“When written in Chinese, the word 'crisis' is composed of two characters. One represents danger and the other represents opportunity.”

John F. Kennedy
April 12, 1959
A Quick Pre-History -- 1990s

- Food politics & local media
  - Common Ground Food Co-Op
  - WEFT 90.1 FM
A Quick Pre-History -- 2000s

- Alternative media and wireless
  - Urbana-Champaign Independent Media Center
  - Global Indymedia
  - CUWiN Foundation
  - Wireless Future Program
A Quick Pre-History -- 2010s

• Wireless and open technology
  ➢ Commotion Wireless
  ➢ Measurement Lab
  ➢ Open Technology Institute
  ➢ and now... X-Lab
DC Today:

Congressional Gridlock:
Legislation Enacted As a Percentage of Legislation Introduced
80th - 112th Congresses
DC Today:

WE ARE BANNING THE PHRASE "MENTALLY RETARDED."

AND REPLACING IT WITH THE TERM "CONGRESS."

IS STEPHEN COBART HERE YET?
What this looks like in real life...

Senator Dianne Feinstein, Chair of Senate Intelligence Committee, the congressional oversight committee of US surveillance activities, publicly responding to Edward Snowden’s claims about some of NSA’s capabilities:

“I am not a high-tech techie, but I have been told that is not possible.”
Open Technology Institute

- Total lack of technological expertise in DC.
- Incredible need for technological acumen.
- OTI created to hold the line on today’s tech-policy battles.
- Generated multiple forward-thinking projects:
  - MeasurementLab.net
  - CommotionWireless.net
Commotion Wireless
Traditional ‘Hub & Spoke’
- Lack of competition
  High costs & low speed.
- Central network hub
  More chances of failure.
- Uneven implementation
  Many areas with no or very expensive coverage.

Commotion ‘Mesh Network’
- Community owned & open source
  Lower cost & faster local speeds.
- Decentralized
  More resilient. Easier to expand.
- Broader coverage
  Locally deployed and managed. Offers locally-relevant applications.
Commotion...

- **Interconnects users** through existing devices, without having to route through centralized infrastructure.

- **Shares bandwidth** throughout a Commotion network if any device on the system is connected to the Internet.

- **Creates an open platform** where local services and applications can be made available to network participants.

- **Increases affordability** by using readily available, off-the-shelf gear and handsets, slashing both deployment and operating costs.

- **Helps protect user privacy** and is more resilient against surveillance than traditional telecommunications infrastructure.
X-Lab: A Radical Geek Vanguard
X-Lab Activities

- The “Future of War” Lab: Addresses technological drivers of warfare and the enemies we face that are erasing the boundaries between traditional notions of “war” and “peace.”
X-Lab Activities

- **Commotion Tech Lab**: Create a for-profit entity to provide long-term sustainable funding for FOSS R&D and help ensure free, safe communications is available to everyone on the planet.
X-Lab Activities

- The Circumvention Tech Lab: A one-stop incubator for the development of new circumvention technologies.

**Circumvention Tech Ecosystem**

1. Need Identifiers  
   - NGOs on the ground
2. Tool Creators  
   - e.g. Open/TP
3. Code Auditors  
   - e.g. RFA
4. Product Certifiers  
   - Open space for X-Lab to fill
5. Product Distributor  
   - e.g. Tactical Tech
6. Legal Support  
   - e.g. EFF or ACLU
X-Lab Activities

- **PrivWare Lab**: Supports technologies and business models to enable users to maintain control and ownership of their most intimate data and not be subject to an increasingly panoptic “Internet of Things.”
X-Lab Activities

- **Distributed Production Lab:** Analyzes and responds to the challenges posed by new additive manufacturing technologies that are already beginning to disrupt many facets of the traditional manufacturing system.

Additive manufacturing could reduce energy use by **50 percent** and reduces material costs by up to **90 percent** compared to traditional manufacturing.
X-Lab Activities

● “Smart” Infrastructure Policy Lab: Rethinks urban planning to break down the silos between areas like intelligent transportation and smart microgrids to take advantage of the synergies between these sectors.
X-Lab: Causing a Commotion
Building Alternative Infrastructure

- Don’t assume Wi-Fi!
Building Alternative Infrastructure

● Don’t assume Wi-Fi!

● TV White Space is the shot across the bow.
Building Alternative Infrastructure

- Don’t assume Wi-Fi!
- TV White Space is the shot across the bow.
- Software Defined & Cognitive Radio:
  GnuRadio & Ettus Research
  Serval, OpenBTS, OsmoCom, Fairwaves, & etc.
Building Alternative Infrastructure

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● Commotion + Open Stack Integration = Awesome.
Building Alternative Infrastructure

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- Commotion + Open Stack Integration = Awesome.
- Add circumvention (software) technology = Super-Awesome.
Building Alternative Infrastructure

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● Add circumvention (software) technology = Super-Awesome.

● Add open hardware specs + participatory democracy tools + microgrids + “communications matter compiler” = X-Lab.
Get Involved & Follow Up:

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