



# e t h e r e u m

## F r e e n e t   o r   S k y n e t ?

P r i m a v e r a   D e   F i l i p p i

C E R S A   /   C N R S   /   U n i v e r s i t é   P a r i s   I I

B e r k m a n   C e n t e r   f o r   I n t e r n e t   &   S o c i e t y   a t   H a r v a r d   L a w   S c h o o l







?

Satoshi Nakamoto

Bitcoin:

“a decentralized currency based on a cryptographic ledger”



No. of Instrument	Instrument	ITS DATE.	Date of REGISTRY.	GRANTOR.	GRANTEE.	QUANTITY OF LAND.	COUNTERPARTS OR AMOUNT OF RECEIPTS.	REMARKS.
	Patent	May 17 1802		Crown	Hambrough P. Standliff	S <sup>t</sup> e & all of Con. B.		
	Patent	May 1 1805		Crown	Eckard Kling	Spt of S <sup>t</sup> e		
	Patent	Aug 4 1841		Crown	Parah Berles	Rear pt		
	Patent	May 17 1812		Crown	Hambrough P. Standliff	all of lot #14 in B.		
80	B.S.	19 Novr 1805	1 Feb 1806	Charles Norris	Alexander Macdonald	100 acres Spt of Shales of 12, 13 & 14		
132	B.S.	14 July 1807	16 Jan 1808	Hambrough P. Standliff	Ebongee Williams	100 acres Ept of lot 14 in land C.B.		
246	B.S.	20 Sept 1810	10 Jan 1811	Ebongee Williams et al	Elias Jones	100 acres Ept 10% 11%		
274	Mort	13 Aug 1811	16 Aug 1811	Elias Jones	Laurence Herchmer	100 acres Ept A+B.		
649	B.S.	10 Feb 1819	13 Feb 1819	Alexander M'Donnell	John Cummins	100 acres Spt Shales of 12, 13, 14 in A.		
686	B.S.	9 June 1819	7 July 1819	Elias Jones	Laurence Herchmer	100 acres Ept A+B.		
858	B.S.	27 June 1807	5 Novr 1821	Hambrough P. Standliff	Peter Reutter	100 acres Wt of S <sup>t</sup> e Second Land Section front & Wt of bottom lot in front Street		
859	B.S.	8 Sept 1821	5 Dec 1821	Peter Reutter	Herrry Reutter	100 acres 10% 10% 10%		
900	B.S.	10 Novr 1821	15 Feb 1822	Hiram Ash	Elias Jones & J. Burnham	50 acres Wt of S <sup>t</sup> e on 2 <sup>d</sup> Con of Indian land		
901	B.S.	10 Novr 1821	15 Feb 1822	Herry Reutter	Hiram Ash	50 acres Wt of S <sup>t</sup> e 10% 10%		
910	B.S.	5 March 1822	8 Mar 1822	Hiram Ash	Simon Fornel	1 acre pt lot 14 in A.		
989	2. Lease	7 Feb 1823	13 Feb 1823	Elias Jones & J. Burnham	Hiram Ash	10 1/2 acres pt 10%		
990	B.S.	7 Feb 1823	13 Feb 1823	Hiram Ash	Elias Jones	1 1/2 acres Spt of S <sup>t</sup> e at Spt		
1047	B.S.	20 Aug 1823	25 Aug 1823	Hiram Ash	Better Simons	4 acres pt Spt lot 14 in A. in center		
1049	B.S.	20 Aug 1823	26 Aug 1823	Hiram Ash	Caleb Mallory	1 1/2 acres Spt of S <sup>t</sup> e at Spt		
1190	B.S.	23 June 1823	21 Jan 1825	John Cummins	Hart Logan	100 acres Spt of S <sup>t</sup> e Shales of 12, 13, 14 in A.		
1298	B.S.	1 Oct 1823	13 Oct 1823	Herry Reutter	J. Bruffon	18 acres Spt of S <sup>t</sup> e in A.		
1454	B.S.	22 Oct 1826	26 Oct 1826	Herry Reutter	Anthony Morton	pt Wt of Con B. in A.		
1463	B.S.	18 Sept 1826	26 Dec 1826	Herry Reutter	Samuel Todd	pt Wt of 10%		
1597	B.S.	29 Sept 1827	12 Oct 1827	Joseph H. Herchmer	William M. Herchmer	100 acres Ept front of 1 <sup>st</sup> Con.		
1718	B.S.	1 Aug 1828	25 Aug 1828	Samuel Todd	George S. Boulton	1 acre Same as 1463.		
1728	B.S.	30 Sept 1828	7 Oct 1828	Anthony Morton	George S. Boulton	Same as 1454.		
1737	B.S.	2 Aug 1828	25 Nov 1828	Herry Reutter	George S. Boulton	18 acres Con B. Pt 1 <sup>st</sup> Con.		



2. digital tokens

= decentralized  
currency





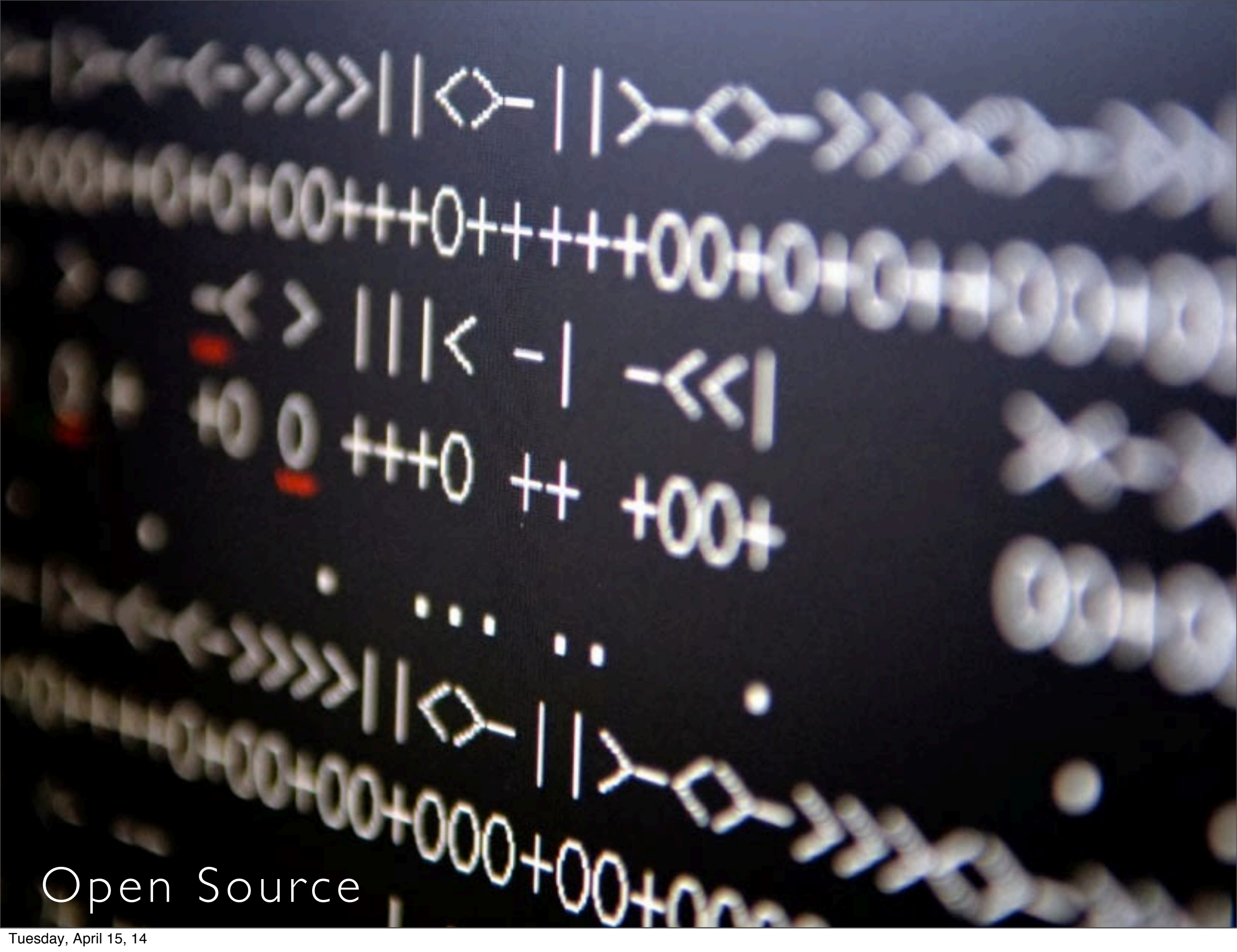


3. encryption = decentralized  
crypto-currency



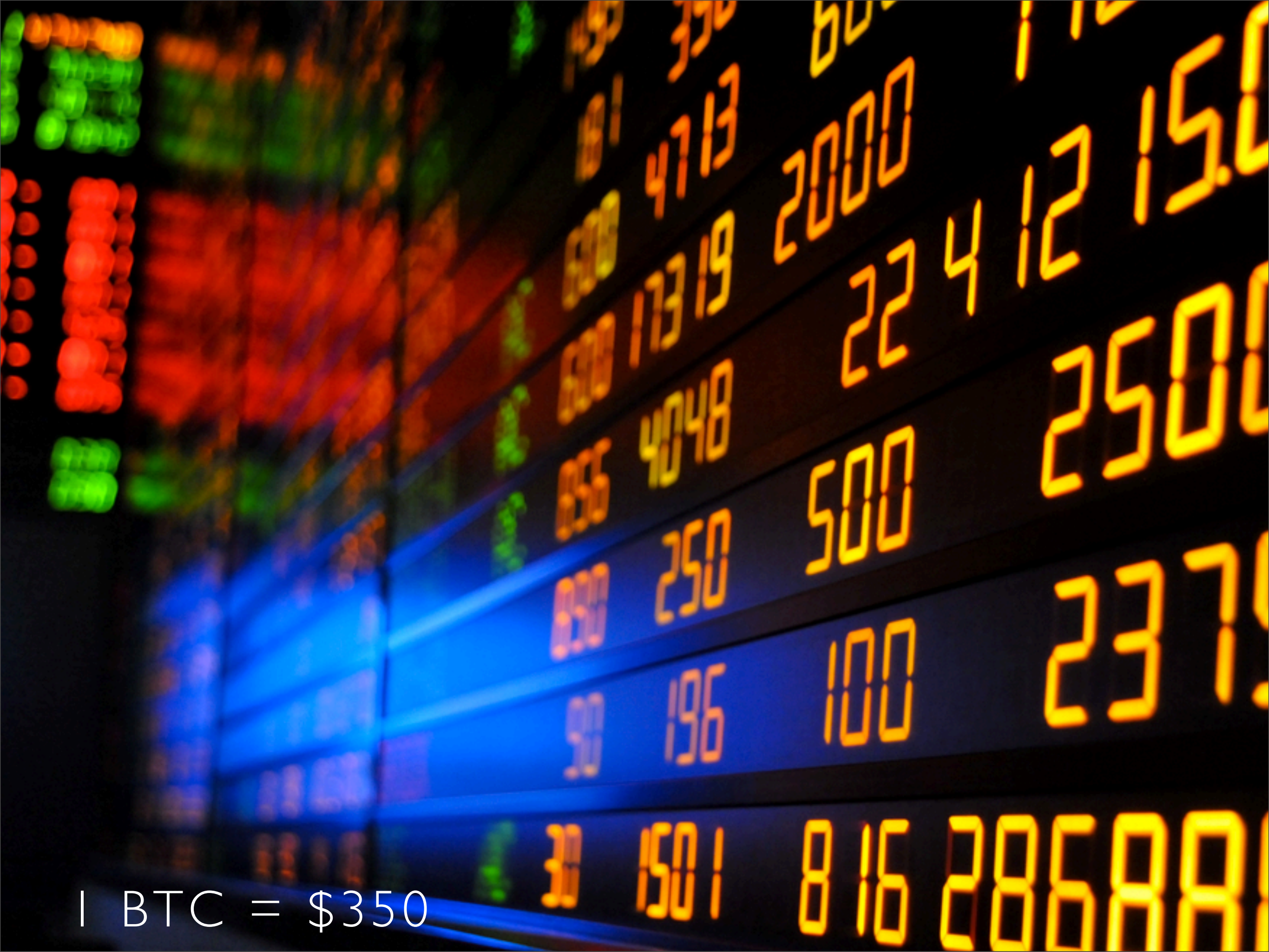






Open Source

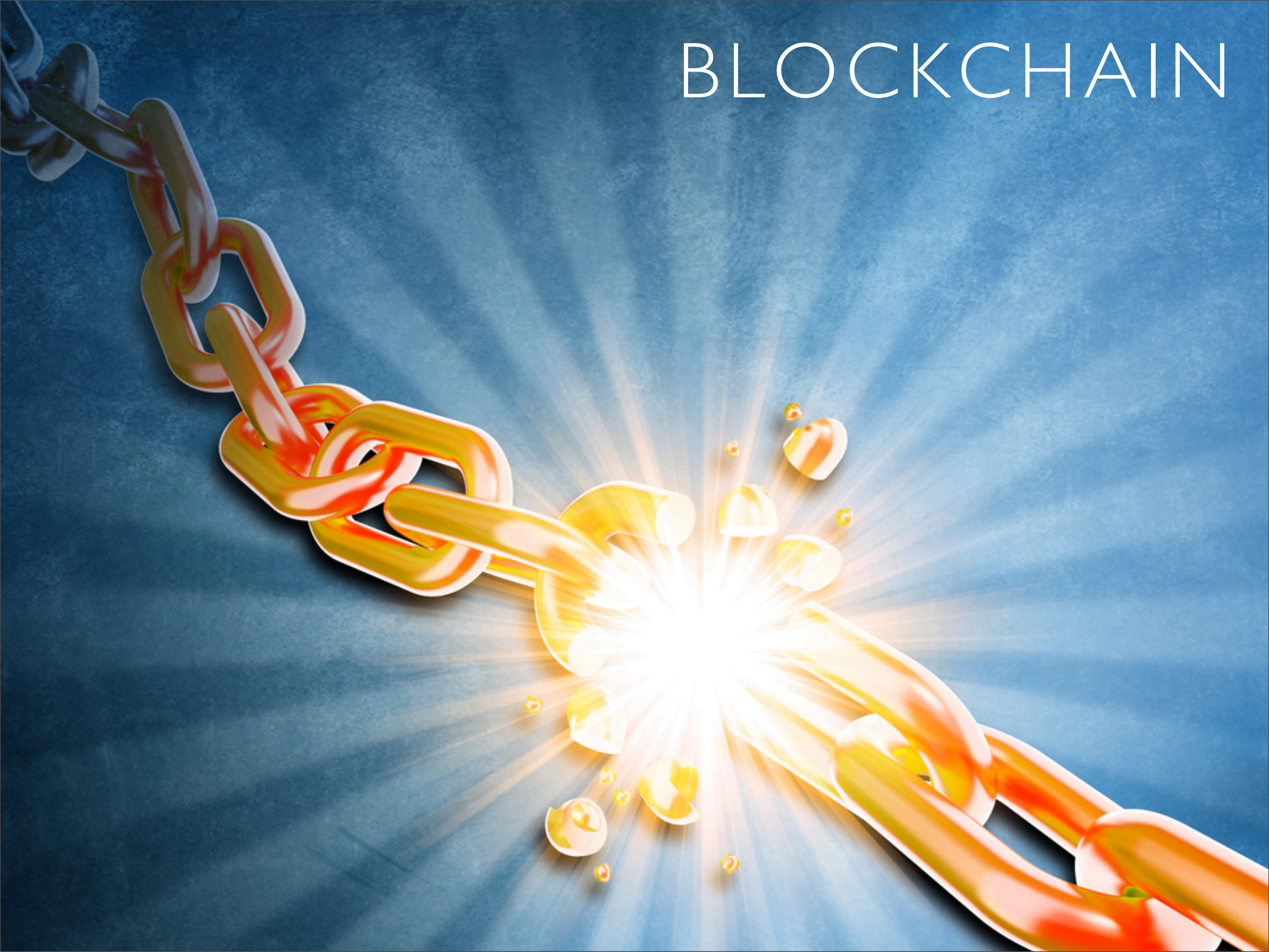




| BTC = \$350



# BLOCKCHAIN







Next-generation Smart Contract  
& Decentralized Application Platform

e t h e r e u m





crypto-currency  
2.0 ?



1. decentralized database

2. digital tokens

3. encryption



4. Turing-complete scripting language

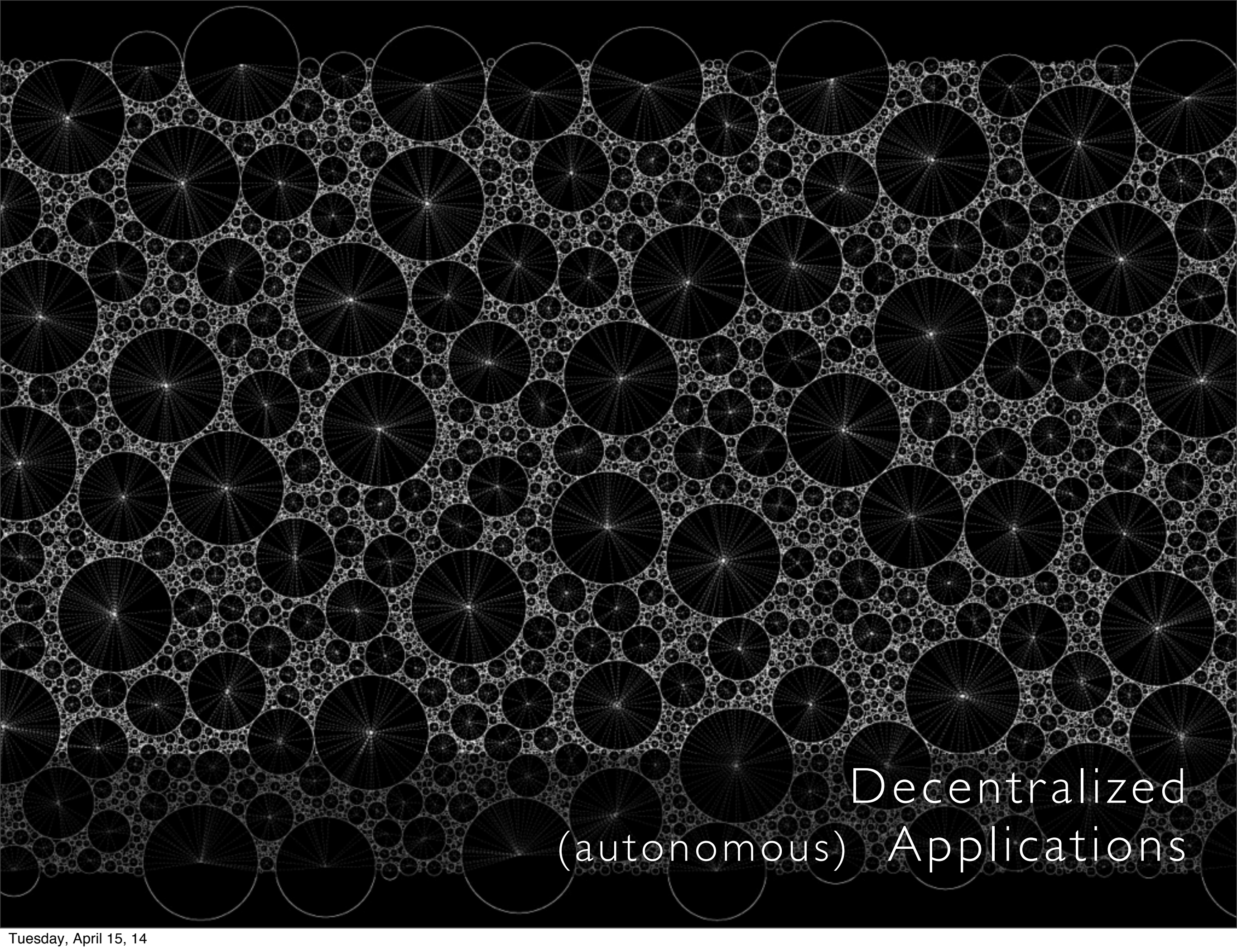




# ethereum

less features for more generativity



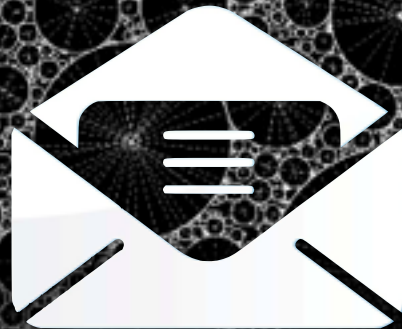


# Decentralized (autonomous) Applications





Dropbox



Decentralized  
(autonomous) Applications



...and 1310 cluster IO buffer headers  
...California. All rights reserved.  
...ing service present  
...ing present  
...h: "/pci/@d/pci-ata@1/ata-4@0/@0:10,\mach\_kernel", Waiting on <dict  
>IOPathMatch</key><string ID="1">IODeviceTree:/pci/@d/pci-ata@1/ata  
...ring></dict>  
...ire GUID = 0x50e4ff:0  
...ent:0  
...t device = IOService:/GossamerPE/pci@800000000/ApplesCracklePCI/p  
...2PCIBridge/pci-ata@1/CMD646Root/ata-4@0/CMD646ATA/ATADeviceHub@0  
...geDriver/IOATABlockStorageDevice/IOBlockStorageDriver/ST340014A  
...titions  
...HFS Untitled\_3@10  
...ior 14, minor 9  
...ted with uid=0 audit-uid=-1



# CONTRACTS





# SMART CONTRACTS





# SMART CONTRACTS





# SMART CONTRACTS



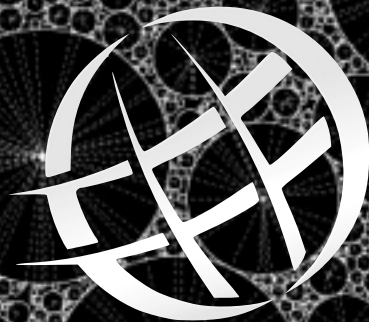




# DECENTRALIZED AUTONOMOUS ORGANIZATIONS

(DAO)

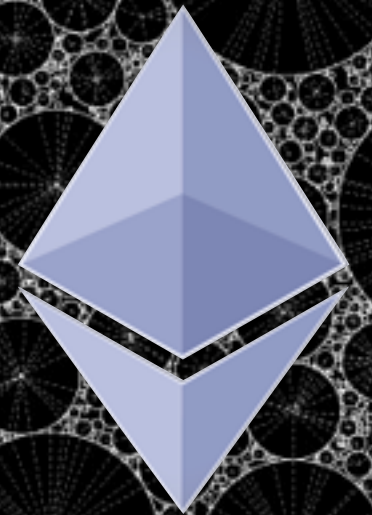




ICANN



*namecoin*



(DAO)





# DAO & THE LAW



# AUTONOMOUS AGENTS





# SELF-SUFFICIENT





# DECENTRALIZED





freedom !





# LEGAL CHALLENGES

CONTRACT LAW

PROPERTY LAW

LIABILITY / RESPONSIBILITY







SMART CONTRACTS

TRANSPARENT

SELF-ENFORCING













Legal Safeguards: undue influence  
information asymmetry  
unconscionability  
incapacitation

LEGALLY BINDING

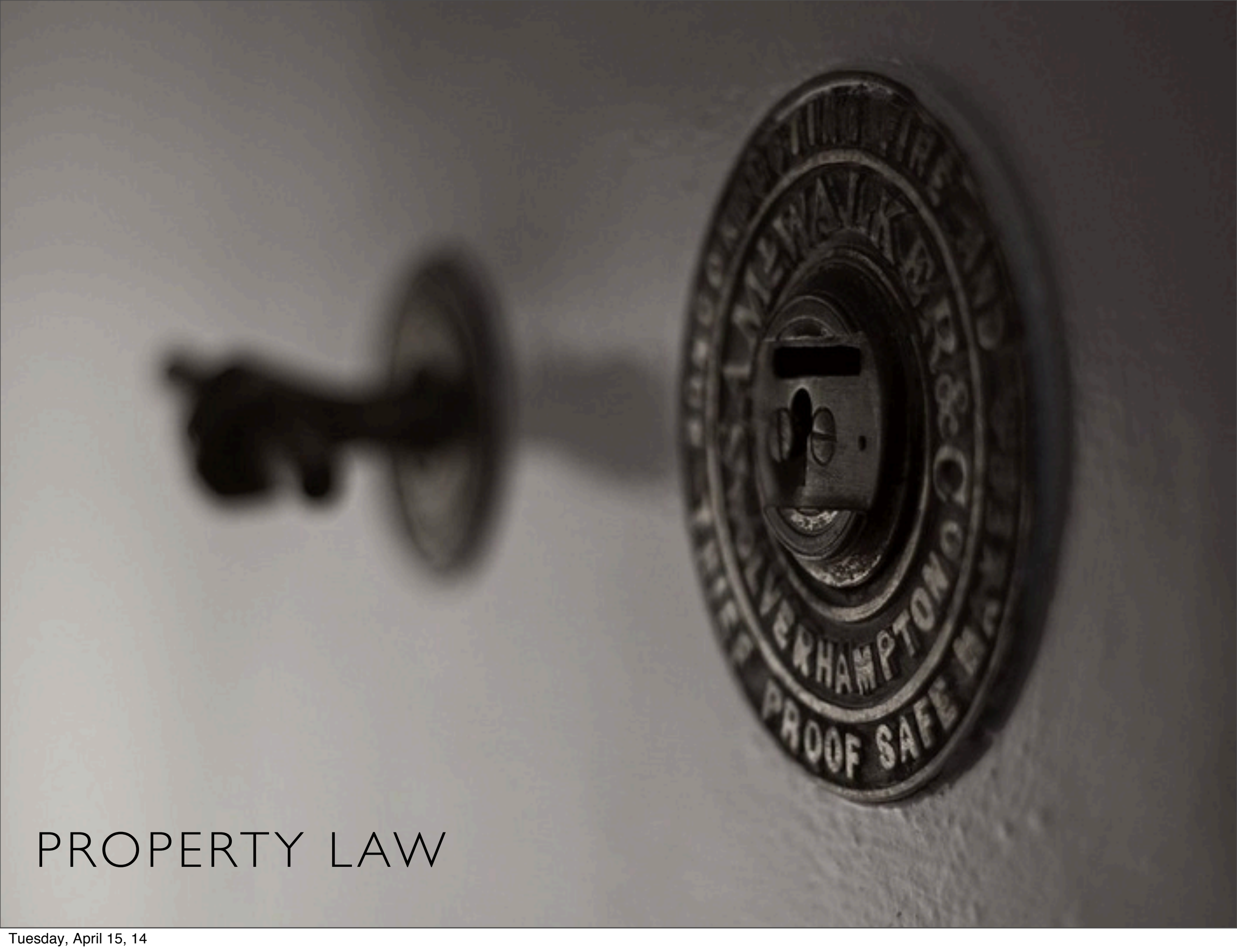


A close-up photograph of a person's hands and forearms, secured by metal handcuffs. The handcuffs are connected by a chain. The person's hands are clenched into fists. The background is solid black, and the lighting highlights the skin and the metallic sheen of the cuffs.

# TECHNICALLY BINDING

Rules dictated  
by the technological framework





# PROPERTY LAW



*(on the blockchain, nobody knows you're a fridge)*

# I. SMART PROPERTY

Decentralized + Trust-Free Asset Management System



# Cryptographically activated assets

(Smart car)



(Smartphone)



## 2. CRYPTO-PROPERTY







DEFINED + ENFORCED  
BY CODE





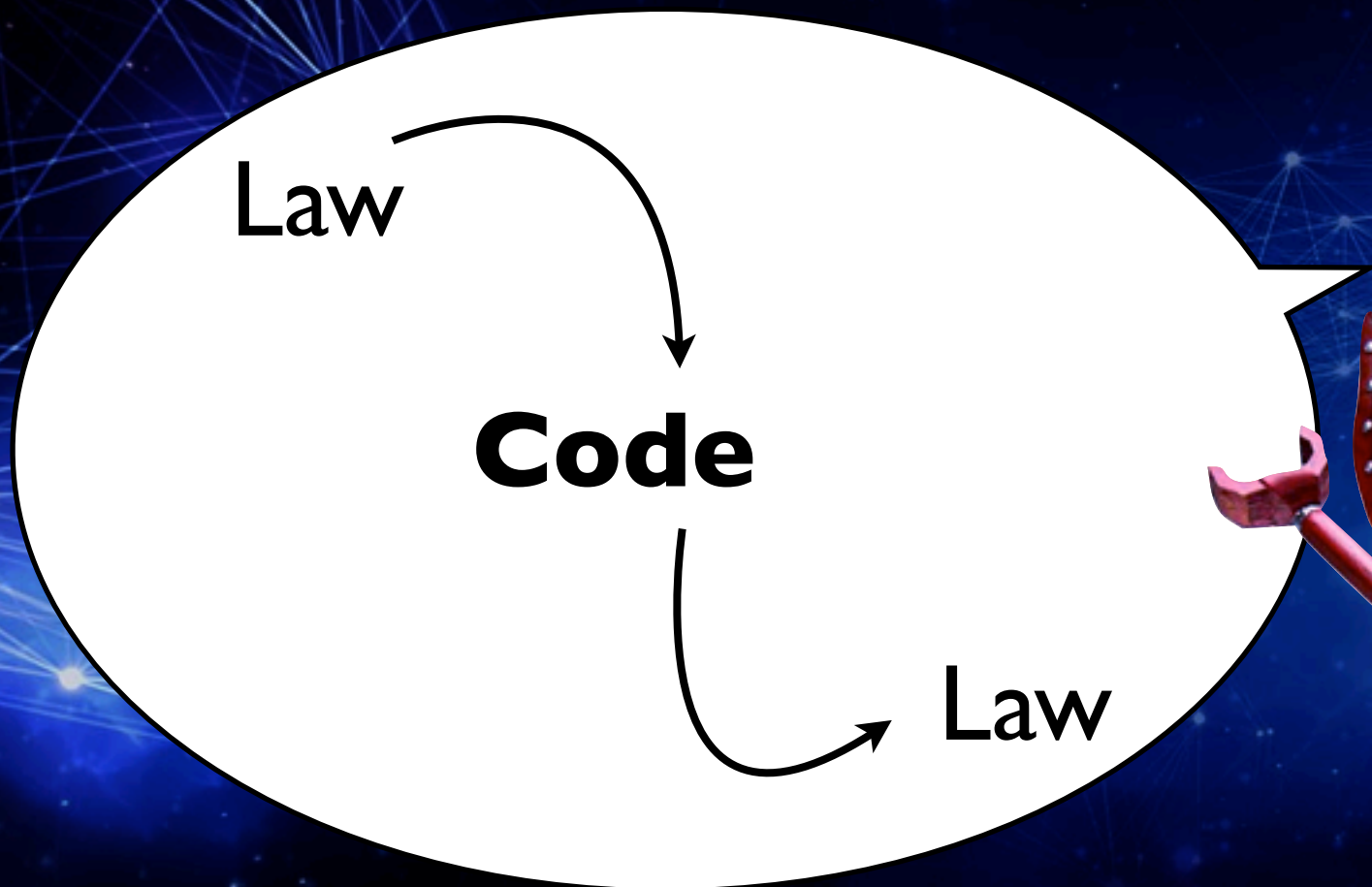


CODE IS LAW:  
DOES ANYONE GET  
THIS YET?

© Lawrence Lessig



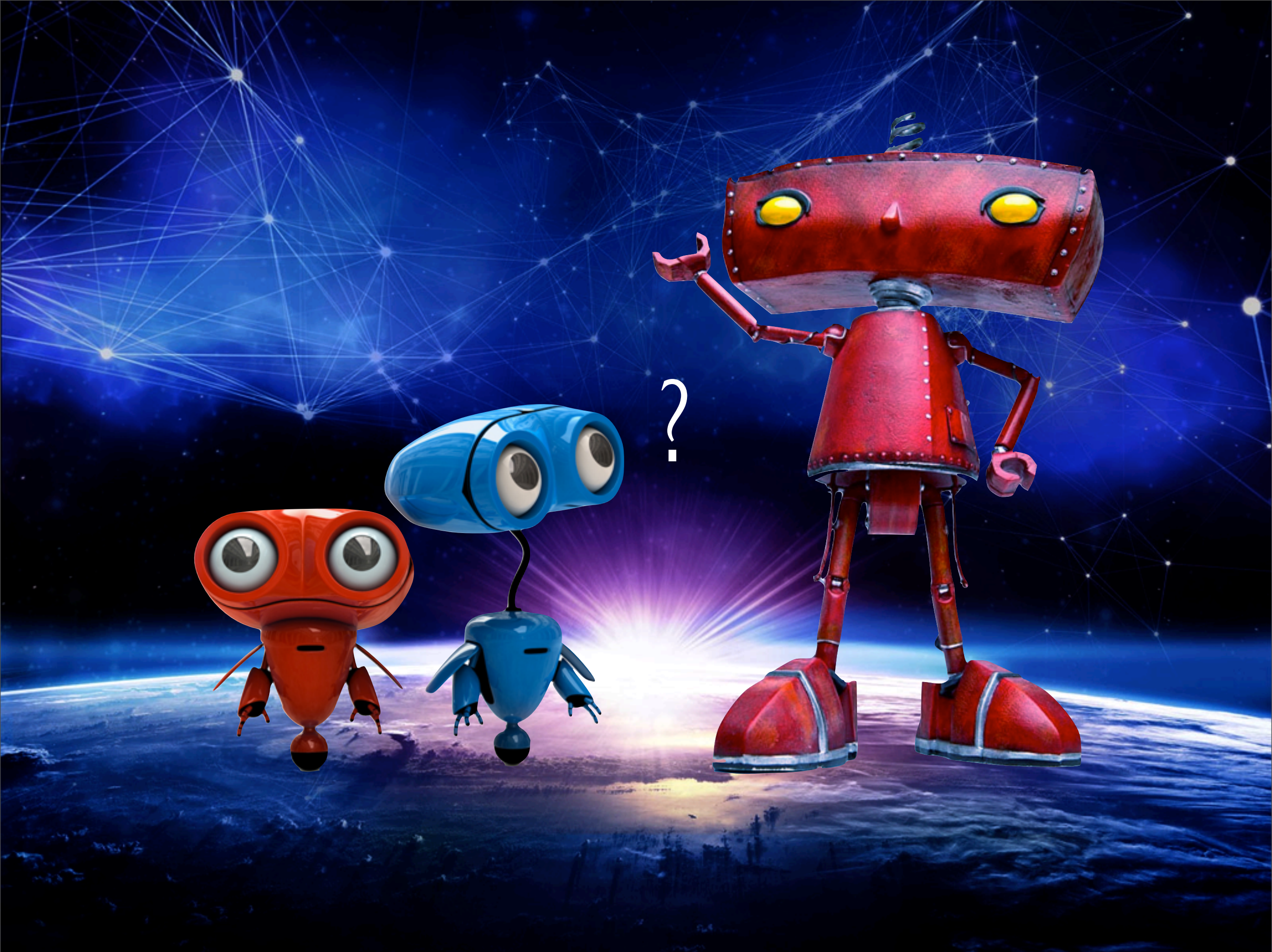








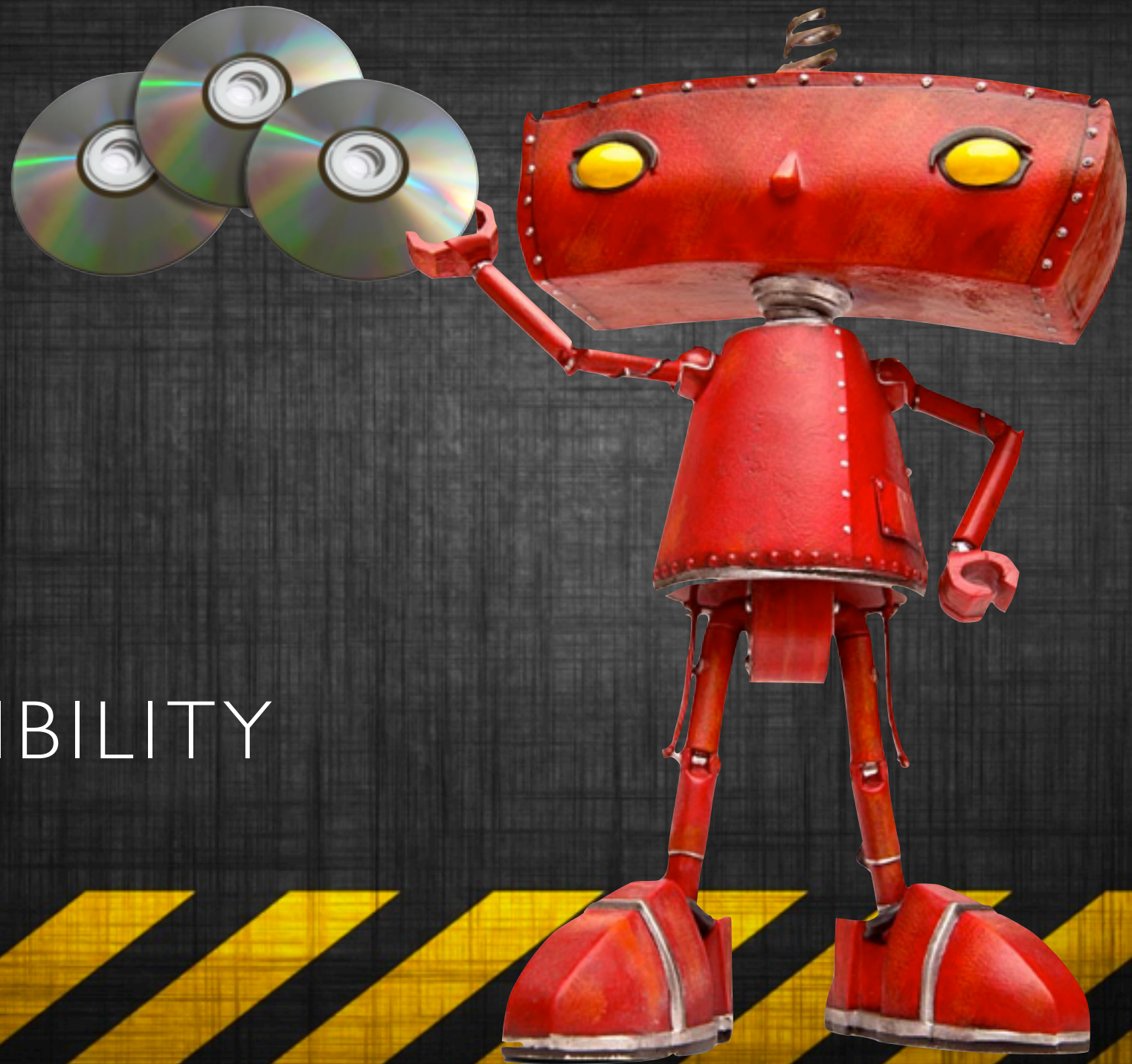







LIABILITY

RESPONSIBILITY



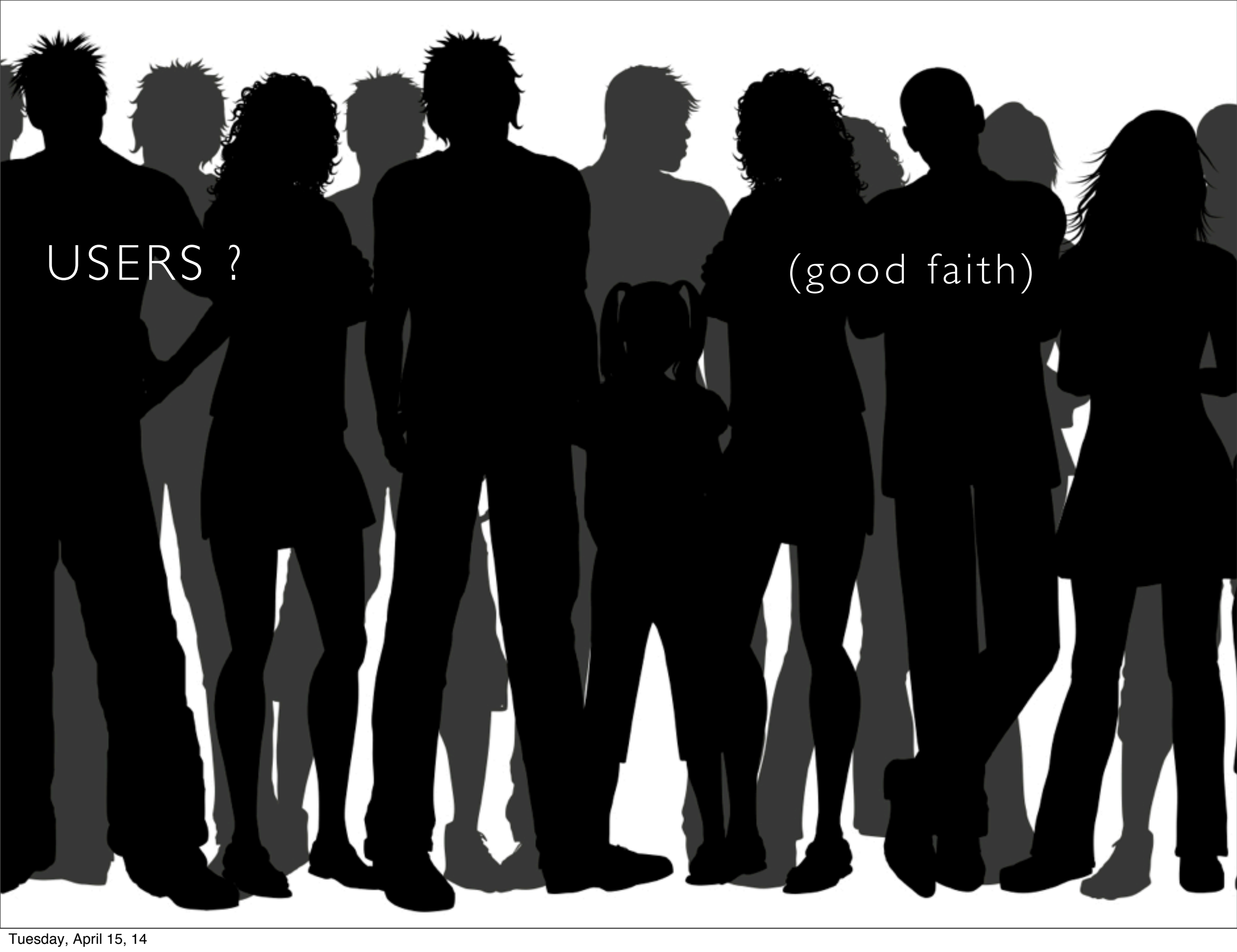


A black and white photograph featuring two Guy Fawkes masks. One mask is in the upper right, looking towards the left. The other is in the lower center, looking downwards. The background is dark and out of focus, with some light reflecting off the masks' surfaces.

(anonymous)  
(no control)

CREATORS ?

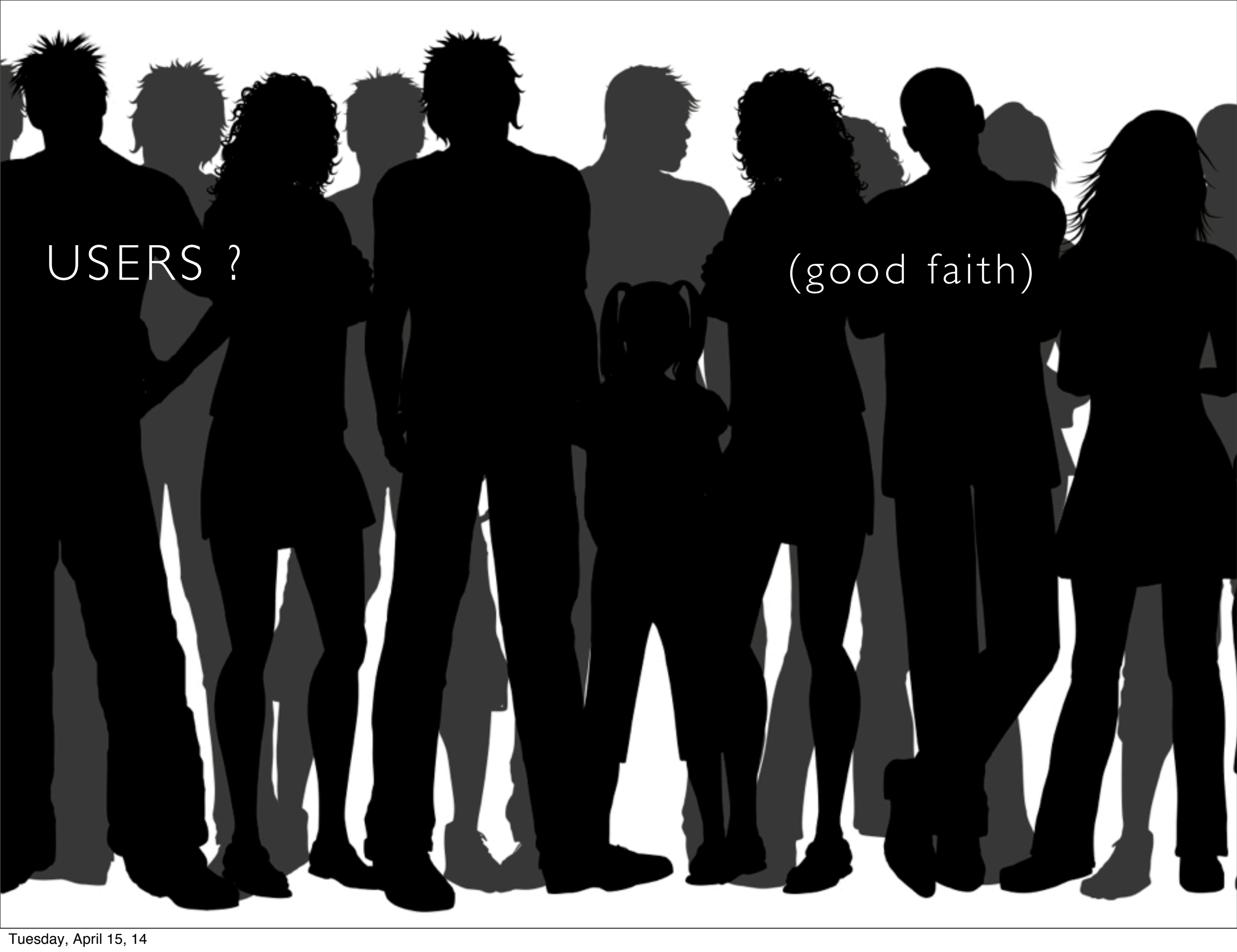


A black and white image showing the silhouettes of a diverse group of people of various ages and genders standing in a line. The silhouettes are solid black against a white background. The group includes a young man with spiky hair, a woman with curly hair, a man with short hair, a woman with long hair, a man with short hair, a woman with curly hair, a man with short hair, a woman with long hair, a man with short hair, a woman with long hair, a man with short hair, and a woman with long hair. The silhouettes are arranged in a line, with some people slightly behind others, creating a sense of depth. The text 'USERS ?' is written in white, sans-serif font on the left side, and '(good faith)' is written in white, sans-serif font on the right side. The date 'Tuesday, April 15, 14' is written in small black font at the bottom left corner.

USERS ?

(good faith)

Tuesday, April 15, 14

A black and white image showing the silhouettes of a diverse group of people of various ages and genders standing in a line. The silhouettes are solid black against a white background. The group includes a young man with spiky hair, a woman with curly hair, a man with short hair, a woman with long hair, a man with short hair, a woman with curly hair, a man with short hair, a woman with long hair, a man with short hair, and a woman with long hair. The silhouettes are arranged in a slightly staggered line, with some people standing slightly behind others. The text 'USERS ?' is written in white, sans-serif font on the left side, and '(good faith)' is written in white, sans-serif font on the right side. The overall image conveys a sense of a diverse user base.

USERS ?

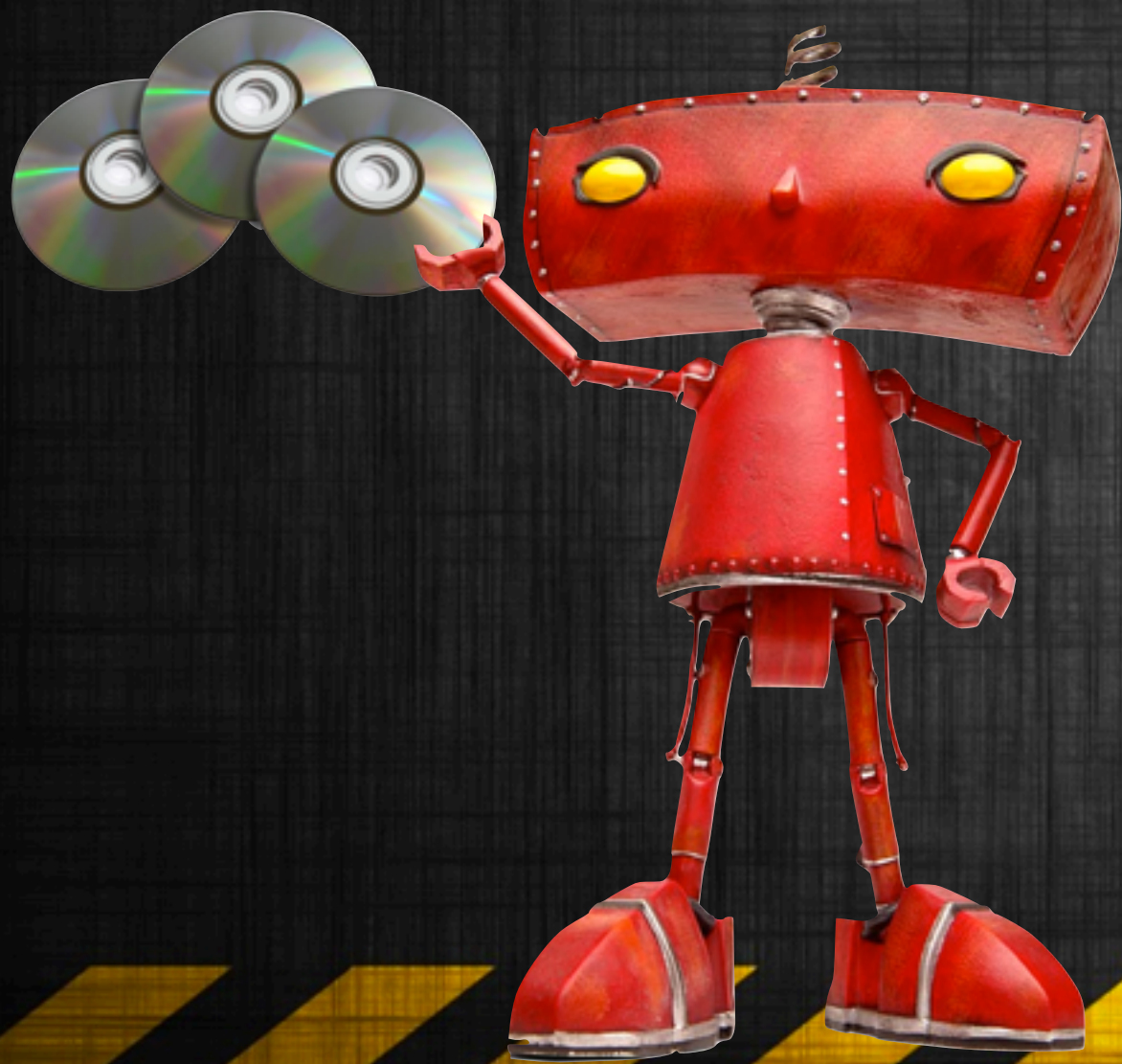
(good faith)

Tuesday, April 15, 14

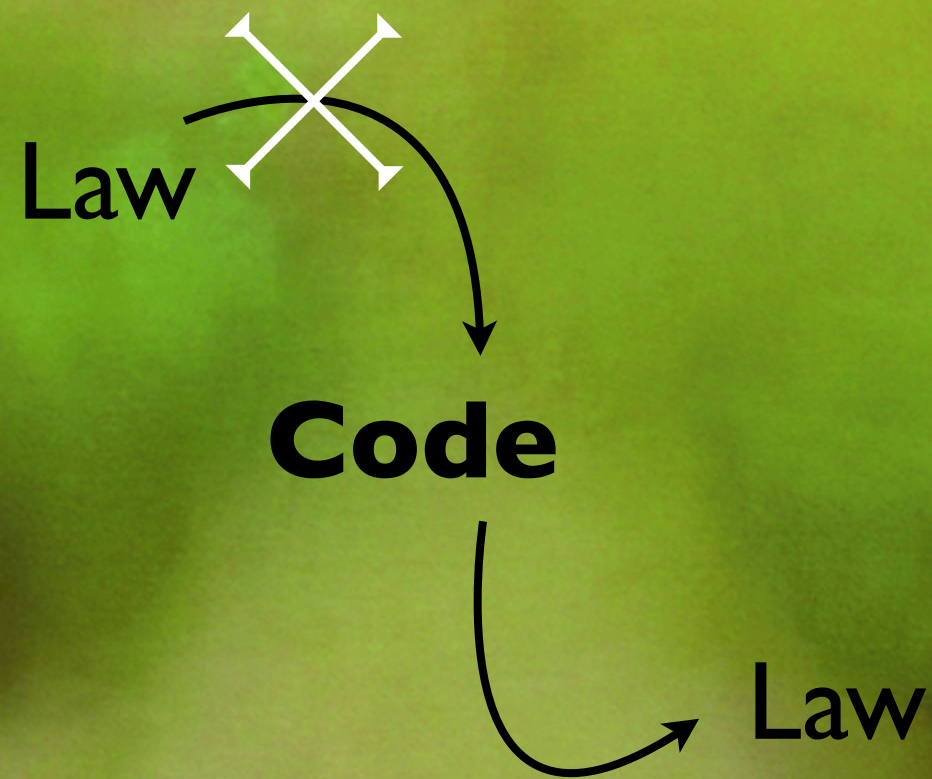


DAO ?

(law enforcement?)







LEGAL LIMBO





“Code your own utopia”  
ethereum





TRUSTLESS  
SOCIETY

DECENTRALIZED  
(LEX CRYPTOGRAPHICA) LAW





“Code your own <sup>dys</sup>~~u~~topia”  
ethereum





SELF-ENFORCING  
RULES

TOTALITARIAN  
PANOPTICON



“There are no spaces of perfect freedom from all constraints.”

Yochai Benkler ©

Rules of LAW

universal

ex-post (imperfect) enforcement

Tyranny of CODE

consensus-based

ex-ante (automatic) enforcement





Questions?

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