Open source hardware + Mobile devices = Mass science participation

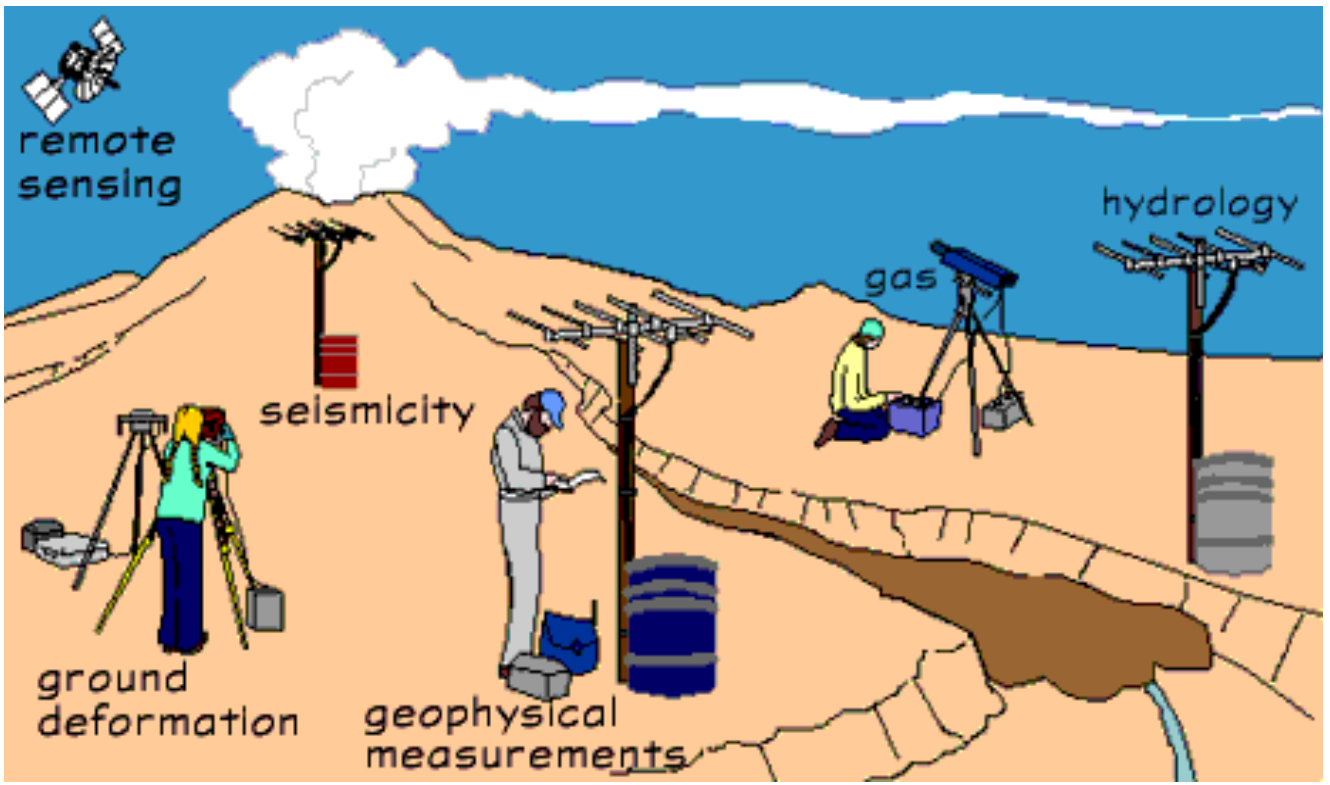
or

How to make a Tri-corder out of a disposal hazard

Scientific data collection is non trivial

Currently its:

- Expensive
- Time consuming
- Dangerous at times to do
- Damaging at times when a human does it

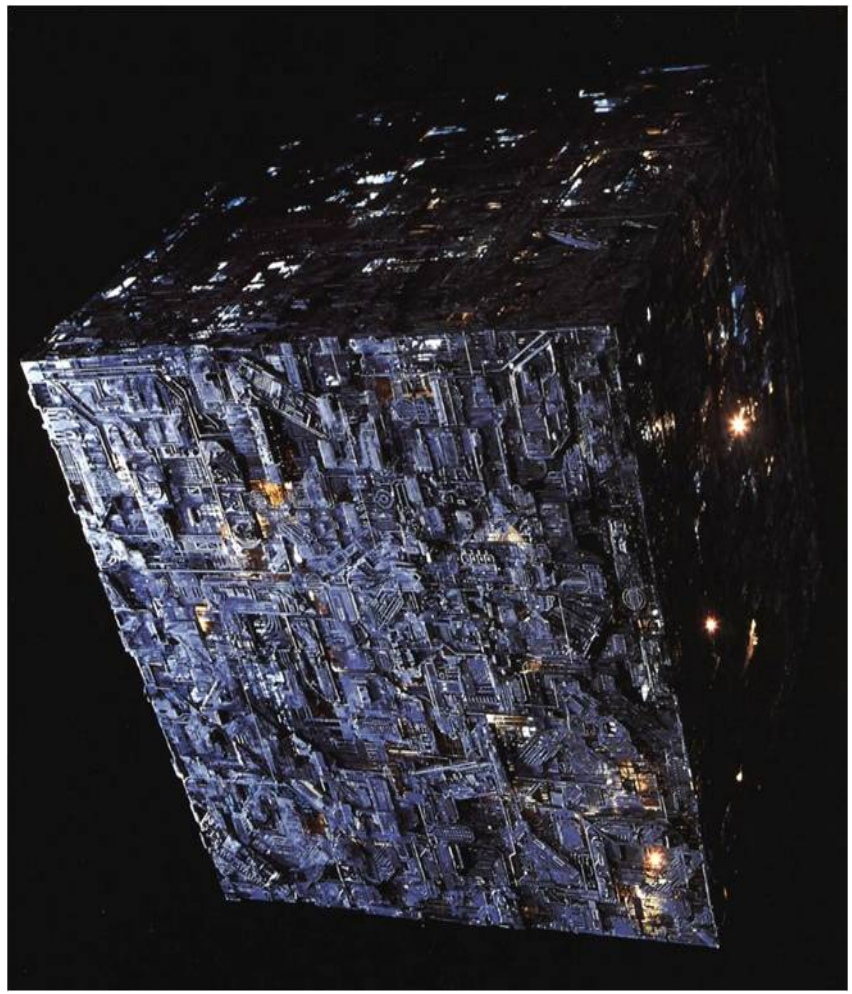


Science is (often) a lonely business

- Few specialists per niche with siloed information

vs.

- Hive behavior: goal oriented & efficient
- Sharing of resources
- Transparency and mass participation = quality control



Commercial hardware catalyst

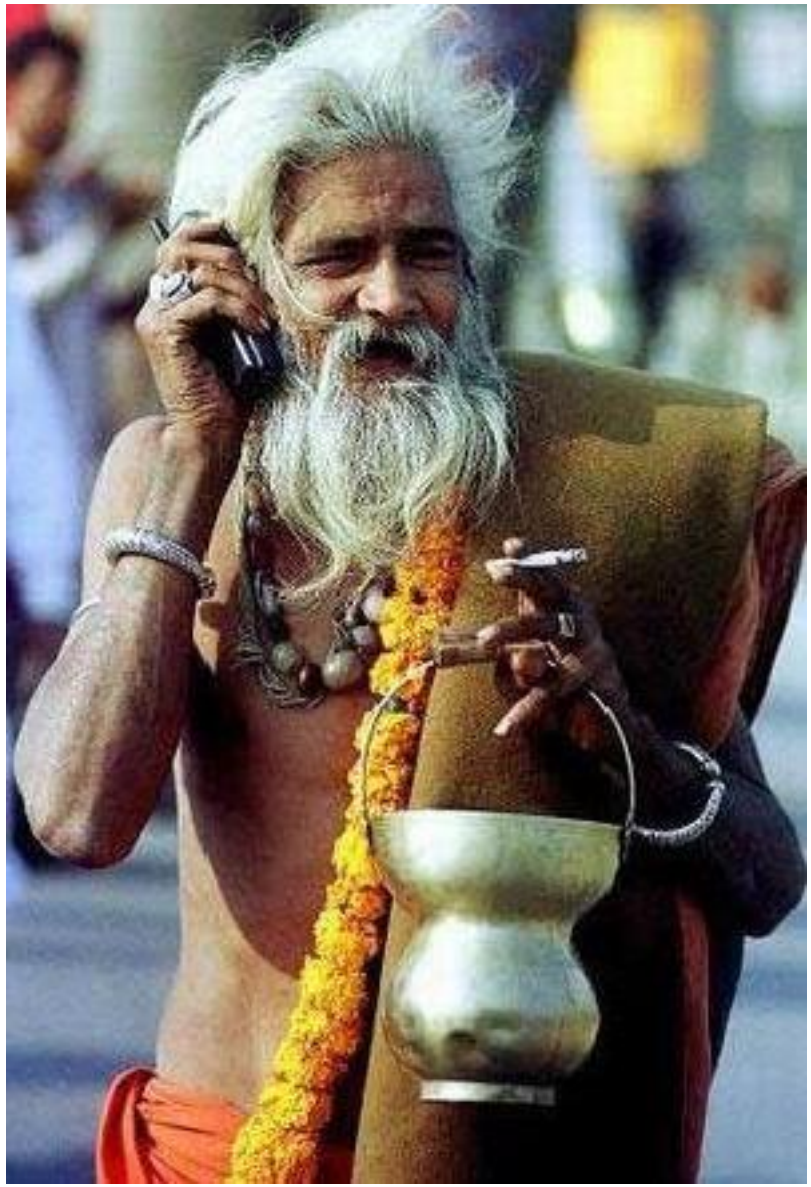
- (mobile) computing devices

  connected to

- (electronic) scientific sensors

Mobile computing is ubiquitous

- 2+ billion users
- Mature platform
- Accessible
- Great upcycling opportunity

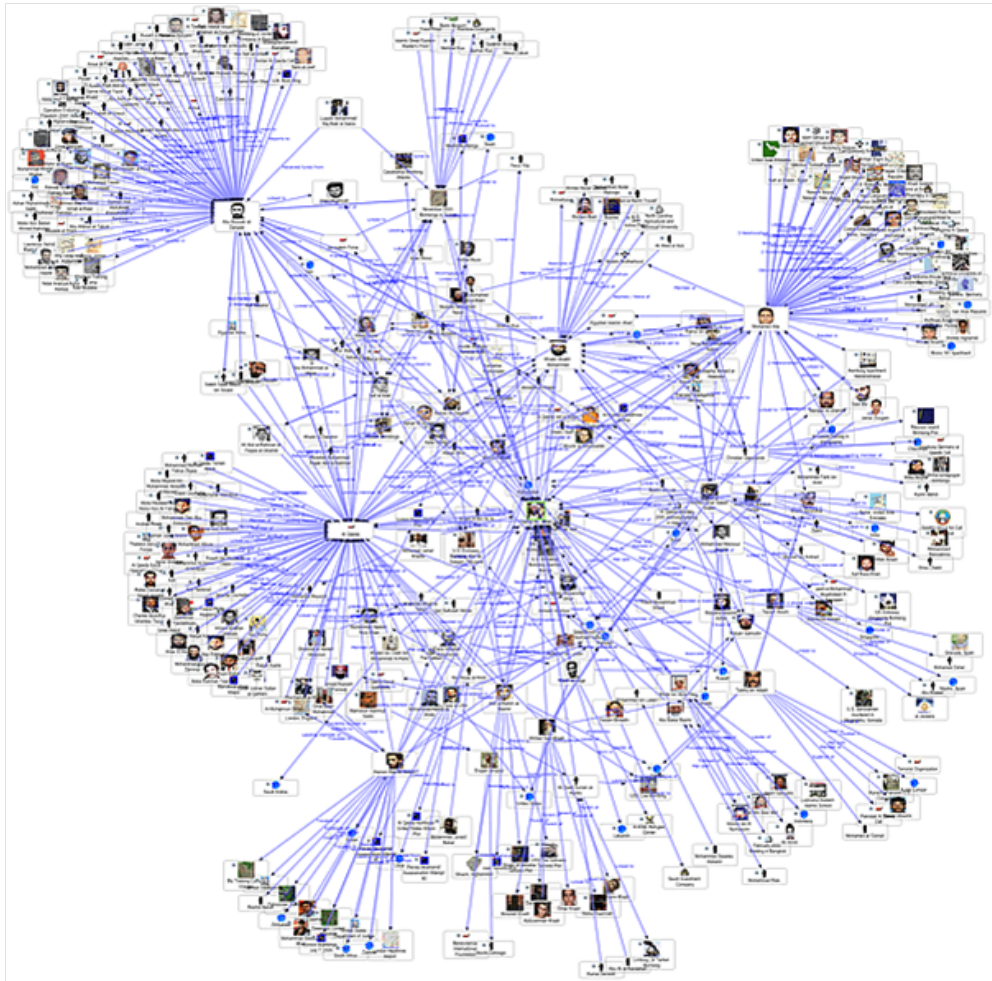


Scientific data sensor revolution

- Data collection used to be manual
- Custom and expensive for now
- Ready for economies of scale

Something to twitter about

- Leverage existing social platforms
- Crowd sourcing enabled scientific research
- Rare and remote data acquisition and sharing



Approaching universal participation in science

- Lower cost for equipment as much 100+ times
- Use tools that people already use
- Integrate with internet technology and techniques
- A vast increase in orders of magnitude of data and people analyzing it

Some useful models for open science

- Crowd sourcing equipment development
- Open sourcing data and techniques
- Integrating international scientific and network communications protocols
- Real-time data sharing

What we are doing to help...

Phinominal Video