

# **Cooperative Measurement and Modeling of Open Networked Systems (COMMONS)**

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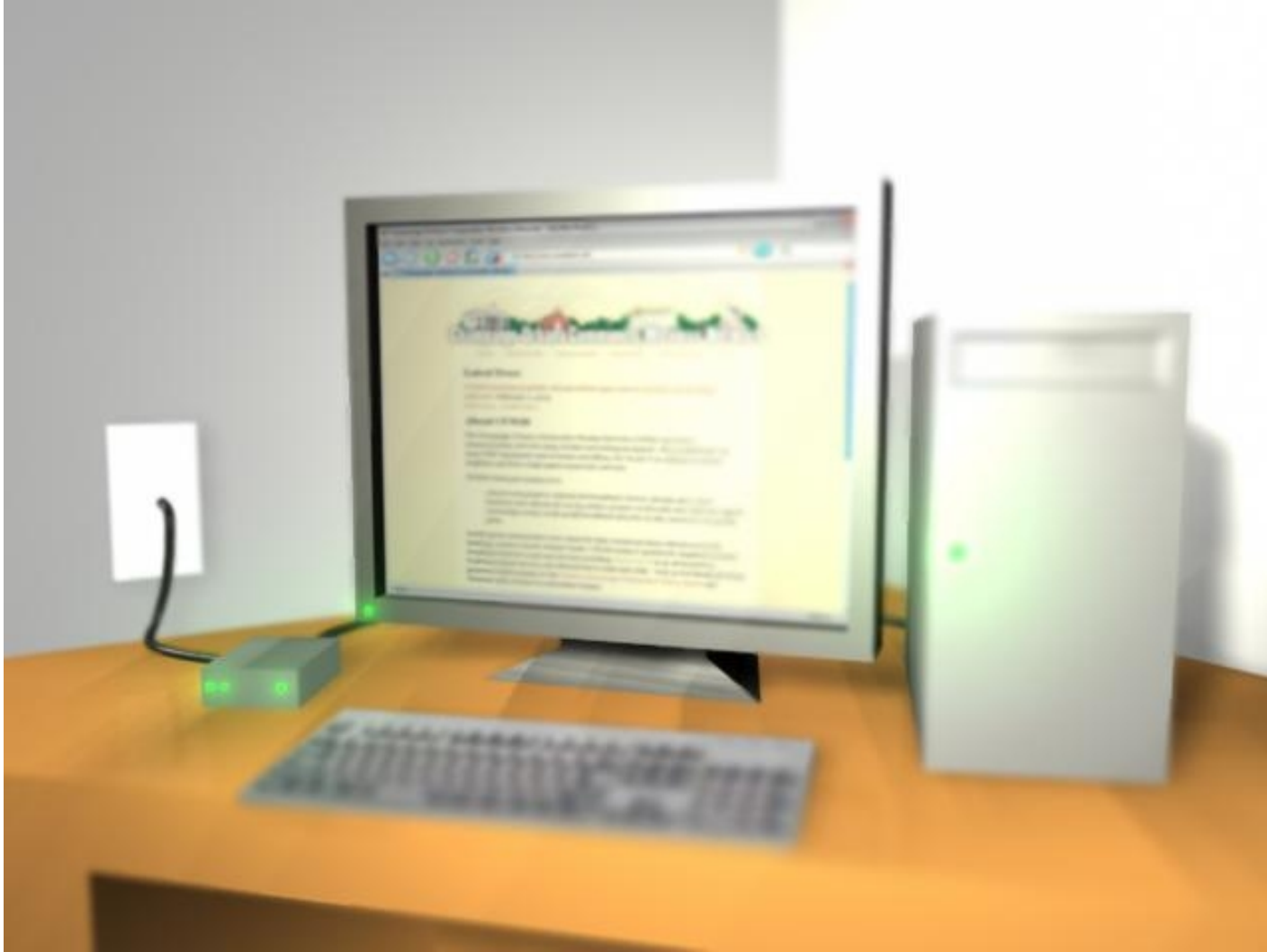
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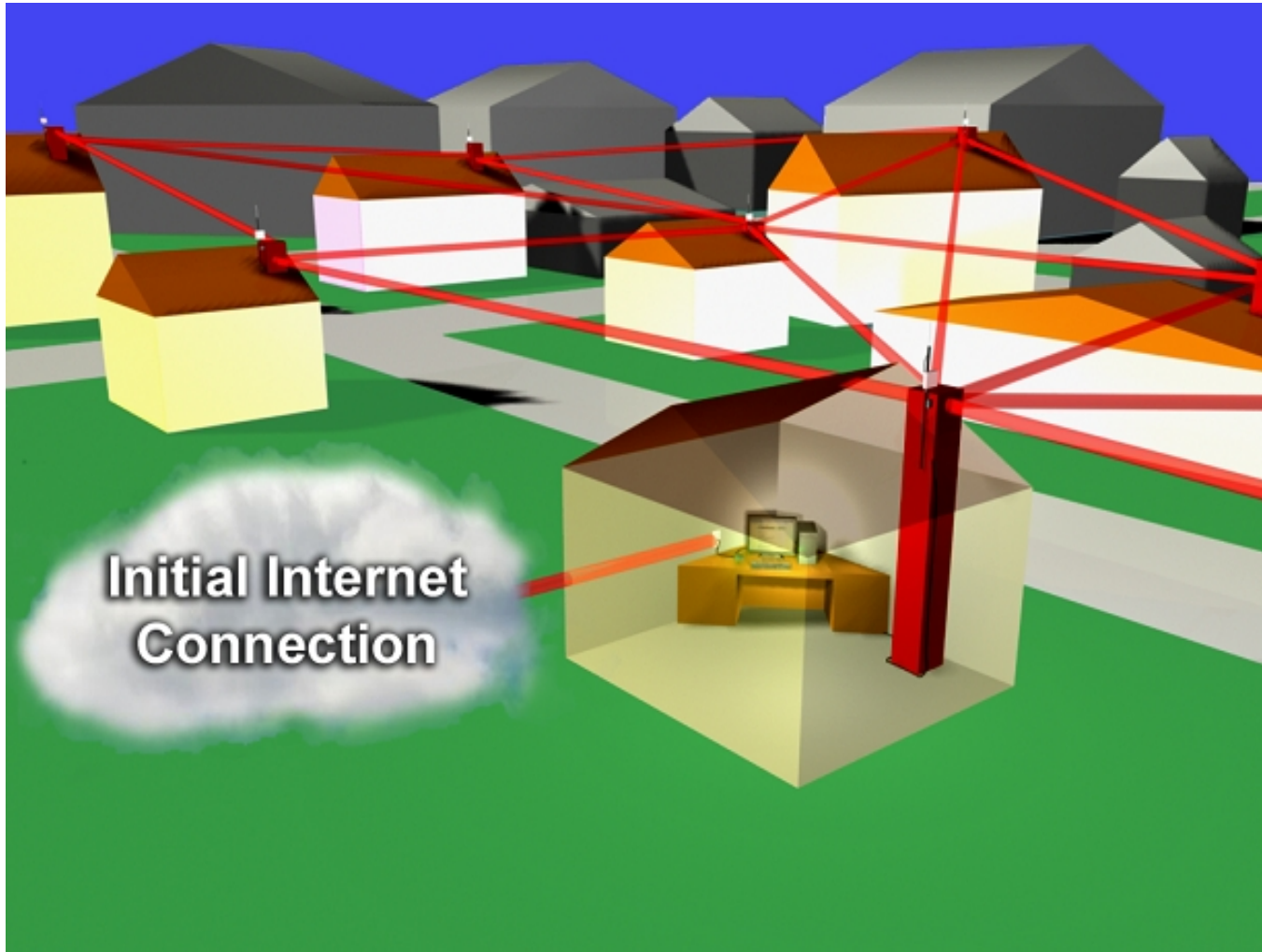
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# Home Network



Graphic Credit: Pat Bergschneider

# Local Network



Graphic Credit: Pat Bergschneider

# Projected Growth of US Municipal Wireless Market (in millions)\*

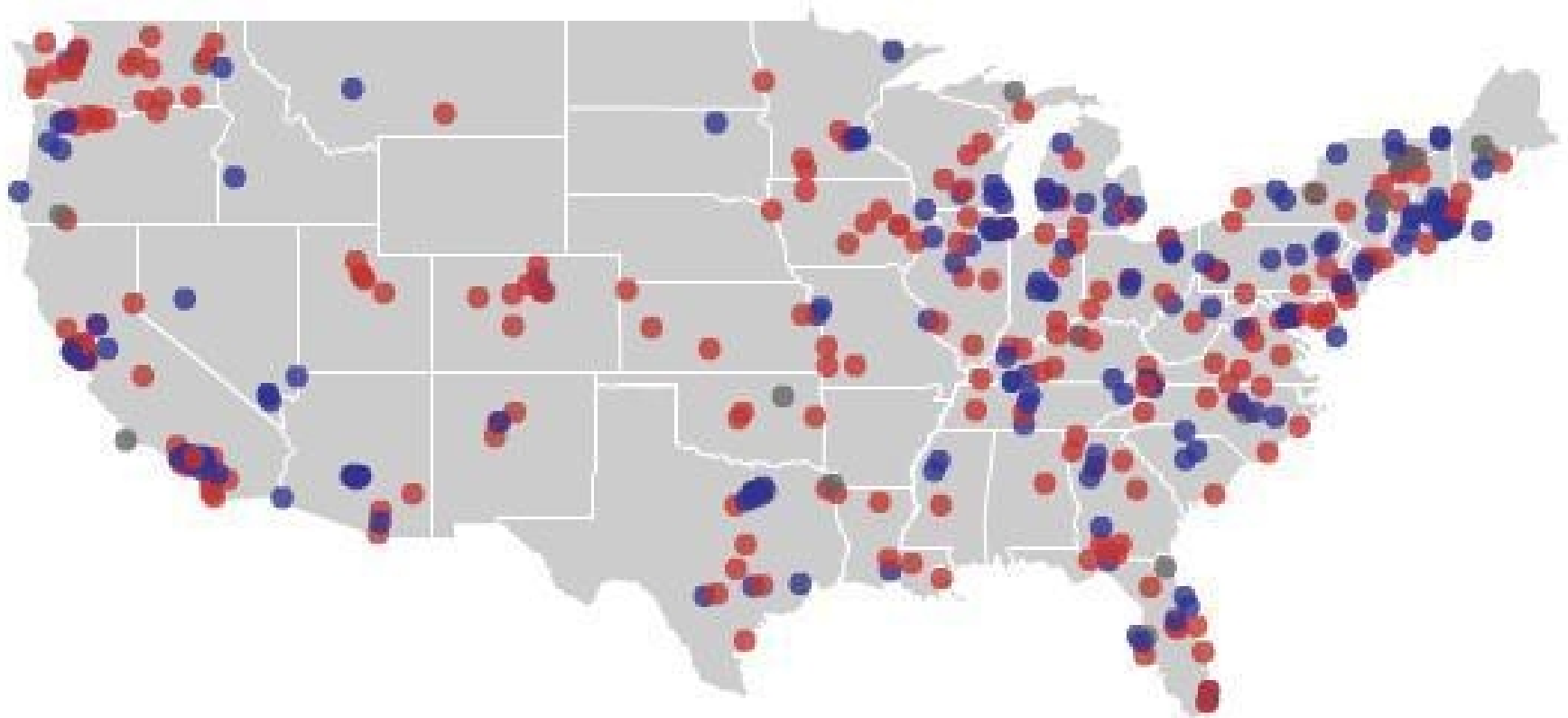
- 2004 -- \$47.5
- 2005 -- \$116.9 (147% YTY Growth Rate)
- 2006 -- \$235.5 (102% YTY Growth Rate)
- 2007 -- \$459.6 (95% YTY Growth Rate)
- 2008 -- \$941.0 (105% YTY Growth Rate)
- 2009 -- \$1,757.5 (87% YTY Growth Rate)

\* Source MuniWireless.com 2006 Municipal Wireless State of the Market Report

# Community Networks Inside the US

## Community Internet Across America

*Organized By Network Status*



Graphic Credit: Free Press

# Proposal

## **Cooperative Measurement and Modeling of Open-Networked Systems (COMMONS):**

- **Experimentation** with different architectures & business models.
- Use strengths of **cooperation** to overcome current Internet service provision shortcomings.
- **Collaboration** offers backbone transit in exchange for privacy-respecting, participant-defined data-collection for use by network researchers and scientists.

# Economic Imperatives

1 Mbps symmetric costs:

- \$10/month in San Francisco
- \$80-90/month in Chicago
- \$320/month in Urbana
- \$1300/month in Greenup
  
- Peering ratio costs.

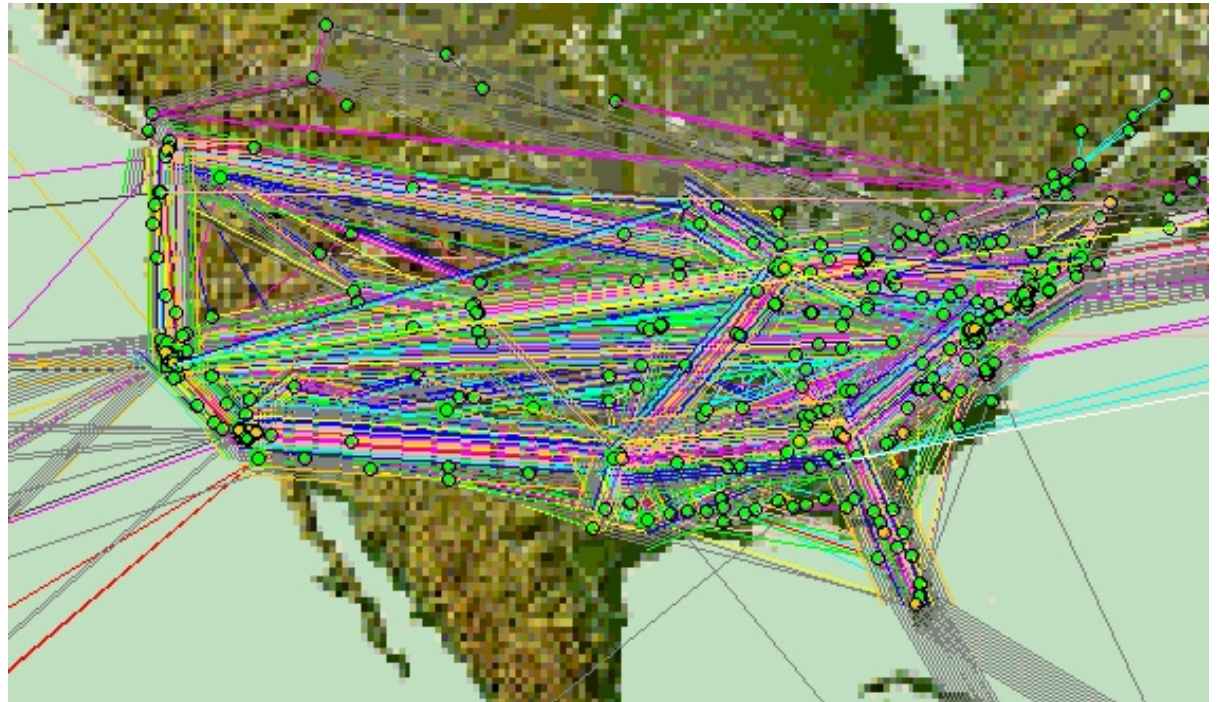
# The “Edge of the Broadband World”



- Cumberland County, Illinois
- 1532 Residents
- 692 Houses, 393 Families
- North of Hidalgo
- East of Neoga

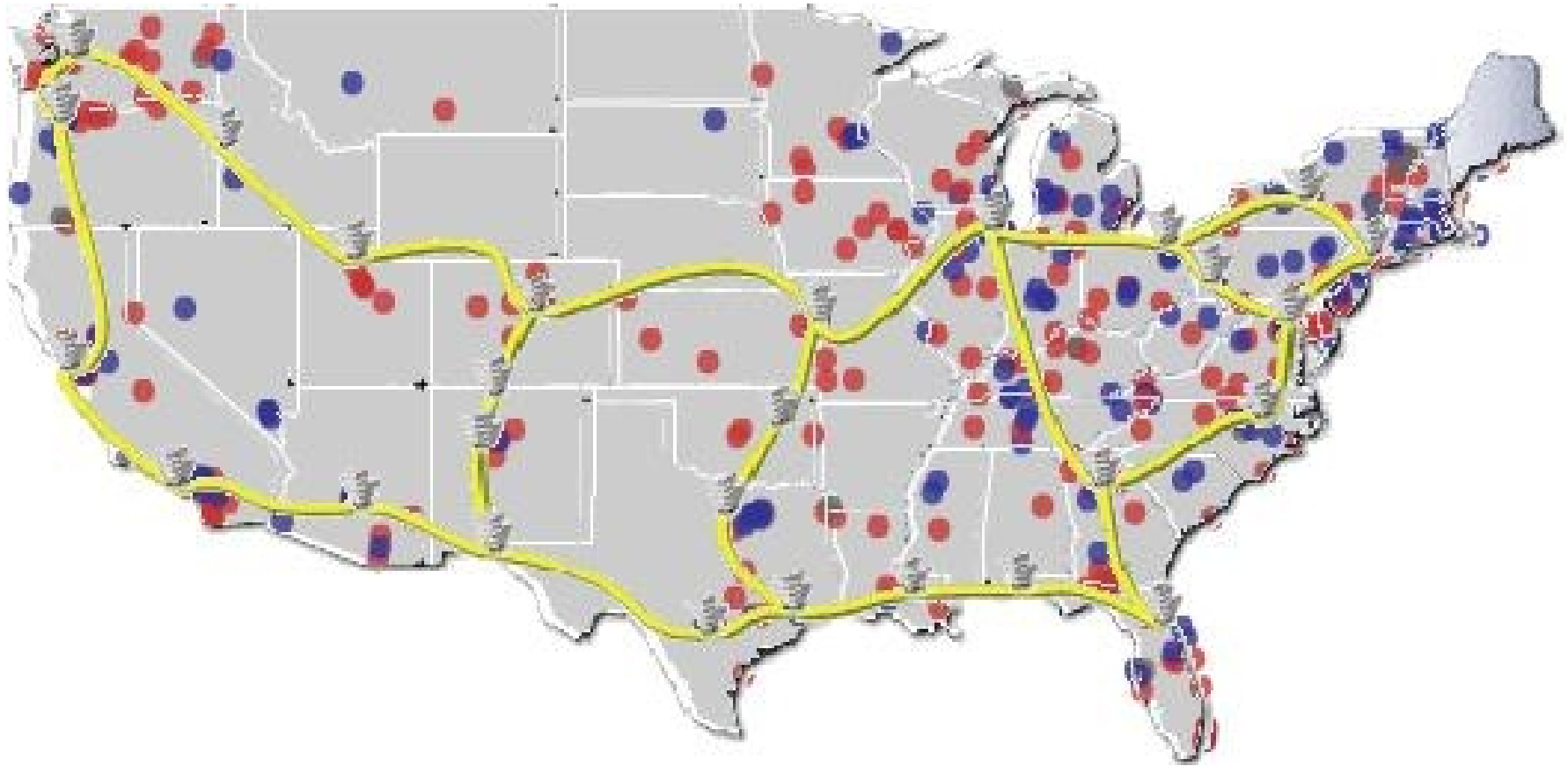
# The US Broadband “Backbone”

- Military
- Private Corporations
- Educational Institutions
- Not-for-profits
- States
- Cooperatives



Graphic Credit: CAIDA

# NLR-Based Peered Network



Graphic Credit: Free Press/NLR

# The Illinois Century Network



- 4,911 K-12 Schools
  - 322 Colleges & Universities
  - 492 Libraries & Museums
  - 67 Healthcare Facilities
  - 2,092 Municipal Governments
  - 131 “Others”
- 8,015 Clients (Jan '07)

Graphic Credit: Illinois Century Network

# Immediate Problems Solved:

- Alleviates commercial sector of so-called “**impossibly low margin customers**”.
- Secures **First Amendment rights** of free speech and expression.
- Provides emerging community networks with a **level playing field**.
- Gives science a chance – creates a **resource for network research** for the public good.

# More Information

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