

# Network Separation: Mission Imprudent

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*Network Separation: Models, Economics,  
and Regulatory Implications*  
CITI Workshop  
Columbia University, New York  
26-March-2009



# Overview of presentation

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- **Theory** behind network separation
- **Requirements** for different flavors of network separation
- **History** of telecom network separation in the U.S. and post-mortem of its effects
- **Lessons** for the future

# Theory

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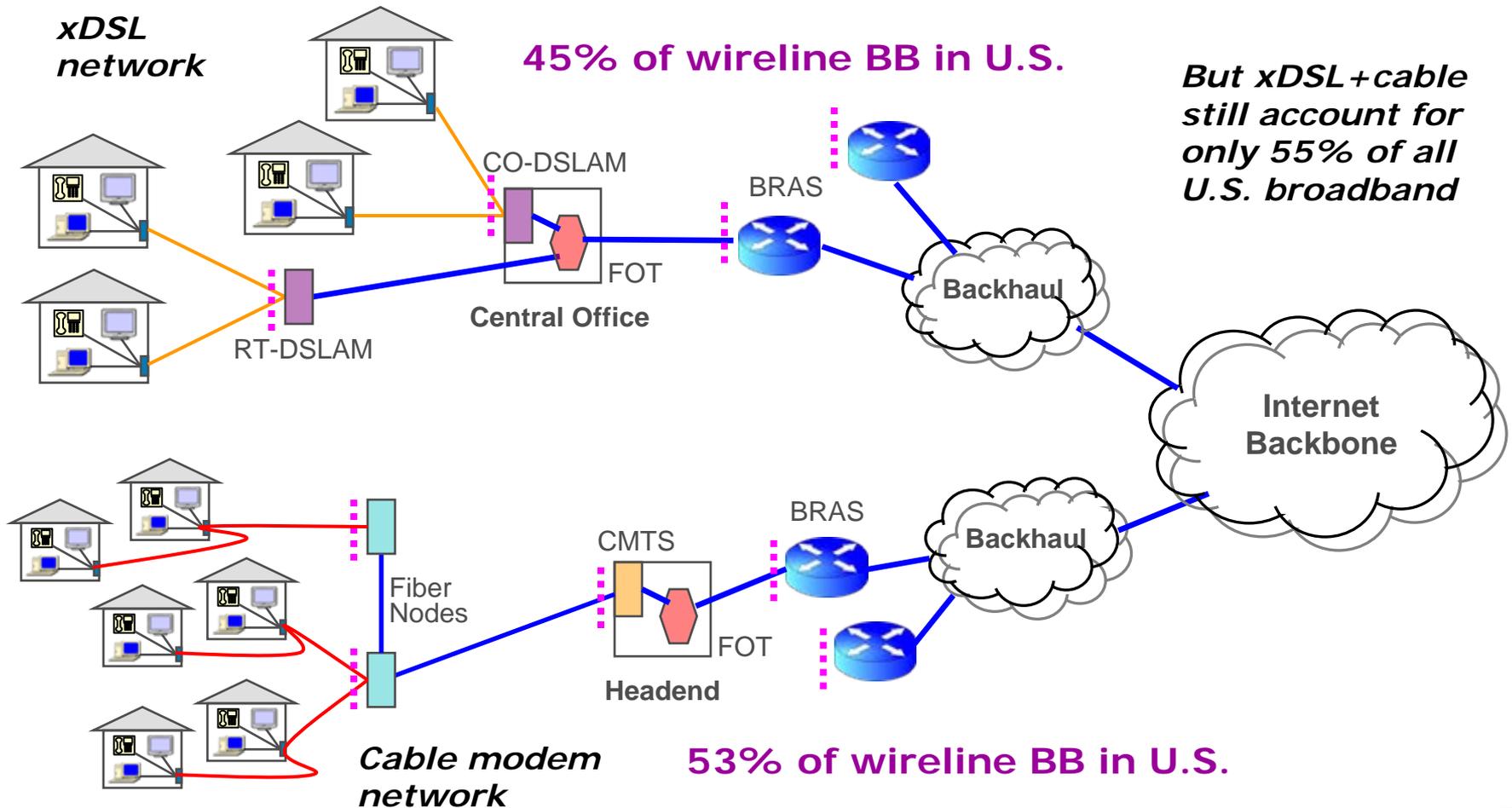
- Networks are divided into two segments:
  - **Monopoly** segment
  - **Competitive** (or potentially competitive) segment
- Separate (structurally/functionally/financially) these two segments
  - **Competition** will blossom in the competitive segment
  - **Regulation** will discipline the monopoly segment
  - Get the best of **both** worlds
- In telecom, the monopoly segment is believed to be **access**, and competitive segment is believed to be **most else**

# Practice

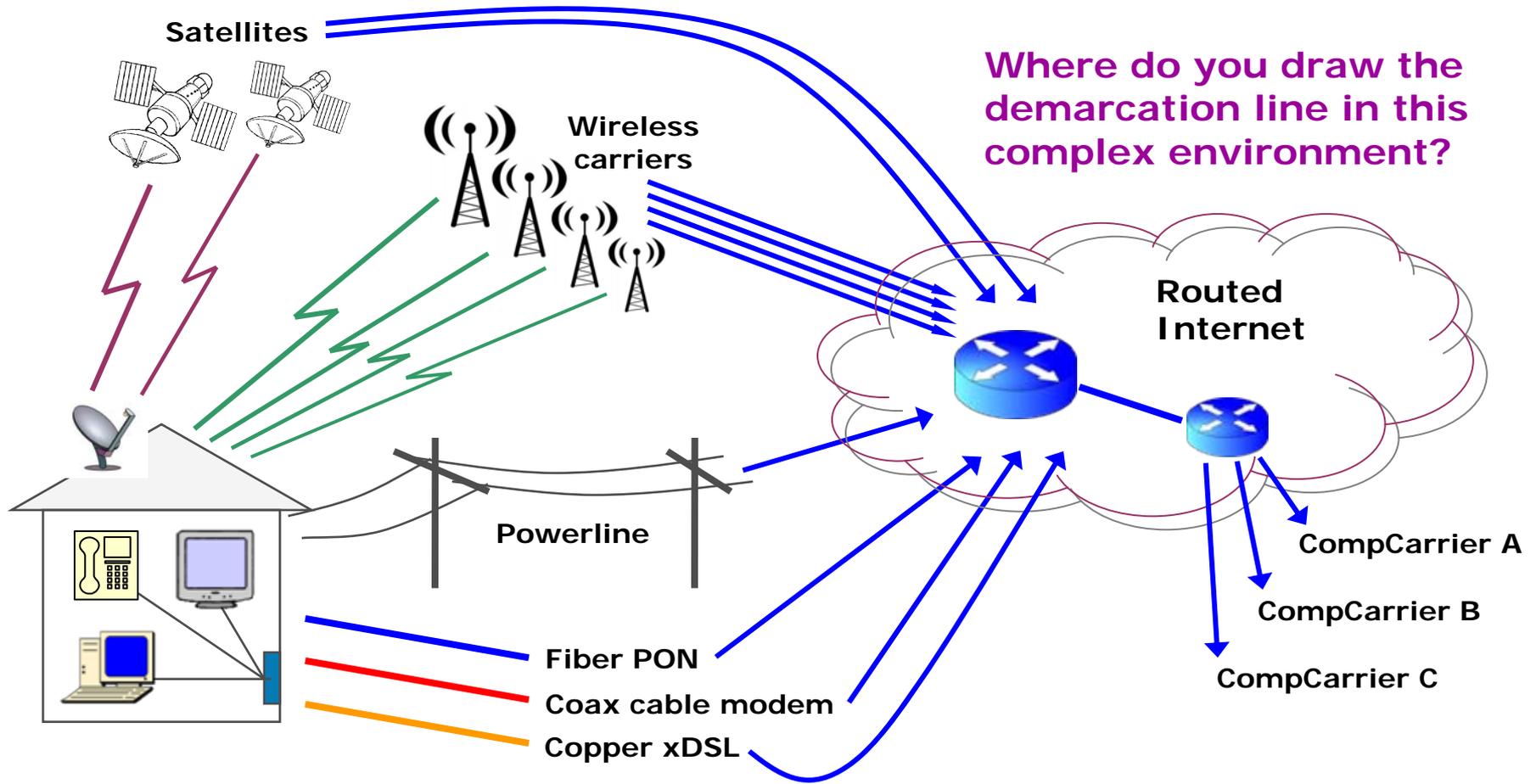
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- To **implement** separation, must establish:
  - Physical network **demarcation** points
  - **Interface** specifications
  - **Cost allocation** processes
  - **Pricing** regulation/restrictions
  - **Compliance** monitoring and enforcement processes
  - Process to **continually adjust** plan to reflect changing technical, competitive or economic conditions
- **None** of these tasks are quick, simple or cheap – or without possibly severe undesirable consequences

# Physical network demarcation



# Demarcation neutrality



# Interfaces

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- Location, number, geographic scope and nature of **points-of-interface**
- **Operations support systems** to support nondiscriminatory access to wholesale:
  - Ordering
  - Provisioning
  - Maintenance
  - Billing
- Rules for how **affiliates** may interface with wholesale entity
- **Financial responsibility** for interfaces and OSS development

# Cost allocation

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- Many costs are **joint** or **common** between wholesale and retail entities
  - Corporate **overheads**
  - **Cables** and **structures** (e.g., poles, trenches, ducts)
  - **Line-sharing**
    - Voice/data: low and high frequency spectrum
    - Data/video: spectrum quantity, location and transmission priority
- These costs will need to be **allocated** among users
- Economic theory provides **little or no basis** for determining such allocations
- Any allocation choice will be **arbitrary**

# Pricing regulation

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- Need to establish a **regulatory** framework to govern pricing by the wholesale affiliate (presumably with SMP)
  - Each type of **regime** (e.g., RoR, price cap, LRIC) has issues
  - Pricing regulation creates big **investment incentive** challenges
- Purpose of separation generally is to enable **deregulation** of the retail affiliate
  - Rarely seems to take place in a **complete** or **timely** manner
  - Competitors and regulators typically have ancillary interests in maintaining regulation **regardless of competition**

# Compliance

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- Separations regimes must be **monitored**
  - Development of a set of **performance metrics**
  - Process for monitoring/reporting levels of **adherence** to these performance standards
- **Enforcement** processes must be established to:
  - Encourage **desired** behavior
  - Not be delegated to **third parties**

# Revision

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- “Optimal” separations plans must **change constantly** to reflect new developments in technology, competition and customer demand
  - Revisions must be **timely**, and not delayed
  - But any revision is **costly** to all affected parties
- History of U.S. separations regimes
  - 1984: **local/LD** voice separation at line side of Class 4 switch
  - 1981-2000: **CI2** accounting separation for enhanced services
  - 1992: **expanded interconnection** at trunk side of Class 5 switch
  - 1996: DSL access and **line sharing** at central office MDF
  - 2000-2008: **Section 272** separation for RBOC LD or info services
  - 2000: **Bitstream** or **subloop** access to remote terminal-based DSL
  - 2003: Bitstream access requirement **revoked**
  - 2005: DSL line sharing **not** required

# Lessons

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- Separations policies are:
  - **Complex** to implement, especially in markets that already display substantial multi-network competition
  - **Costly** to maintain
  - **Short-lived** in their usefulness
- It is **unnecessary** to adopt separation as a policy when facilities-based multi-network **competition** exists
- Separation is also an especially **unwise** policy when:
  - Technology and consumer demand are **evolving quickly**
  - Regulatory/legal oversight is **fragmented** and **procedural**