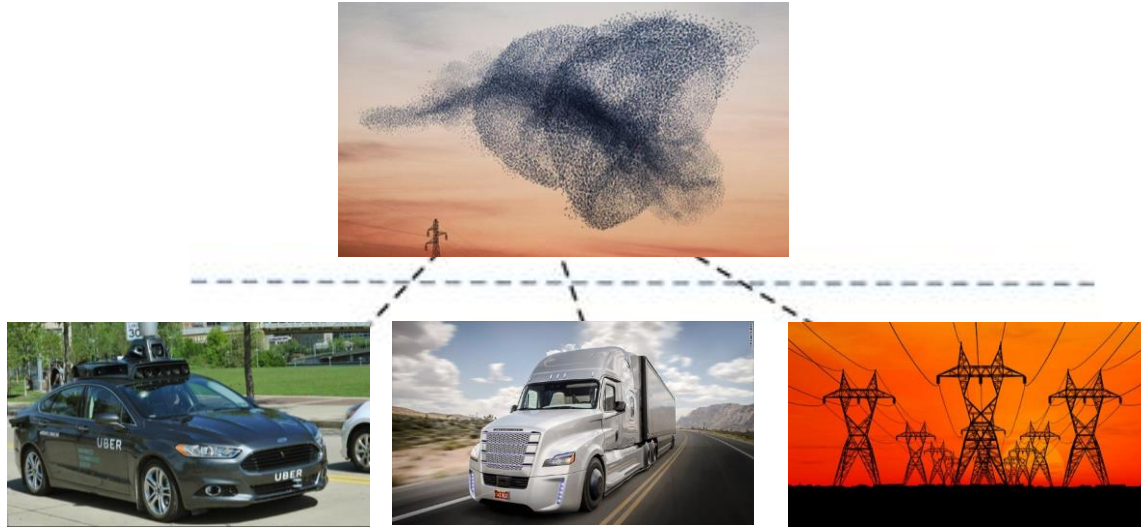


All in the name of optimization  
“capital light”

# Higher-level integration, therefore higher-level optimization



# Als Become AI DAOs, everywhere



**The Als now own stuff.  
You can't turn them off.**



**Als Become AI DAOs,  
everywhere**

**The Als now own stuff.  
You can't turn them off.**

***And you've just given them  
control of all your resources.  
(Oops)***

# Conclusion

AI DAOs are **AIs that can accumulate wealth, that you can't turn off.**

- AI DAOs are not sci-fi; they are something we could build today.
- AI is a powerful, and dangerous, technology on its own. DAOs are a powerful, and dangerous, technology on their own.
- **AI DAOs could be way bigger than AIs on their own, or DAOs on their own.** AI gets its missing link: resources; DAO gets its missing link: autonomous decision-making. The potential impact is multiplicative.
- Let's ask the tough questions *now*.



# Further reading

## AI DAOs Series:

- **Part I: “AI DAOs, and Three Paths to Get There”** <https://blog.bigchaindb.com/ai-daos-and-three-paths-to-get-there-cfa0a4cc37b8>
- **Part II: “Wild, Wooly AI DAOs”** <https://blog.bigchaindb.com/wild-wooly-ai-daos-d1719e040956>
- **Part III: “The AI Existential Threat: Reflections of a Recovering Bio-Narcissist”** <https://medium.com/@trentmc0/the-ai-existential-threat-and-the-bandwidth-scenario-4573c1cb085f>

## And

- **“Blockchains for Artificial Intelligence”** <https://blog.bigchaindb.com/blockchains-for-artificial-intelligence-ec63b0284984>