



Funding Free Blockchain Software projects

A novel way to fund the digital commons

By Marc Lijour

January 25, 2018

*The world-first Free/Libre Open Source and Crowdfunded R&Hub
focusing on Blockchain and related technologies*



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2 The Tragedy of the Commons

3 ColliderX: the world-first crowdfunded R&D Hub focusing on Blockchain and related technologies



Settling in the New World



©Wonderlane (2009) (CC-BY license)

Short History of Software

The birth of UNIX



Figure: Ken Thompson (sitting) and Dennis Ritchie at PDP-11

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"

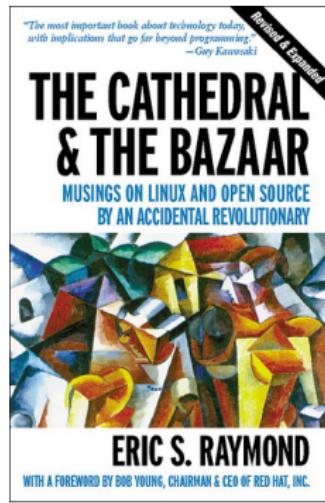
Freedom 3

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



The Cathedral & The Bazaar (2001)

A new way to develop complex bodies of software



- “scratching a developer’s personal itch”
- reuse don’t rewrite
- pass the baton
- so-called *Linus’s Law*: “given enough eyeballs, all bugs are shallow”

Free Software and Open Source Software

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

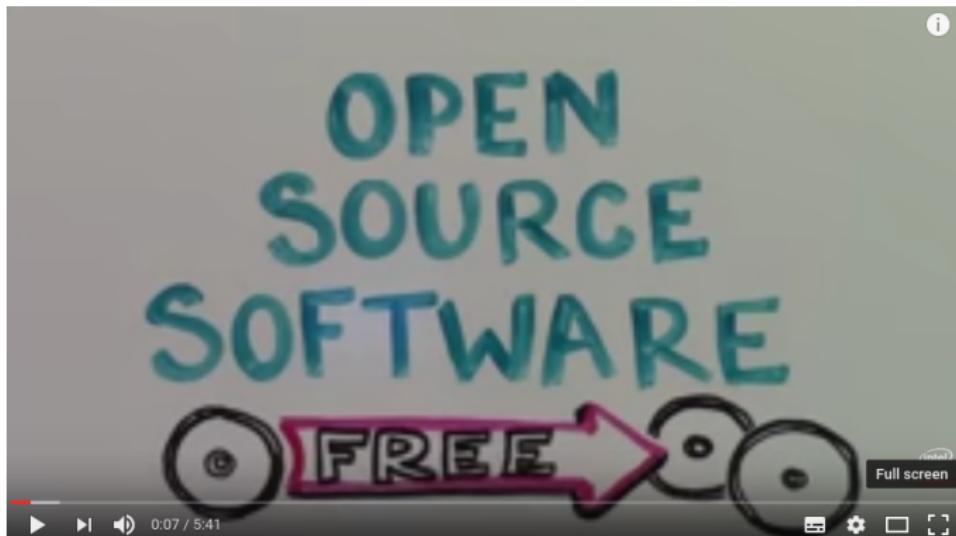


Figure: <https://www.youtube.com/watch?v=Tyd0FO0tko8>

©Intel Software (2014)



Open Source runs (almost) Everything

2015 was an inflection point

<https://www.blackducksoftware.com/future-of-open-source>

WIRED

Open Source Software Went Nuclear This Year

CADE METZ BUSINESS 12.27.15 7:00 AM

OPEN SOURCE SOFTWARE WENT NUCLEAR THIS YEAR

OVER THE NEXT 2 – 3 YEARS...

88% TO INCREASE OPEN SOURCE CONTRIBUTIONS **61%** EXPECT SECURITY OF OPEN SOURCE TO RISE

EXPECTED TO BE IMPACTED MOST:

Technology	Percentage
CLOUD COMPUTING	39%
BIG DATA	35%
OPERATING SYSTEMS	33%
INTERNET OF THINGS	31%

66% OF COMPANIES BUILD CUSTOMER SOFTWARE ON OPEN SOURCE

78% OF COMPANIES RUN ON OPEN SOURCE
(nearly double since 2010) &
64% PARTICIPATE IN OPEN SOURCE PROJECTS.
yet many still lack formal policies and processes to manage potential open source-related security, operational, and legal risks.

93% OPEN SOURCE USE INCREASED OR STAYED THE SAME

Trend	Percentage
UNSURE	5%
SAME	28%
INCREASED	65%
DECREASED	2%

BLACKDUCK NORTH BRIDGE

Blockchain is Open/Free by design

This screenshot shows the GitHub repository page for the Bitcoin Core integration/staging tree. The repository name is `bitcoin / bitcoin`. Key statistics displayed include 15,951 commits, 9 branches, 186 releases, 504 contributors, and an MIT license. The page also lists issues (574), pull requests (279), projects (7), and insights.

Bitcoin Core integration/staging tree <https://bitcoin.org/en/download>

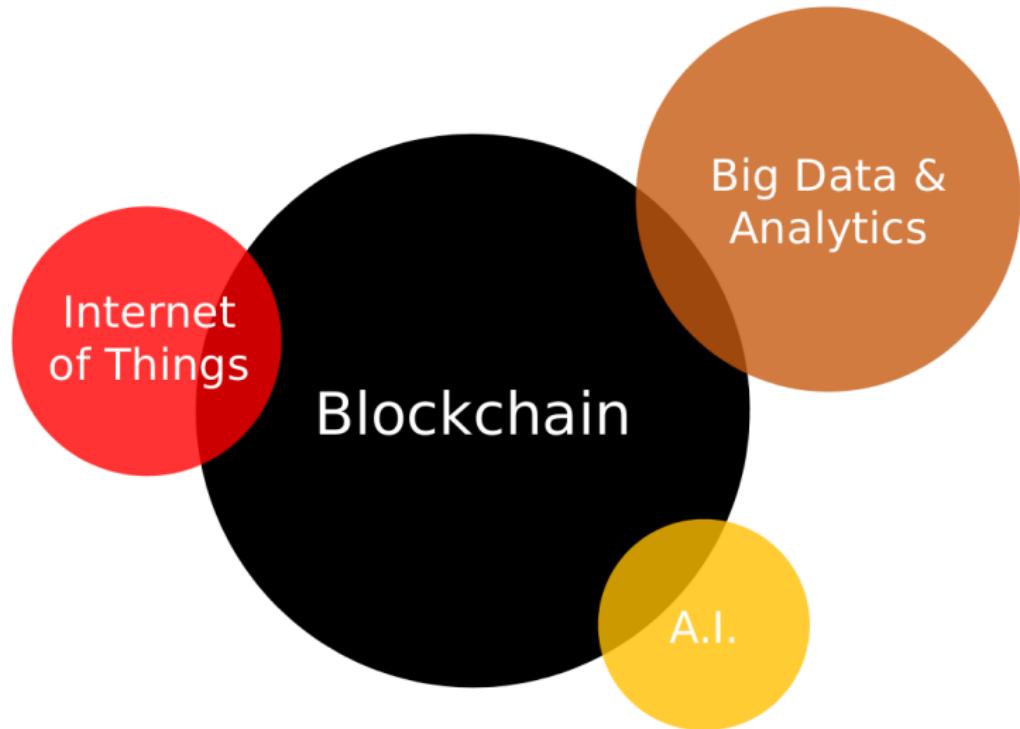
15,951 commits | 9 branches | 186 releases | 504 contributors | MIT



The Ethos of Blockchain is built on Openness and Decentralization



From IoT to Cloud and AI, and of course Blockchain



The Milenials



©State Farm (CC-BY license)

Marc Lijour

ColliderX

January 25, 2018

*20% of the world's economy
will be digital by 2020.*

—Accenture #techvision2016



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The Tragedy of the Commons



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Creative Chaos

Ryan Browne | [@Ryan_Browne_](#)

Published 10:18 AM ET Thu, 9 Nov 2017 | Updated 6:30 PM ET Thu, 9 Nov 2017



Just 8% of open-source blockchain projects are still active

6:29 PM ET Thu, 9 Nov 2017 | 00:35



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Starting your own Free/Libre Open Source Software project

Nicely summarized by Roberto Di Cosmo (2015)

Martin Michlmayr (former Debian project leader) studied successful FOSS projects (see <http://opensource.mit.edu>).

They all show a similar pattern of evolution.

Cathedral phase	Transition phase	Bazaar phase
Original "idea" Project Author Core developers Unix philosophy	"Interest" ⇒ Prototype <i>Modular design</i>	Distributed development environment Community Parallel perfective and corrective maintenance Peer reviews

The transition does not come for free!



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- Identify a need



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The transition does not come for free!

- Identify a need
- Build a prototype
- Grow a community
- Set up an ecosystem
 - (users, developers, architects, designers, service providers...)



Fragility and other issues

- Ability (and need) to run software to open archived files



Fragility and other issues

- Ability (and need) to run software to open archived files
- Deletion or lack of back-ups
(in 1999, 40% of companies had lost or thrown away the source code of their systems)



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- Project shutdown (e.g. Google Code circa 2014)



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- Repository taken hostage (e.g. Code Spaces)
- The half-life of an URL is about 4 years



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The universal software archive

<https://www.softwareheritage.org>

Software Heritage

preserves software source
code for present and future
generations



We are building the universal software archive



Collect
Preserve
Share

We **collect** and **preserve** software in source code form, because software embodies our technical and scientific knowledge and humanity cannot afford the risk of losing it.

Software is a precious part of our cultural heritage. We curate and make accessible all the software we collect, because only by **sharing** it we can guarantee its preservation in the very long term.

[Discover our mission](#)



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Nadia Eghbal's report (2016)

Roads and Bridges: The Unseen Labor Behind Our Digital Infrastructure

Roads and Bridges:

The Unseen Labor Behind
Our Digital Infrastructure

Marc Lijour

- Open Source Software runs core infrastructure services
- It is poorly funded (e.g. OpenSSL)
- Who should fund roads and bridges?



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Basic Tips to fund Free/Libre Open Source Software

see also Nadia Eghbal (2018)

- Individual Time



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- Community support (tee-shirt sales, ads, DVD burning, donations)



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- Individual Time
- Community support (tee-shirt sales, ads, DVD burning, donations)
- Corporate investment



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- Corporate investment
- Sales (licensing)



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Basic Tips to fund Free/Libre Open Source Software

see also Nadia Eghbal (2018)

- Individual Time
- Community support (tee-shirt sales, ads, DVD burning, donations)
- Corporate investment
- Sales (licensing)
- Large Donations and Grants



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ColliderX

<https://www.collider-x.org>

- World-first Open Source Crowdfunded R&D Hub focusing on Blockchain and related technologies (AI, IoT, ...)



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- World-first Open Source Crowdfunded R&D Hub focusing on Blockchain and related technologies (AI, IoT, ...)
- Building **the digital infrastructure of tomorrow**



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ColliderX

<https://www.collider-x.org>

- World-first Open Source Crowdfunded R&D Hub focusing on Blockchain and related technologies (AI, IoT, ...)
- Building **the digital infrastructure of tomorrow**
- Now building a Blockchain **Innovation Supercluster** in Canada



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ColliderX

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- World-first Open Source Crowdfunded R&D Hub focusing on Blockchain and related technologies (AI, IoT, ...)
- Building **the digital infrastructure of tomorrow**
- Now building a Blockchain **Innovation Supercluster** in Canada
- Open to all researchers/developers/tinkerers and backers in the world



How to engage with ColliderX?

- Backers
- Researchers/Developers



Thank you!

Email: marc@collider-x.org

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



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