Emerging Market Structure

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The Fundamentals

REASONABLE EXPECTATION OF MARKET STRUCTURE
One of the biggest problems of past telecoms policy is unreasonable expectations of market structure:
- At one extreme: “A Thousand Broadband Flowers are Blooming...”
- At the other: “Cozy duopoly” and you need to have a minimum of five to seven networks for effective competition


There exist an equilibrium number of firms in an industry ($N^*$).

$N^*$ is related to:
- Size of the market (bigger market, bigger $N$);
- Sunk Entry Costs (higher cost, fewer $N$);
- Degree of Price Competition (more competition, fewer $N$).
Equilibrium Industry Structure

\[ N^* = \sqrt{\frac{\phi S}{E}} \]

- So what does this mean?
- Markets are going to be highly concentrated (although there may be high cost areas where \( N^* = 1 \) or, worse, \( N^* < 0 \)).
- However, high concentration is not *per se* indication of poor market performance, particularly in markets characterized by high fixed and sunk costs.
- Concentration is an equilibrium – can’t do much about it.
- Need to rethink cost/benefits of regulation. Specifically,
  - Make sure firms invest and compete, rather than engage in strategic unilateral anticompetitive conduct, collude, or worse yet, exit the market...
Understanding the Basic Economics of Entry

- If goal is to promote “universal broadband”, then we need to understand the economics of entry and investment decision:
  - Post-Entry Profit \((d)\), minus
  - Inherent (exogenous) Entry Costs \((x)\), minus
  - Regulation-Induced Entry Costs (endogenous) \((e)\), plus any
  - Spillover Effects \((s)\) – i.e., when some firms can enter more cheaply than others
    - Must be greater than Zero
    - \(D - X - E + S > 0\)

- Not much we can do about exogenous costs, but policy can certainly do some things to lower endogenous costs and to maximize spillover effects.
The Problem of Ubiquity

REASONABLE EXPECTATIONS OF DEPLOYMENT AND ADOPTION
Equilibrium Industry Structure

FCC Broadband Task Force understands this formula has made some important findings:

- First, competitive intensity will depend on different end-user broadband demand scenarios (OBI September 29, 2009 Slide Presentation at 39);
- Why? Because the incremental cost to universal availability varies significantly depending on speeds required (OBI September 29, 2009 Slide Presentation at 45 and n. 1).
  - Incremental cost to build one 3-10 Mbps network to 7-10 million households is approximately $35 billion.
  - Incremental cost to build one 100+ Mbps network to 111-116 households is approximately $350 billion.
- What is realistic and attainable (and are we comfortable with the results)?
Economic and Demand-Side Drivers

HOW DO WE ENCOURAGE PEOPLE TO PURCHASE AND USE BROADBAND?
Economic and Demand-Side Drivers

- 91% of the variation in broadband adoption has NOTHING to do with telecom policy.
- Instead, broadband adoption driven by demographic and economic conditions, such as household income, education, age, immigration and, most significantly, income inequality.
- For rural broadband, density remains a major problem.
- What do you do about people who don’t want broadband for personal reasons?
Supply-Side Drivers

WHAT IS UBIQUITOUS BROADBAND GOING TO COST?
(AND HOW DO WE PAY FOR IT?)
Let’s repeat the obvious just to re-emphasize the point:
- *Building and operating networks is a really, really, expensive proposition*...
  - Plant Costs
  - Non-Plant Costs often exceed Cap Ex costs
- Exacerbating problem are “carrier of last resort” obligations.
  - “*Competition without change*...”
- Policy should “rig the game for entry/investment” by removing “policy relevant barriers to entry...”
  - i.e., reduce entry costs where possible
- If FCC can figure out policies that mitigate costs of entry, then amount required for subsidy should also decrease.
Supply-Side Ideas

- **Intercarrier Compensation/USF Reform**
  - *Do High Call Termination Rates Deter Broadband Deployment?* PHOENIX CENTER POLICY BULLETIN NO. 22 (October 2008).

- **Franchise Reform**
  - (Never did a clean resolution of this issue)
  - Key principle here is that *firms should be able to sell anything they want on the network without restriction*
  - Need to put value into the network and maximize business case
    - http://www.phoenix-center.org/rt2.html

- **Pole Attachments**

- **Other ideas?**
  - Remove spectrum caps, tower siting, secondary market for spectrum, digging up streets, etc.
Supply-Side Ideas

- **The big enchilada: Net Neutrality**
  - Phoenix Center theoretical and empirical research shows that network neutrality rules will likely lead to increased broadband prices, lower deployment and higher industry concentration.

- **Big Inconsistency Here: You can’t say you want ubiquitous coverage at affordable prices and then enact policies that will raise deployment costs and restrict profits.**

- **So let’s just be honest and start figuring out the size of the subsidy.**
Some Concluding Thoughts...

- National Broadband Plan provides a unique opportunity to take a holistic approach to broadband deployment and adoption.
  - This is a GOOD THING.
  - Broadband has transformative social effects.
- Arguments that we should have 100% broadband and, worse, 100% adoption at 100 Mb are rhetoric, not reality.
- Conversely, nobody buys the “A Thousand Broadband Flowers are Blooming” argument either.
- Similarly, expecting that spending $7.2 billion and a National Broadband Plan will somehow drastically boost our OECD ranking of per capita broadband adoption will led to disappointment because of problems in the way the OECD calculates their ranks.
  - “Broadband Nirvana” Problem
  - The Broadband Performance Index: A Policy-Relevant Method of Comparing Broadband Adoption Among Countries, PHOENIX CENTER POLICY PAPER NO. 29 (July 2007).
- What we need to do is to establish realistic benchmark targets based on the social value assigned to various Internet access technology (data intensive process but worth it).
  - The Broadband Adoption Index: Improving Measurements and Comparisons of Broadband Deployment and Adoption, Phoenix Center Policy Paper No. 36 (July 2009).
    - [http://www.phoenix-center.org/bai.html](http://www.phoenix-center.org/bai.html)