FORKED TO DEATH: WHAT INTERNET GOVERNANCE CAN LEARN FROM BITCOIN

March 5th
MIT Bitcoin Expo 2016

Pindar Wong
Chairman
VeriFi (Hong Kong) Ltd.
pindar.wong@gmail.com
cc-by 4.0
Reflections and Thanks!

MIT Media Lab DCI
MIT Students
Phase 1 Underwriter
Phase 2 Platinum Sponsor

Programme Chairs
Jeremy Rubin
Neha Narula
What Internet Governance Can Learn from Bitcoin?

• 1) Careful Consideration of Externalizing Costs

• 2) Community Meritocracy – ‘Proof of Work’ Works
  • Community as Resilient from Internal/External Pressure as the Code

• 3) Faster than Light ‘Real-Time’ Media Audit ;)

• 4) Developing Immune System
Trustless Internet

The Joy of Tech

In the 1990's

ON THE INTERNET, NOBODY KNOWS YOU'RE A DOG.

Now

OUR METADATA ANALYSIS INDICATES THAT HE IS DEFINITELY A BROWN LAB.

HE LIVES WITH A WHITE AND BLACK SPOTTED BEAGLE-MIX, AND I SUSPECT THEY ARE HUMPING.

© 2013 Geek Culture, Nitrozac & Snaggy
Today’s Economist
Internet governance: We the networks
Internet Governance

“Internet governance is the development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet.”

- “Who Are You”?
- “What is the Problem”? 
Governance is the **Wrong Model**

- Ecosystem Governance -> Ecosystem Health
- What is a **Healthy Bitcoin Ecosystem**?
- Technically Scalable
- Economically Sustainable
- What is ‘Pollution’?
- What is ‘Normal’?
Internet Ecosystem Evolution

- IETF – Pervasive Monitoring Is an Attack
- https://cryptech.is/
- https://www.coreinfrastructure.org/
- Etc.

- SNOWDEN 2013 – NY Times
- DUAL_EC_DBRG
- Chinese Universities – HK Internet Exchange Point
- Etc.
Stimulus

Response

By DonkeyHotey [CC BY 2.0 (http://creativecommons.org/licenses/by/2.0)], via Wikimedia Commons
By "Kaizen-2" by Majo statt Senf - Created with Affinity Designer - Own work. Licensed under CC BY-SA 4.0 via Commons - https://commons.wikimedia.org/wiki/File:Kaizen-2.svg#/media/File:Kaizen-2.svg
Welcome to NCSA Mosaic, an Internet information browser and World Wide Web client. NCSA Mosaic was developed at the National Center for Supercomputing Applications at the University of Illinois in Urbana-Champaign. NCSA Mosaic software is copyrighted by The Board of Trustees of the University of Illinois (UI), and ownership remains with the UI.

Jan '97

The Software Development Group at NCSA has worked on NCSA Mosaic for nearly four years and we've learned a lot in the process. We are honored that we were able to help bring this technology to the masses and appreciated all the support and feedback we have received in return. However, the time has come for us to concentrate our limited resources in other areas of interest and development on Mosaic is complete.

All information about the Mosaic project is available from the homepages.

NCSA Mosaic Platforms:
- NCSA Mosaic for the X Window System
- NCSA Mosaic for the Apple Macintosh
- NCSA Mosaic for Microsoft Windows

Special Notices
- NCSA's VRML home page
- Non-Commercial Use of NCSA Mosaic Source Code
- Commercial licensing of Mosaic technology with Spyglass, Inc.
Is Bitcoin Another Internet?

**Externalizing Costs**

- Research Networks (NSFNET) 1995
  - Non-Profit
- CIX Association 1991
- April 30th 1995
- Commercial ISPs Making $$$
- Huge Culture Clash Drama – Cook Report on the Internet
Trip Down the Memory Bus

• 1987 USENET News Wars –
  • Great Renaming (Rick Adams)
    14 Character Naming Limitation Must be Unique Newsgroups
  • Big 7 (comp.*, misc.*, news.*, rec.*, soc.*, sci.*, talk.*) hierarchies
  • Alt.* (anarchists, lunatics and terrorists ;)
  • Hitchhikers Guide to the Internet – Ed Krol (RFC 1118)

• 1990’s US National Science Foundation
  • NSFNet (IBM, Merit, MCI) – Backbone Network 4000 institutions
  • 1992 US Congress gave NSF allow commercial traffic (Acceptable Use Policy)
  • 1993 Beginning Commercialization, Marc Andreessen (Mosaic,Netscape, a16z.com)
  • 1994 DNS – NSI (Network Solution Inc) – USD$50 per domain name
  • .edu, .com, .net., .mil, .org, .gov .int
  • 1998 gtld-mou -> ICANN
Examples Externalizing Costs of a Shared System

- BGP – Network Costs
- EMAIL – SPAM
- IPv4 vs IPv6
- Community Equity at Time of Crisis (DNS Root Zone)

Externalizing Costs of a Shared System
Internet Governance Wrong Model

- Transparency, Sustainability, Scalability
- Not just the Technology – Community

- Ecosystem Sustainability
- UTXO Expansion
- Minimizing and Externalization of Costs
  - (Subsidy, UTXO set, SigOps, Bandwidth)

- NOT Governance but ‘Health’
Role of Universities

• Neutral Platform – ‘Academia Scales Better’ - Arvind
• Societal Trust Anchor:
  • Move From Analog -> Digital Trust
  • Early Warning
• Anchoring the Bitcoin Network
  • E.g. Operating Fully Validating Note on the Bitcoin Network
• Empowering Students
  • E.g. MIT Bitcoin Project
• Documentation and Deliberation
• Ethics of Research in Cryptocurrencies
• Patent Non-Aggression Pool: Open Invention Model
Current List* of Participants to BSafe.Network

- **United States**
  - MIT
  - Boston University
  - UC Irvine
  - University of Maryland

- **Europe**
  - TU Darumstadt, Germany
  - University of Cambridge, UK
  - New Castle University, UK
  - KULeuven, Belgium
  - Hebrew University of Jerusalem, Israel

- **Asia**
  - Hong Kong University of Science and Technology, Hong Kong
  - Toho University, Japan
  - Tokyo University of Technology, Japan
  - Meiji University, Japan

- **Africa**
  - March 6th Ghana Independence Day
  - University of Ghana, Kwame Nkrumah University of Science and Technology, and University of Cape Coast

*Not Fully Confirmed
Blockchain Research Network and Decentralized Academic Platform (Shin’ichiro Matsuo and I)

- Decentralized Academic Platform
- Manage research fundings, papers, discussions, evaluations and patents over blockchain
- Papers, Patents, Discussions, Research Funding, Reward to discussion

- Decentralized Reviewing and open collaboration
- Prevent research misconduct
- Incentive to build the research network

- Neutral Platform
- Trust Anchor of Bitcoin network
- Expand # of nodes from 6941 to # of univ. (with Neutrality)
- Testbed for academic research
What Internet Governance Can Learn from Bitcoin?

1) Careful Consideration of Externalizing Costs

2) Community Meritocracy – ‘Proof of Work’ Works
   - Community as Resilient from Internal/External Pressure as the Code

3) Faster than Light ‘Real-Time’ Media Audit ;)

4) Developing Immune System