

# Technology challenges toward maturing Blockchain

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# About me



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- Director's Liaison for Financial Cryptography at MIT Media Lab
- Project Professor at Keio University and Research Fellow at the University of Tokyo
- Co-Founder of Bsafe.network
- Program committee and editor: Scaling Bitcoin, IEEE, ACM conferences, Ledger Journal
- Ph.D. from Tokyo Institute of Technology



# Source of technology related immaturity

## Unproven technology

Security  
Scalability  
Trust model

## Community Risk and Quality assurance

Need healthy community and ecosystem

## Lack of evaluation criteria toward technological due-diligence

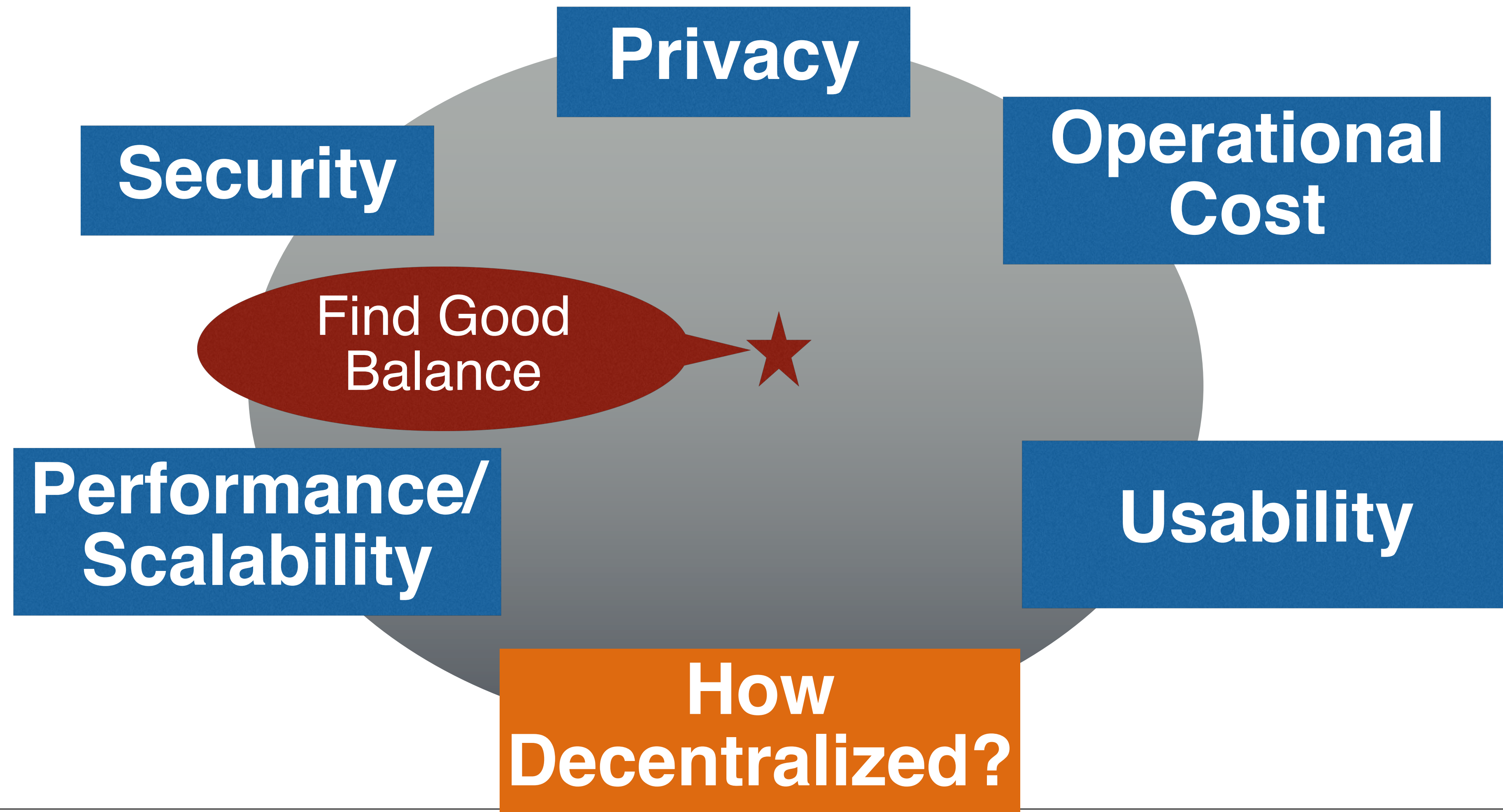
Standardization

## Gap between

- What original Satoshi paper proposes and
- Expectation to Blockchain technology and its application



# Technology Trade-offs in Blockchain technology



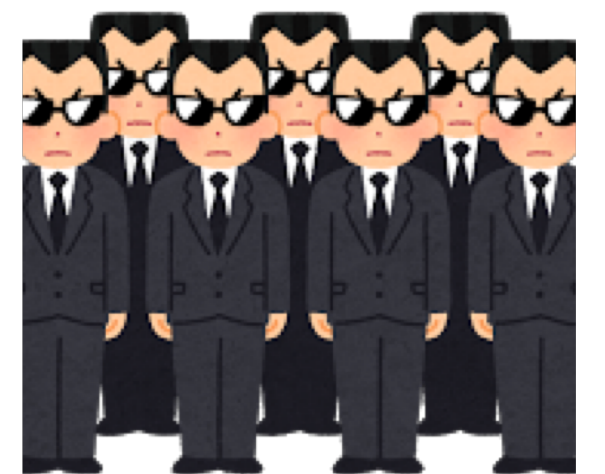
# Needs for multi-disciplinary research

**The Security of Bitcoin/Cryptocurrency/Public Blockchain relies not only on technology but also on incentive design.**

**Some flaws in the current design of Bitcoin ecosystem are the cause of debates and chaos.**



Games in  
blockchain  
ecosystem



# Competition among Blockchain technologies/services

## Common to Internet-like innovation

Fail Fast

Horizontal and Vertical



## Difference against Internet-like innovation

Experiment using consumers money/asset

Lack of Due-diligence: Need to have good way to realize it

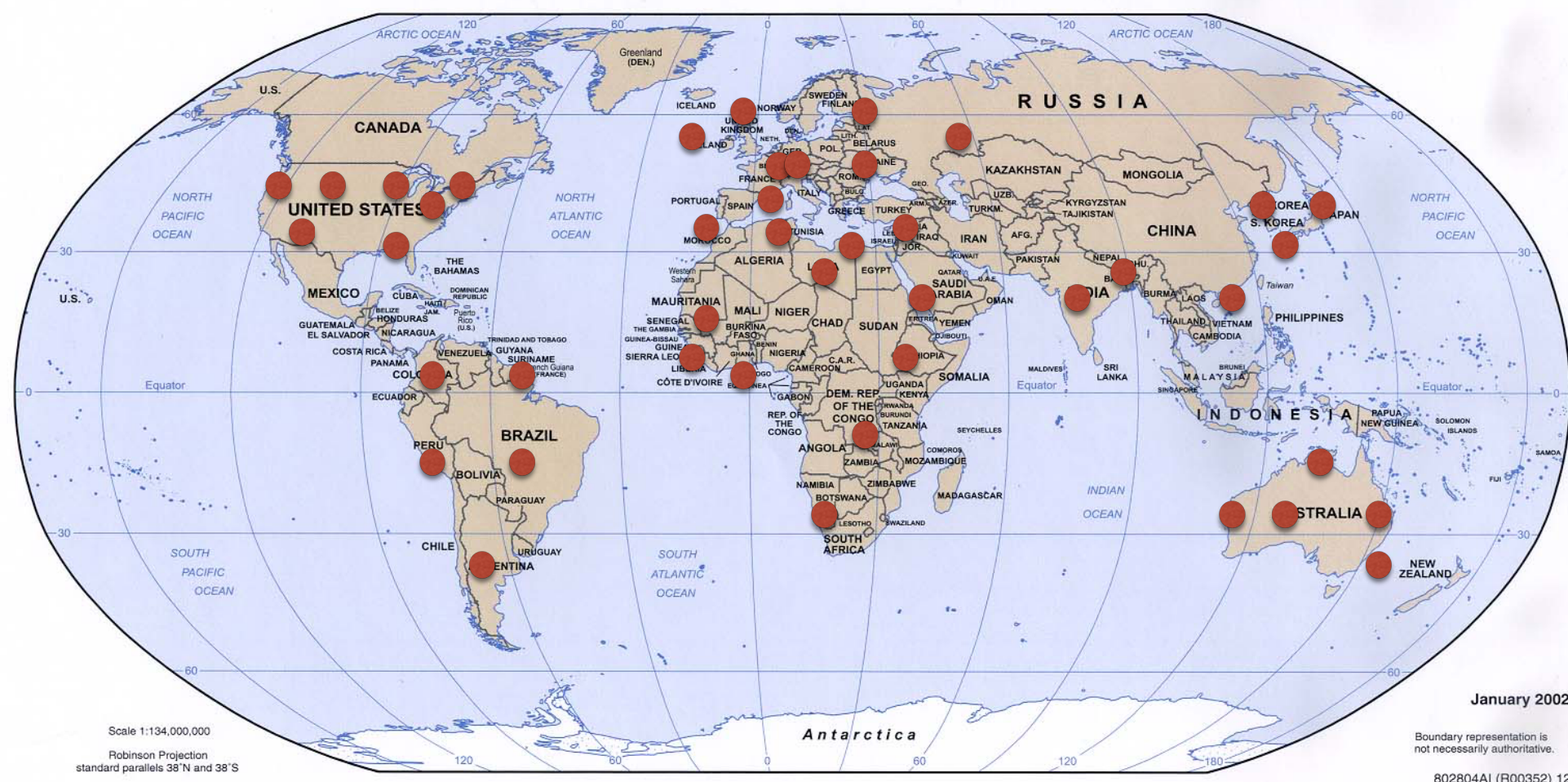
Ecosystem for innovation: migration among blockchain projects



# Bsafe.network: Plays the Same Role as NSFNet and BSD



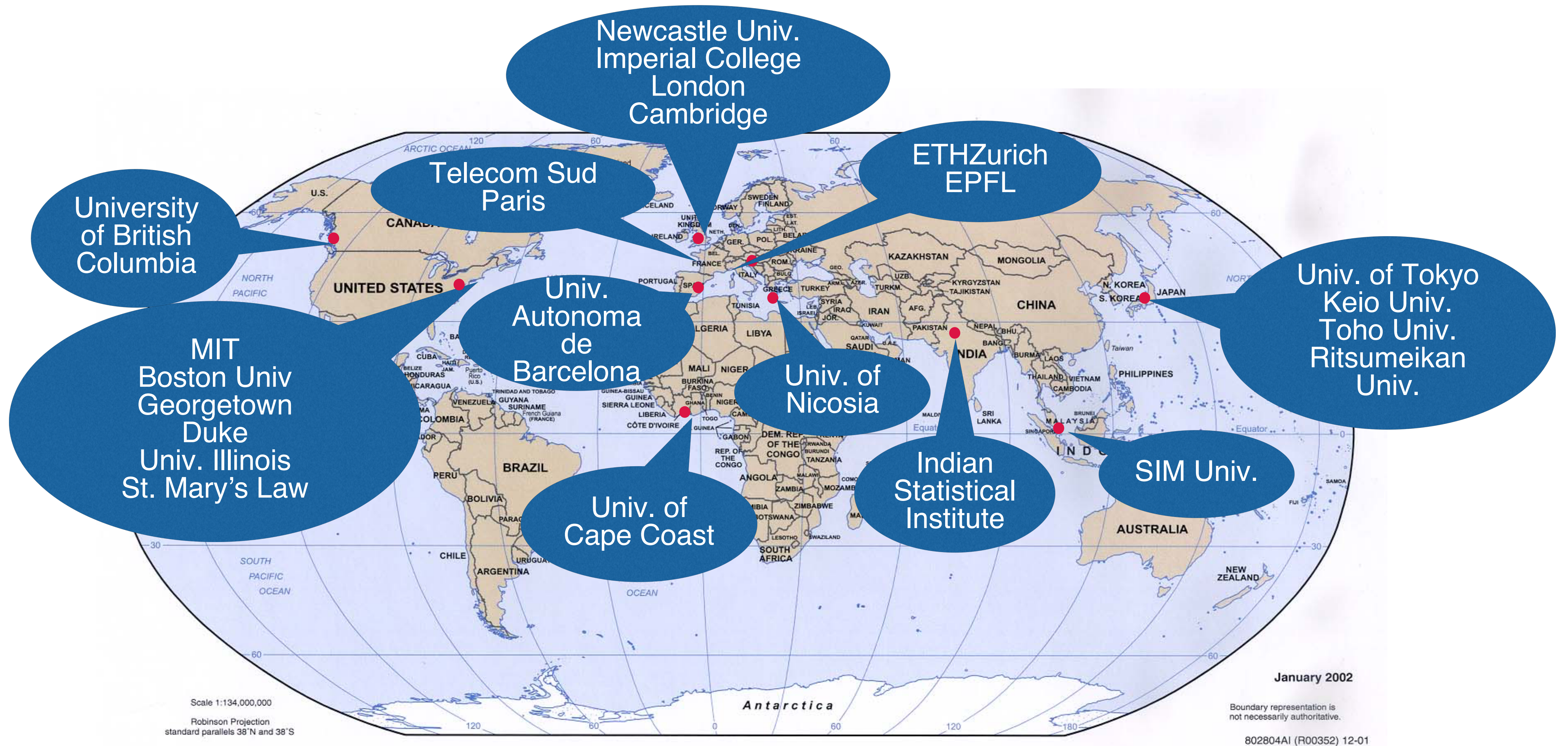
- A **neutral, stable** and **sustainable** research test network for Blockchain technology by international universities.
- Founded by me and Pindar Wong in March 2016. Each university becomes a blockchain node.
- Research on Blockchain and its applications
  - Not limited to Security. All aspects will be researched.



- Neutral platform
- de-anchored trust of Blockchain network
- More nodes (with Neutrality)
- Testbed for academic research



# 23 International Universities Already Join and We Add More...





# BASE (Blockchain Academic Synergized Environment) Alliance

Open and neutral alliance of Industry-University cooperation

Joint research, development, experiment

Initiated by the University of Tokyo and Keio University

Launch: July 24, 2017

