



CONSENSYS

Blockchain & Intellectual Property

Empowering people to create (more)

By Marc Lijour

August 9, 2018

One of the largest blockchain companies in the world with 1,000 employees in 30 countries



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For Want of a Printer

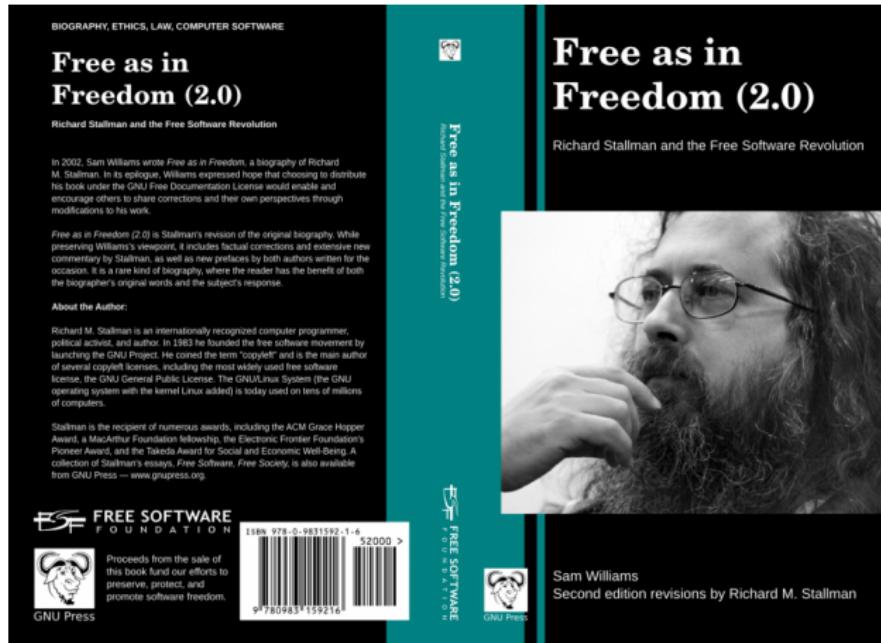


Figure: Richard Stallman's first step into Free Software (Williams, 2002; Williams and Stallman, 2010)



Patents and the future of Intelligence

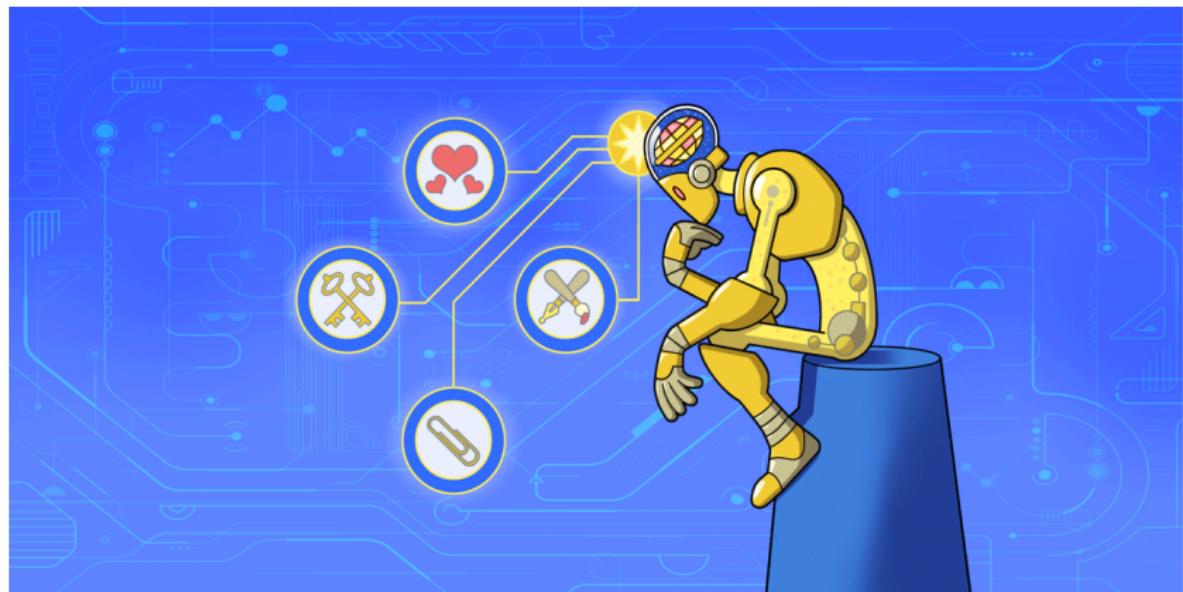


Figure: The Electronic Frontier Foundation (EFF) questions whether patents will slow down innovations in AI (2017) –credit: EFF



What's (un)fair with APIs

- *Oracle America, Inc. v. Google, Inc.* took us for a ride (2012–2016), see Wikipedia's article in the reference section
- the US Court of Appeal for the Federal Circuit found that **APIs are copyrightable** (2018)
- *fair use* does not apply for Java in Android
- in 2016 Google ships OpenJDK Java libraries licensed under GPLv2, starting with Android Nougat (Google)



Elon Musk does not want to block Innovation



Figure: Tesla promises not to enforce patents (Musk, 2014) –credit: Steve Jurvetson



Building complex large-scale software systems (fast)

An introduction to Free/Libre Open Source Software (Intel, 2014)

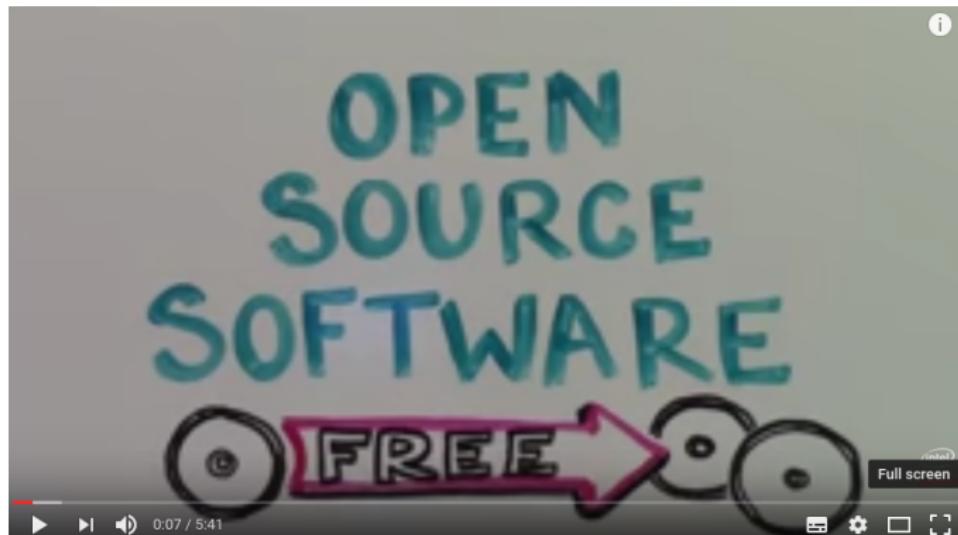


Figure: <https://www.youtube.com/watch?v=Tyd0FO0tko8>

©Intel Software (2014)



Blockchain is Open/Free by design

The screenshot shows the GitHub interface for the 'bitcoin / bitcoin' repository. At the top, there's a navigation bar with links for 'This repository', 'Search', 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. On the right side of the top bar are icons for notifications, a plus sign, and a user profile. Below the top bar, the repository name 'bitcoin / bitcoin' is displayed, along with a 'Watch' button, a star icon for 'Star' (26,438), a fork icon for 'Fork' (15,439), and a user profile icon. A secondary navigation bar below the main one includes links for 'Code', 'Issues 574', 'Pull requests 279', 'Projects 7', and 'Insights'. The main content area displays information about the repository, including 'Bitcoin Core integration/staging tree' and a link to 'https://bitcoin.org/en/download'. Below this, there are tabs for 'bitcoin', 'c-plus-plus', 'p2p', 'cryptocurrency', and 'cryptography'. A summary bar at the bottom provides metrics: 15,951 commits, 9 branches, 186 releases, 504 contributors, and an MIT license indicator.

License

Bitcoin Core is released under the terms of the MIT license. See [COPYING](#) for more information or see <https://opensource.org/licenses/MIT>.



Intellectual Property Rights (and constraints)

- Copyright
- Patents
- Trademark
- Trade Secrets



The Four Freedoms

Freedom 0

"The freedom to run the program, for any purpose"

Freedom 1

"The freedom to study how the program works, and adapt it to your needs"

Freedom 2

"The freedom to redistribute copies so you can help your neighbor"

Freedom 3

"The freedom to improve the program, and release your improvements to the public, so that the whole community benefits"



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Decentralization

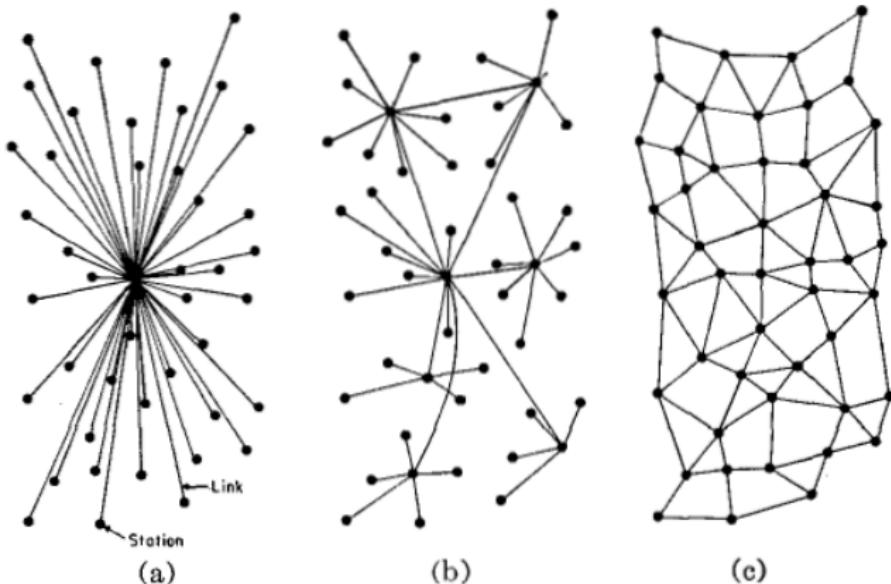


Fig. 1—(a) Centralized. (b) Decentralized. (c) Distributed networks.



What is Blockchain?

Immutable ledger

- Write-only distributed database registering immutable record of every transaction that occurs



Smart contracts

- Ethereum blockchain store and execute programs on the blockchain



Cryptography

- Uses public private key infrastructure to create system that is tamper-proof and secure



Decentralized consensus

- Many replicas of the blockchain database
- No one participant can tamper it
- Consensus among majority of participants is needed to update database.



Cryptographic Primitives

Hashing functions

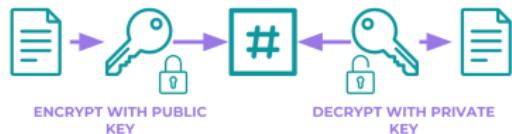
One way transform of data into unique, fixed length digest that cannot be reversed to produce the original input

Asymmetric key cryptography

Enables encryption with public key that can only be decrypted with secret, private key and vice versa

Digital signatures

Mathematical technique used to validate authenticity, integrity and originator of message



Token-Curated Registry Pattern

Brief History of TCRs

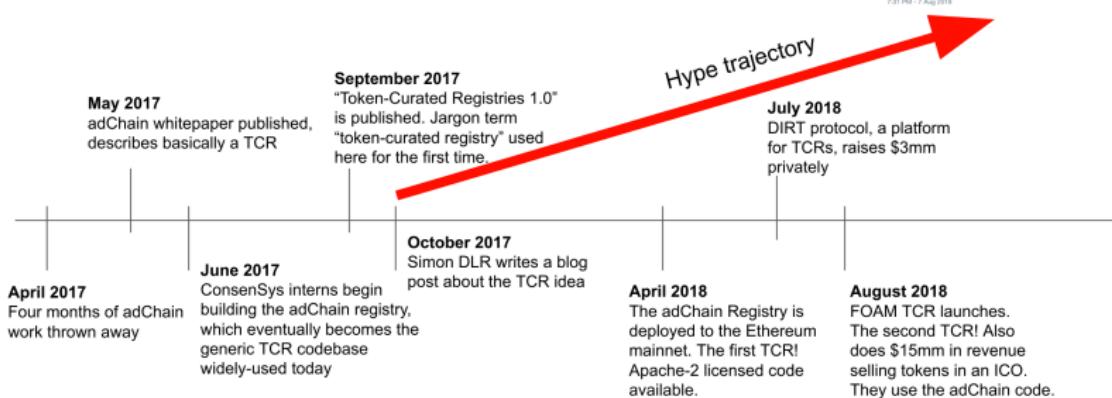


Figure: from Mike Goldin's presentation (2018)



Use Cases in Media & Entertainment

"In a world where the infrastructure is shared, you don't have to necessarily charge 10 to 30% for a transaction."

-Simon De La Rouviere, Ujo Music



Improve transparency of
royalty payments



Enable "per-use" payment
models with micropayments



Increase ad revenues by
bypassing intermediaries



Better visibility and efficiency
of animation pipeline



Eliminate ticket fraud in live
events & concerts



Share value in viewership and
advertising data



Simplify cross-platform
contract management



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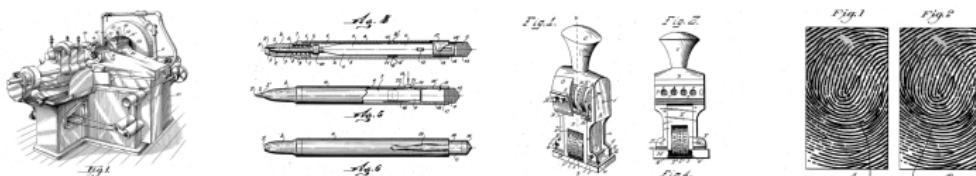


Case study: Bernstein

Blockchain solutions for securing intellectual property assets and innovation processes

Bernstein allows companies to create a digital trail of records of their innovation processes using blockchain technology. Inventions, designs, and proofs of use can be quickly registered to obtain blockchain certificates that prove ownership, existence and integrity of any IP asset.

Most importantly, all notarized information will remain perfectly private, thanks to a unique cryptographic layer.



SECURE TRADE SECRETS

Be ready to fight patent trolls and prepare a strong prior use defense.

ENHANCE CONTRACTS

Blockchain certificates for enforceable NDAs and strong licensing contracts.

ESTABLISH PRIOR ART

Enjoy indisputable timestamping and provable public availability.

MAKE COPYRIGHT CLAIMS

Easy and convenient copyright claims for software, 3D models, manuals, ..

The blockchain is the perfect registry for both public and private records.
A unique notarization platform: decentralized, uncensorable, permissionless, resilient.

Request Bernstein product deck

Figure: <https://www.bernstein.io>



Case study: Vaultitude



Figure: <https://vaultitude.com>



Case study: Baoquan



Figure: The Hangzhou Internet Court accepted evidence from the Baoquan Blockchain on a copyright case (Brunner, 2018)

Case study: Viant

Tracking IP (and other) Assets



Viant

NEXT GENERATION ASSET TRACKING AND BPM



Viant is a blockchain-based platform for modeling business processes, tracking assets and building the supply chains of the future. Leveraging cryptographic security and smart contracts, Viant provides organizations verifiable insights as assets are managed and propagated through the entire supply chain and was built from the ground up as an asset and domain agnostic platform for a variety of industries.

REAL ESTATE

Absence of approval and sale provenance of land/real estate can lead to long validation lead times during sale or invalid double-sales.

EDUCATION

Diploma validation takes weeks/months impacting individuals, schools and corporations with both admissions and recruitment.

OIL & GAS

Lost and untraced samples impact important business decisions and lead to costly fines for non-compliance.

TRANSPORT

Capture and reliably track vehicle telematics to unlock new business value for used car sales or inform insurance pricing and rental car management.

HEALTHCARE

Lack of vaccine provenance and administration records impact patients, donors, social workers and manufacturers.

Figure: <https://viant.io>



Complementary tools: Alethio

Big Data and Analytics on Ethereum

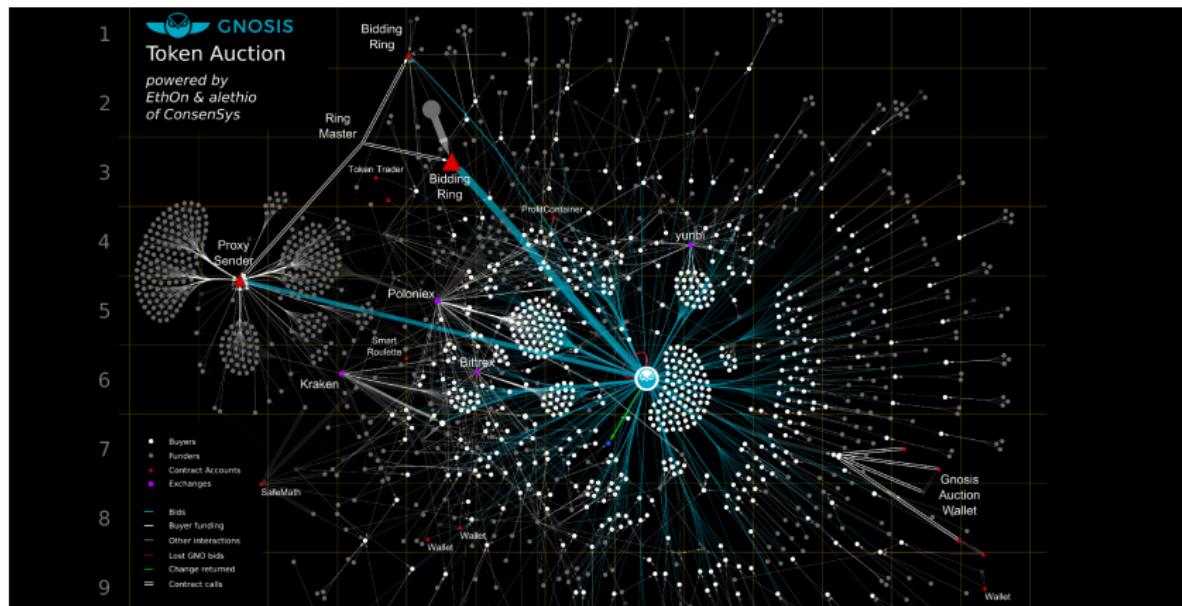
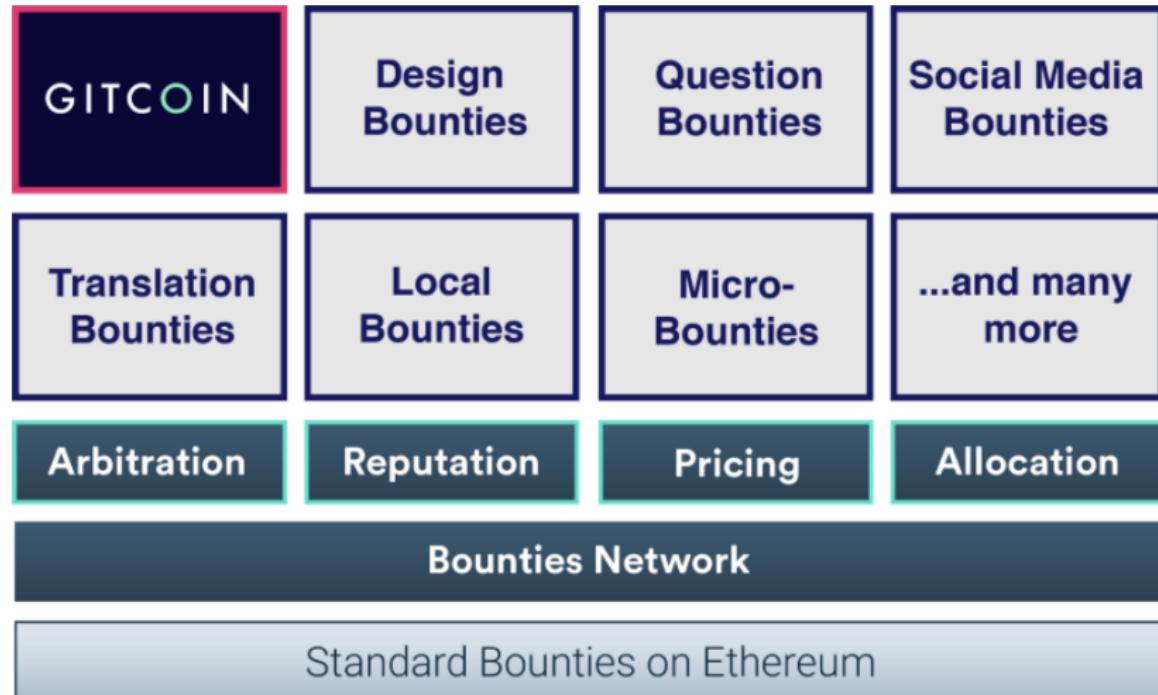


Figure: <https://aleth.io>



Developer-friendly marketplace: The Bounties Network

<https://bounties.network>



Gitcoin (depth-first) and Bounties Network (breadth-first) have integrated!



Gitcoin

Gitcoin is not a coin

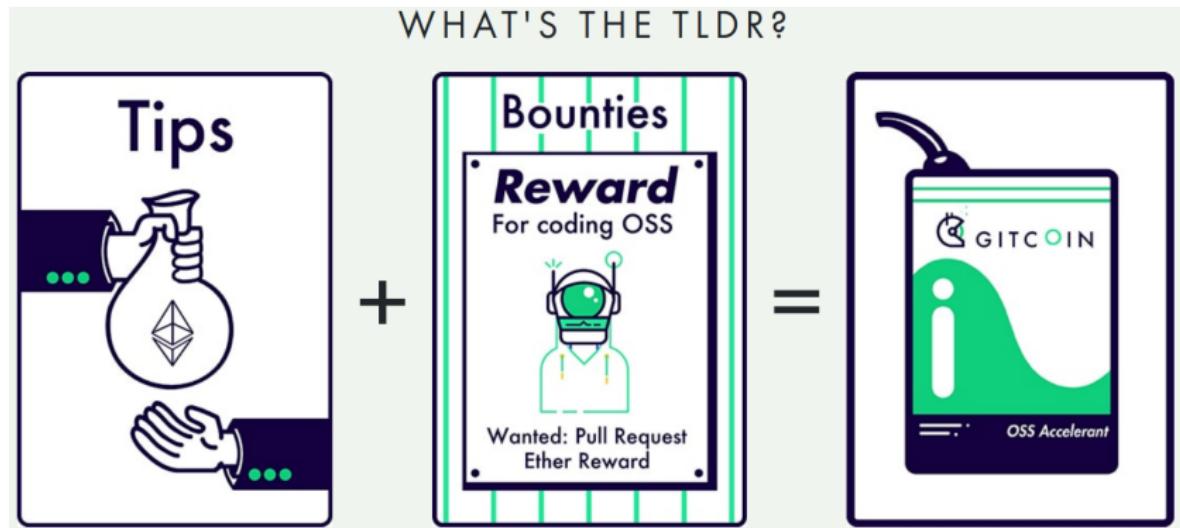


Figure: <https://gitcoin.co>



Thank you!

Email: marc.lijour@consensys.net

Twitter: [@marclijour](https://twitter.com/marclijour)



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