What is the policy goal or fear you're addressing?

**Fear:** Struggle to maintain network measurements efforts both for wired and wireless domains

**Fear:** Internet going dark to 3rd party measurements

**Fear:** Google/Akamai/ISP/NSF only measurements
“We posit that successful architectures will have to take responsibility for the economic systems that arise from their engineering design. This implies not just getting the technical details right, but also deliberately designing the engineered system so that it has desirable economic properties.”
Hoped for, not designed for....
(funding, adoption, use, longevity)
Currently rely upon cooperation, corporations, or confiscation (i.e. tax supported)

- CAIDA Ark [14]
- Dasu [26]
- Scriptroute [29]
- BISmark [30]
- OONI [25]
- Netalyzr [19]
- PEERING [27]
- FCC’s MBA [2]
- ICLab [1]
- MITATE [17]
- CAIDA Periscope [16]
There exists a community designing next generation decentralized network systems that does consider and critique (in sophisticated ways):

- incentives, roles, and economic responses of different participants
- governance and evolution of the decentralized systems
- adoption incentives (early adopters, late adopters)
- creative funding models

Resulting in hundreds of millions of dollars of investment and impressive adoption
MIT Technology Review
Blockchain
The future is here
Proof-of-*

- Work
- Stake
- Storage
- Computation
- Science
- etc
Proof-of-measurement?
Apply tools from the crypto bookshelf at three levels:

1. **Measurement validity**
   - Proof of measurement correctness (full or probabilistic proofs)
   - Cryptographic proof of vantage point
   - Trusted execution environments

2. **Crypto financial incentives to adopt and run measurements for the long term**

3. **Smart contracts that involve network measurements** (network SLAs or long term measurement studies)
Technically concrete ideas for pieces of this story

• Decentralized version of some of the FCC MBA tests
• Distributed network telescope
• Adoption incentives
• More...
Recommendations

- Ignore hype, but don’t dismiss cryptonetworks
- Invite folks from this community to a future WIE
- Design for, don’t hope for... funding, adoption, use, and longevity of measurement infrastructures