The Governed Blockchain

Decentralized - Limassol

2nd November 2017

Ian Grigg

- Financial cryptographer
- Inventor of Ricardian contracts
- co-Inventor of triple entry accounting
- Identity
- “EOS An Introduction”

block.one

- Cayman Islands corporation
- Investors from finance & blockchain
- Fully funded
- Building the EOS.IO software
- Coin distribution on as we speak
- All details: http://EOS.IO/

I am contributing in EOS.IO, as are many others.

This is an interesting project - code, design, user needs.

I expect it to add value and benefit globally.

Crypto Ahead

But - Cryptocurrencies are dangerous places.

Not advocating an investment - Caveat Emptor

I. Let’s build a blockchain

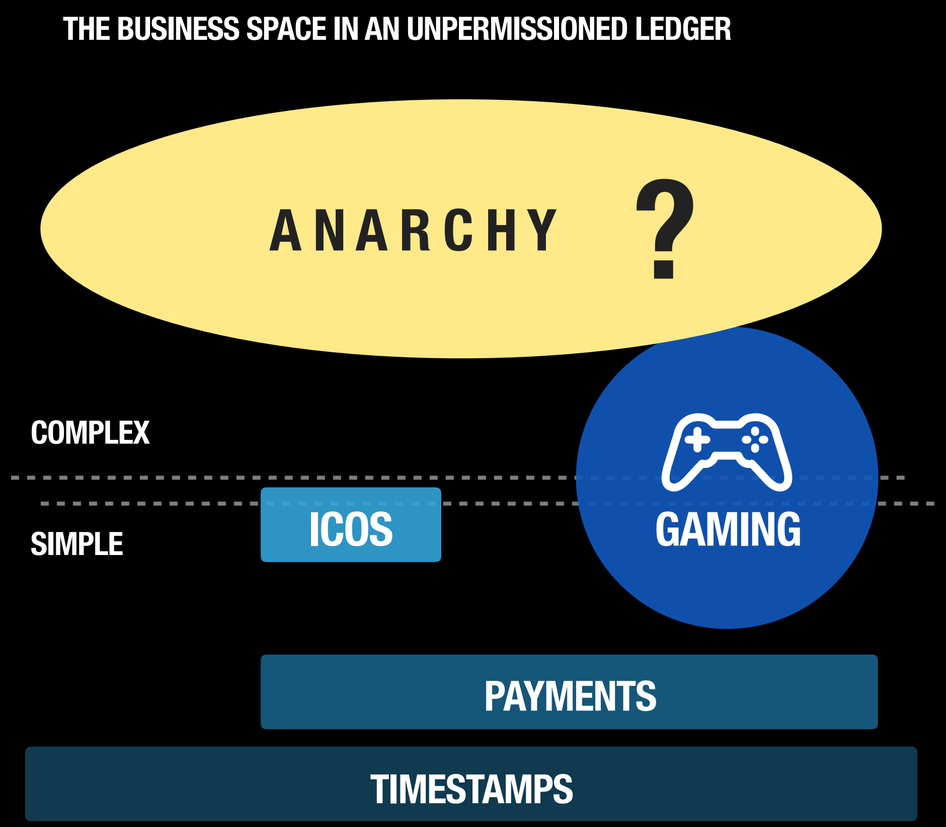
A blockchain for everybody

Establish from baseline or first principles

Who is everybody? What do they need? Can we provide it?

But 1st, review options

UNpermissioned Blockchains



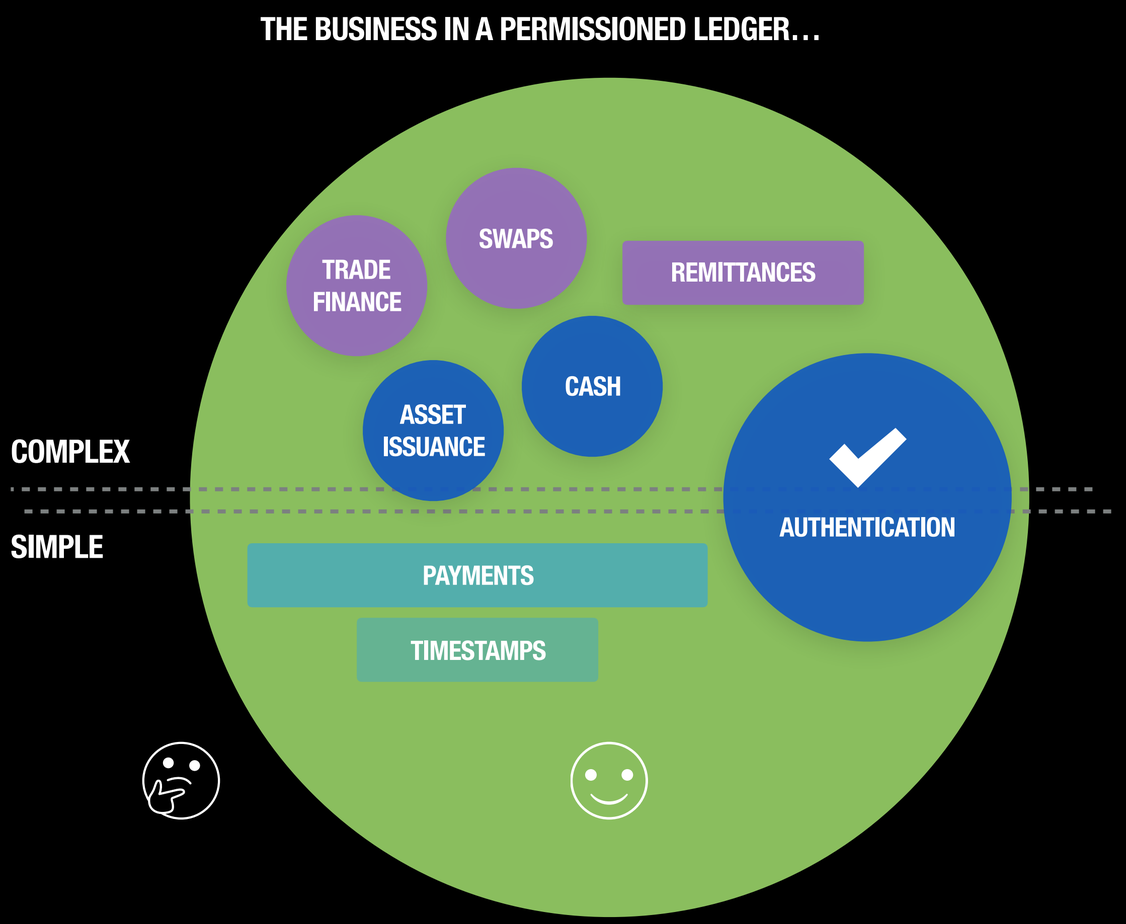
- (Swanson 2015) - two varieties
- Bitcoin & Ethereum ⇒ unpermissioned
- Simple things automated within the chain
- Complex things - left to users:

  smart contracts, external logic,

  Multisig, zkSNARKS, rings, etc.

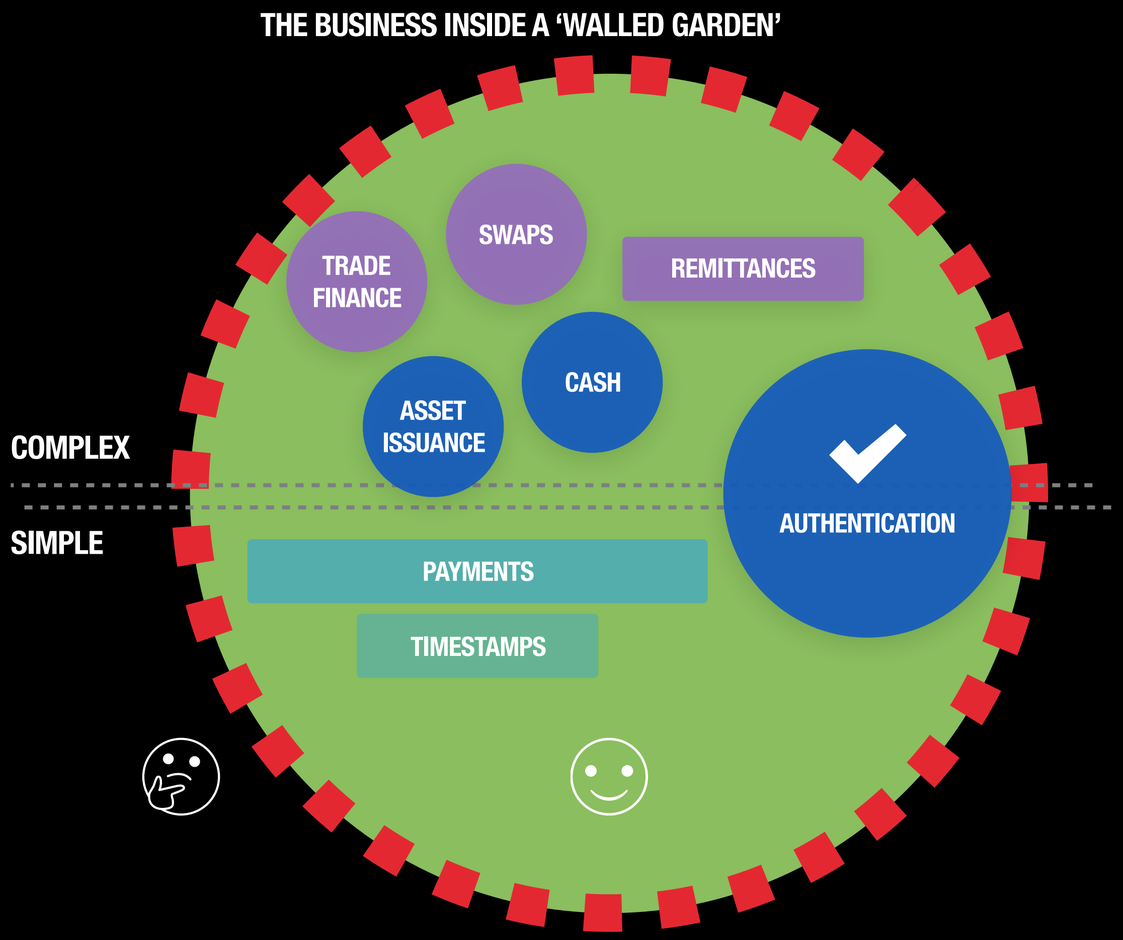
- Wild west? Anarchy?

Permissioned ledgers



- Trade is more complex
  loans, swaps, trade finance
- Exposure ⇒ risk ⇒ protection

Permissioned ledgers



- Trade is more complex
  loans, swaps, trade finance
- Exposure ⇒ risk ⇒ protection
- Cannot protect with free entry
- “Walled Garden” for insiders
  1. He who permits, extracts
  2. The cost rises,
  3. Small players excluded

Between Anarchy and the Leviathan

WE AGREE:

Automate below…

BUT:

above?

Context: What is a small business to do?

II. What does Business do?

GlobalMegaCorp:

Don’t Change

HNWI:

HODL

II. What does Business do?

For The Rest Of Us:

Trade!

Complexity…

If trade were simple,

It would be automated!

We would be competed out...

Complexity ⇒ errors

Unpredictability

⇒ need for care, and

⇒ profits :-)

Errors

Errors are mostly unpredictable ⇒

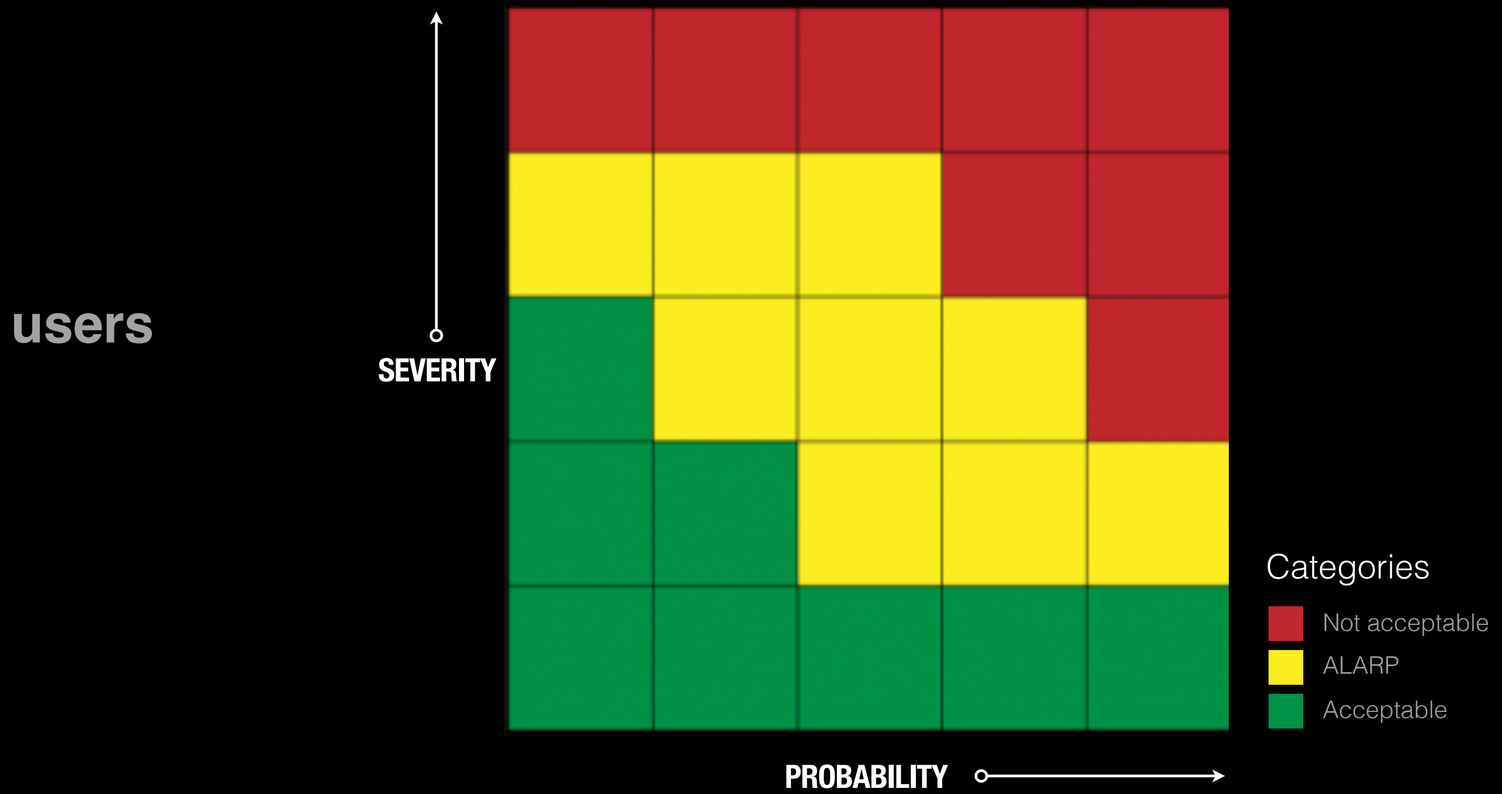
Business learns to live with risk

What does IT do with risk?

- Thefts of value - trading balances, capital
- Breaches of contract
- Extortions,
- Loss of customer data,
- Loss of faith, loss of reputation
- Fat fingers
- Regulation

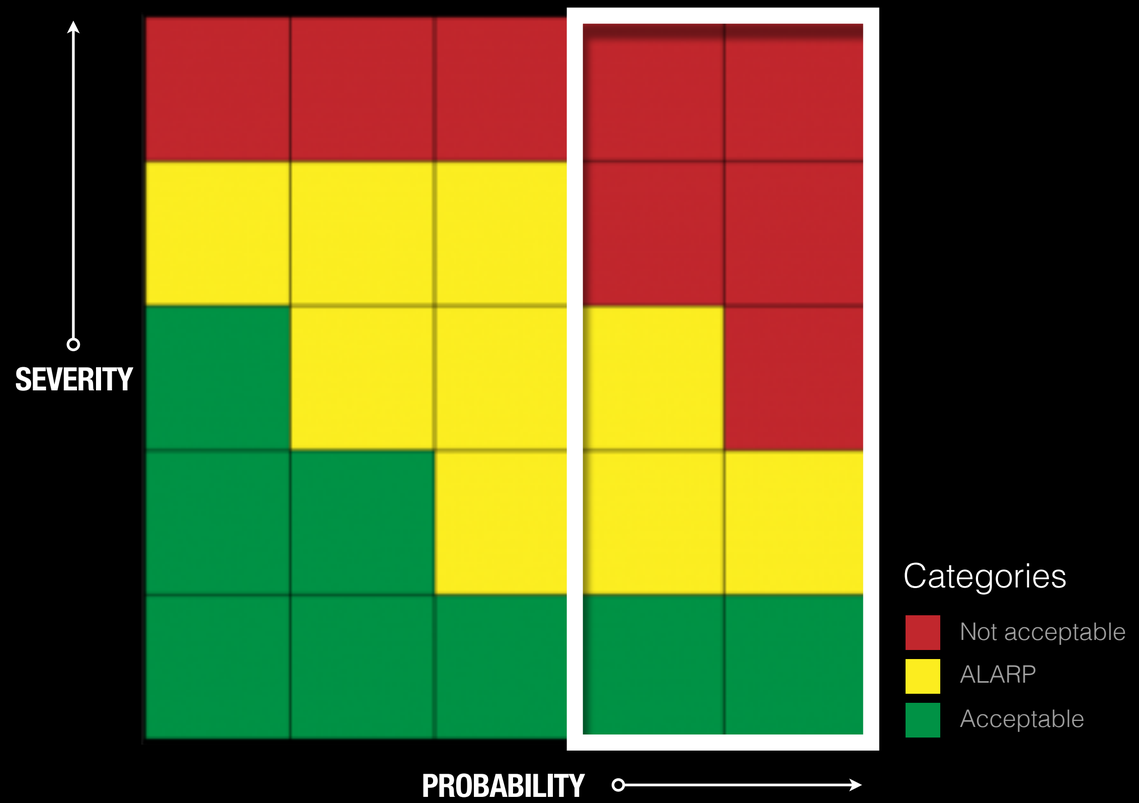
IT Bias

1.Against users



IT Bias

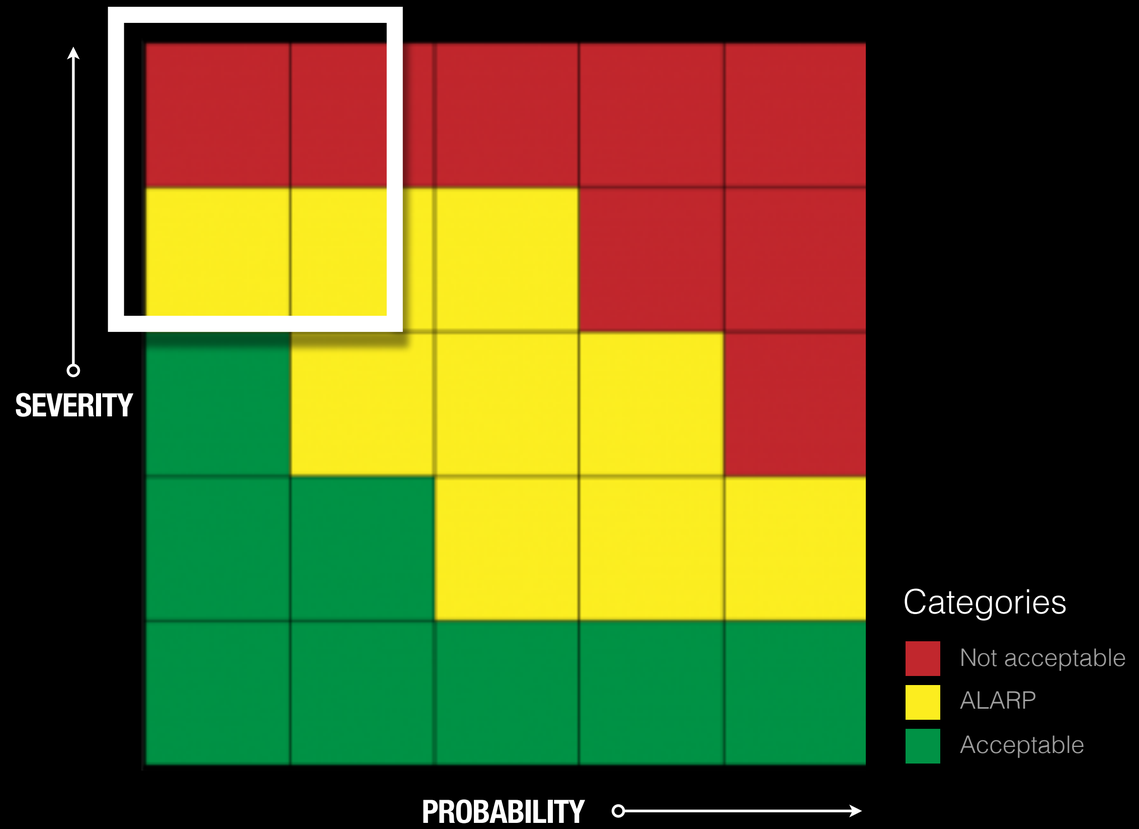
1. Against users
2. Knowledge



IT Bias

1. Against users
2. Knowledge
3. Can’t see?

Won’t Happen!



2011
500k stolen Mt.Gox

2013
bug hard fork

2013
179k ‘Silk Road’

2014
650k stolen Mt.Gox

2016
I - 3.6mm ETH The DAO

2016
II - Ethereum forks

2017
I - Bitcoin forks

2017
II - China forks...

The entrepreneur invests:

- Programmers, biz-dev, legal & accounting, web
- Cash - $1mm and up?
- Time - 3m to 2 years

Question - why would entrepreneur invest if …

Black Swans ?

Proposal:

- the blockchain for business is
- the blockchain that solves the Black Swan

Choice is Stark

Theft

Fat fingers

Privacy

Disputes

Forks

Sybils, trolls, spam

Borked smart contracts

Anarchy - but risk of loss

IN REAL LIFE, WE USE TRUST

Walled garden **Trust outcompetes** **But excludes!**

TRUST ! ?

III. What is this thing called…

Trust is expensive - relationship, feedback

- Based on relationship <==> feedback
- Too expensive for one trade
- Trust ⇐ many many trades

Game theory:

- Multiple rounds, no end in sight
- Shared profit from each round
- Punishments outside the game

NOT JUST TODAY'S TRADE, BUT EVERY TRADE!

Negotiation theory:

- *(wants)* win-win
- *(gets)* win-lose

Game theory:

- *(wants)* net-positive game
- *(gets)* Prisoner's Dilemma

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Game theory:

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	Stag	Hare
Stag	*a, a*	*c, b*
Hare	*b, c*	*d, d*

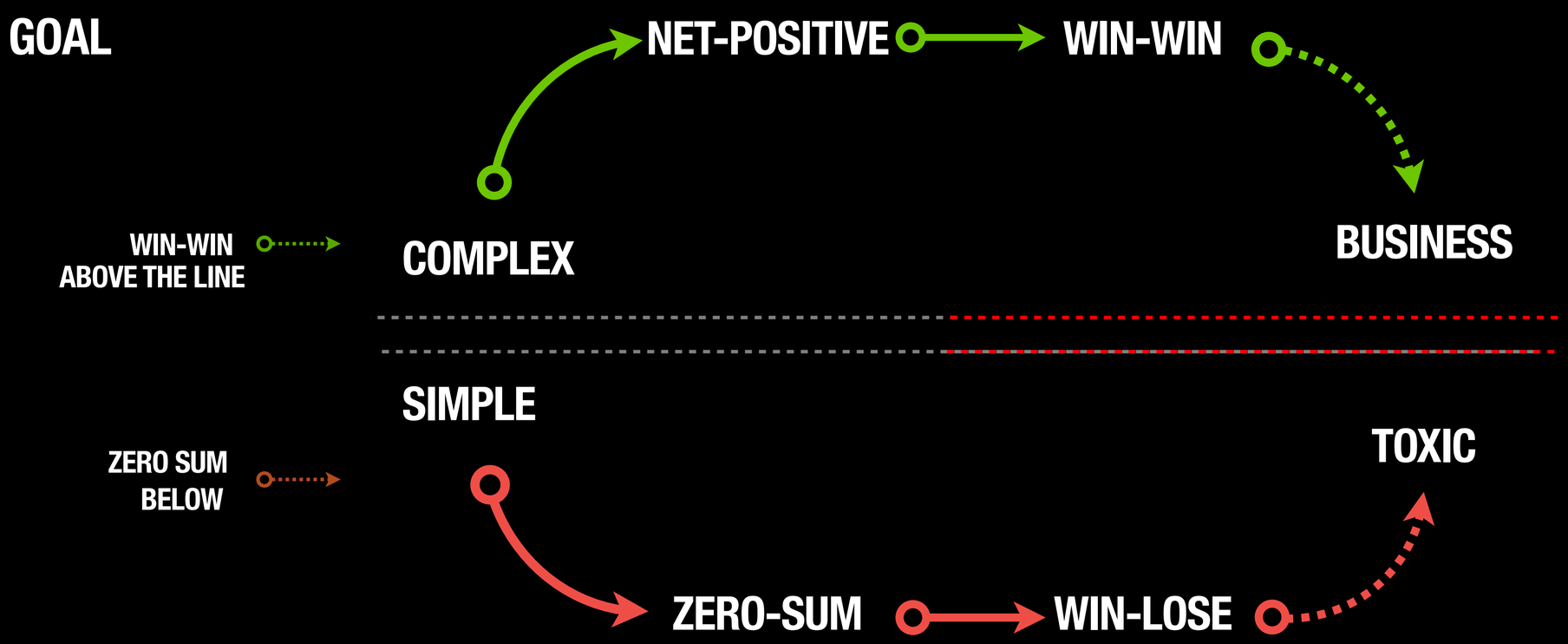
Fig. 1: Generic symmetric stag hunt

	Stag	Hare
Stag	2, 2	0, 1
Hare	1, 0	1, 1

Fig. 2: Stag hunt example

Goal: THE BLOCKCHAIN WITH WIN-WIN

Let’s Win above the line



CONTENDERS?

Cultural opposition:

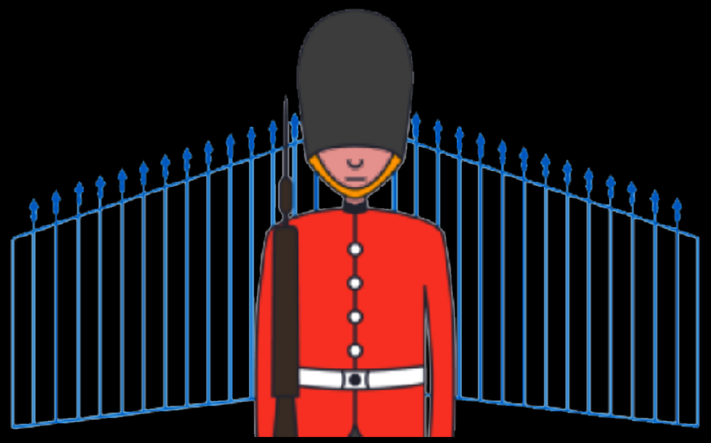
- Belief in the zero-sum game
- Suggests we export the win-lose to the business space - BAD.
- The DApps are all zero-sum: currency, ICOs, pumps&dumps, gaming, books
  - Get ahead in an ICO? *Fine, run a DDOS.*
  - See a fat contract? *Hack it.*
  - Don’t like an opinion? *Call in a SWAT team.*

ENTREPRENEUR WANTS MUTUAL PROFIT NOT EXTRACTION, PARTNERS NOT TOXICS.

Toxic customers

The equation of win-win:

1. A repeated round, no end in sight
2. Remember who we are dealing with
3. Rules of the game
4. A way to trade (the blockchain thing, the smart contracts)
5. A way to hold an aggressor to account...



A wall around the garden

A gate and a gate keeper

(Fees, fees, more fees)

A set of rules

A method for applying the rules

Consequences - skin in the game

A wall around the garden

A gate and a gate keeper

Many rounds, no end

Who we are dealing with

Tear down the wall

We don’t need it.

Proposal :

- A way of knowing who we’re dealing with.
- Identity… (beyond scope of today)

(IDENTITY IS YOUR PERSONAL WALL)

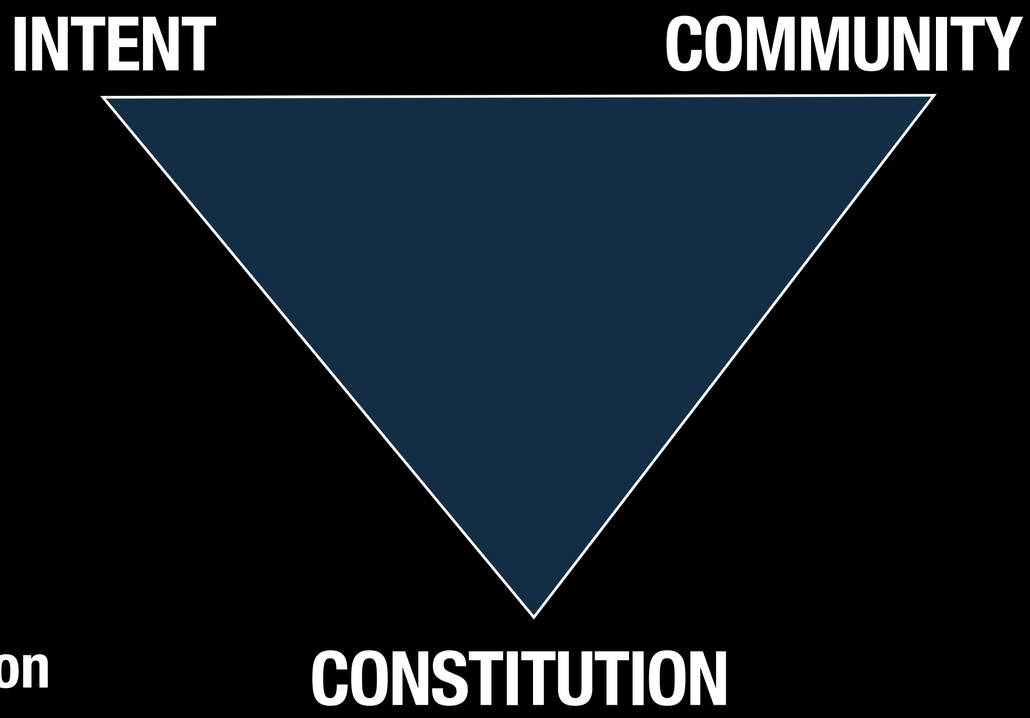
Set of rules == Constitution

Entry agrees to Constitution

- *Preserves free entry*
- *Does not need a wall*

Tx signs the Constitution

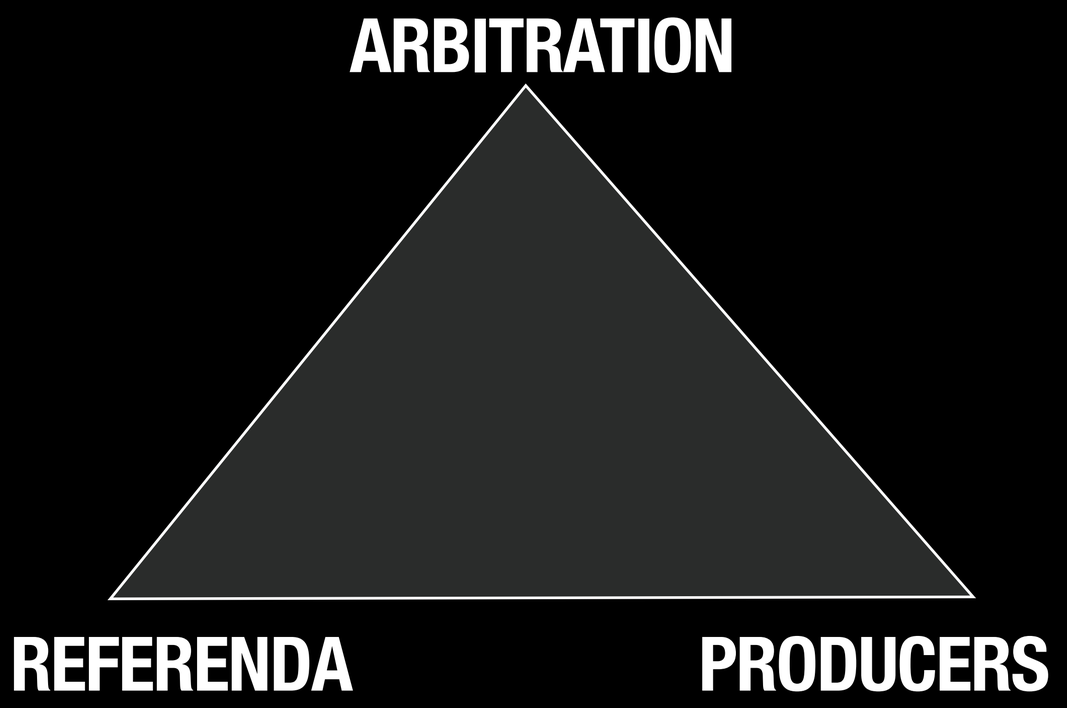
Community ⇐ Members' Intent + Constitution



Baseline rules include:

- DPOS ⇐ delegated proof of stake
- referenda ⇐ to appoint roles
- Dispute Resolution ⇐ solve problems
- referenda ⇐ change the rules

Community owns its Constitution



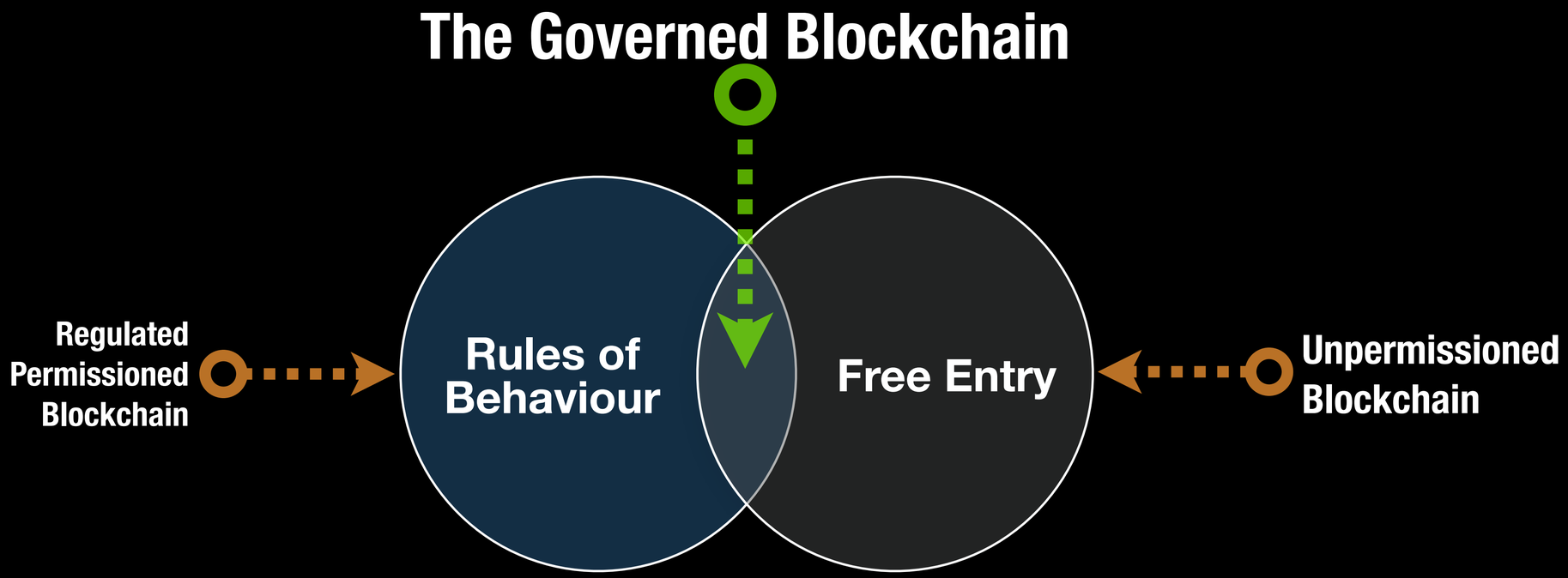
V. Summary - (i) - Entrepreneur needs win-win

Entrepreneur needs to make value not take value

- Unpermissioned ⇒ the taking of value, win-lose
- Permissioned ⇒ concentrates the value, excludes

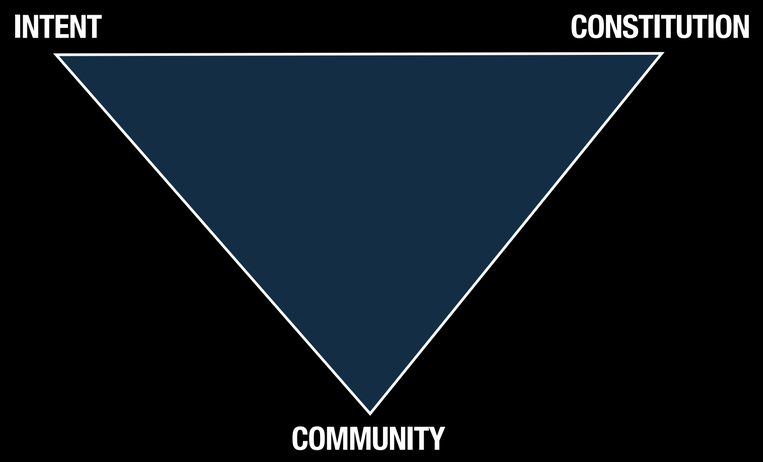
Wanted: the freedom of one & protection of other

Summary - (ii) - A third choice



The fallacy is the wall:
the real requirement is free entry

(iii) - The Governed Blockchain

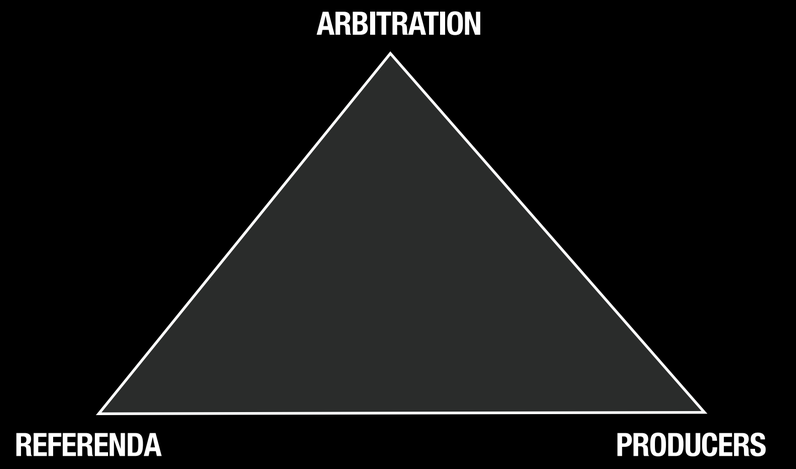


Agree on entry:

Intent + Constitution == Community

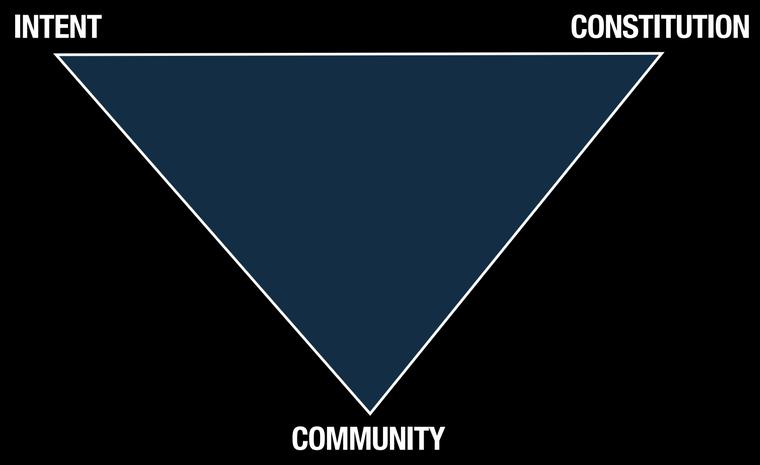
Sets rules

(iii) - The Governed Blockchain



Rules to resolve the Black Swan

- set roles: Producers, Changes
- resolve disputes: own forum



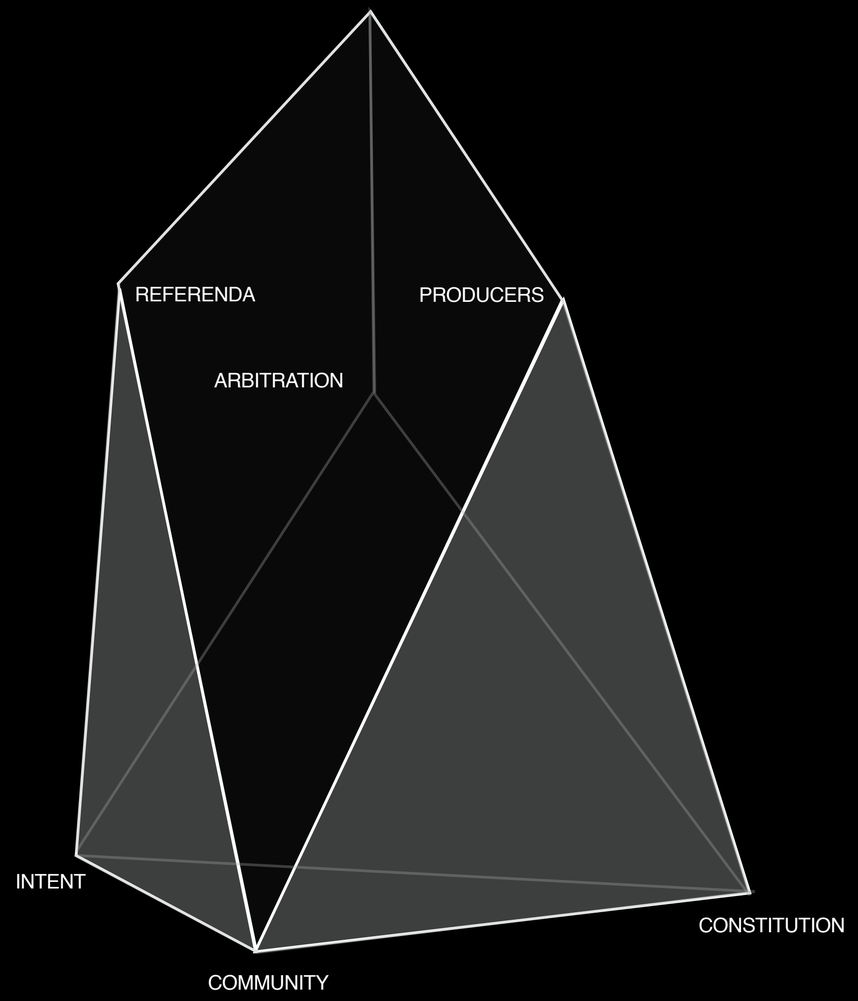
Agree on entry:

Members + Constitution == Community

Sets rules

EOS is…

THE GOVERNED BLOCKCHAIN



Thank you!