Innovation, Resource Constraints, and Mergers in Network Industries

Mark A. Jamison, Ph.D.
Public Utility Research Center

Janice Hauge, Ph.D.
University of North Texas
Leadership in Infrastructure Policy

• AT&T agreed purchase T-Mobile’s U.S. assets (March 2011)
  • $39 billion transaction
• Merge two of the four largest
  • AT&T 98.6 million connections
  • T-Mobile 33.6 million connections
  • Together pass 90% of U.S. homes
• DOJ petitions to stop (Sept. 2011)
“Market” Shares

Pre-merger 2010

- AT&T: 32%
- Verizon Wireless: 31%
- Sprint Nextel: 17%
- T-Mobile: 11%
- MetroPCS: 3%
- Others: 6%

Post-merger? (2010 data)

- AT&T: 43%
- Verizon Wireless: 31%
- Sprint Nextel: 17%
- MetroPCS: 3%
- Others: 6%

Source: FCC 15th Report
“Market” Shares

Numbers of Subscribers

Pre-merger 2010 vs. Post-merger?

- Others
- MetroPCS
- T-Mobile
- Sprint Nextel
- Verizon Wireless
- AT&T

DOJ petitions to stop (Sept. 2011)

Source: FCC 15th Report
DOJ Press Release

“...the proposed (AT&T purchase of T-Mobile in the U.S.) would substantially lessen competition for mobile wireless telecommunications services across the United States, resulting in higher prices, poorer quality services, fewer choices and fewer innovative products for the millions of American consumers who rely on mobile wireless services in their everyday lives.”
DOJ Petition

• T-Mobile is innovative
• Only 4 nationwide carriers
  • Other carriers are different market
• The “Big Four” > 90% connections
  • Each positioned to “drive competition”
• T-Mobile disruptive and challenger
• T-Mobile positioned to be affordable to the average customer
DOJ Petition (cont.)

• Market analyses
  • Post-merger HHI > 2500 generally
    • Merger increases +200 points
  • Merged company market share generally 40% to 50%

• Nationwide
  • Post-merger HHI > 3100
    • Merger increases +700 points
Leadership in Infrastructure Policy

**HHI**

<table>
<thead>
<tr>
<th></th>
<th>Dec-03</th>
<th>Dec-04</th>
<th>Dec-05</th>
<th>Dec-06</th>
<th>Dec-07</th>
<th>Dec-08</th>
<th>Dec-09</th>
<th>Jun-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>2151</td>
<td>2450</td>
<td>2706</td>
<td>2674</td>
<td>2674</td>
<td>2842</td>
<td>2811</td>
<td>2848</td>
</tr>
</tbody>
</table>

**Highly Concentrated (HHI > 2500)**

**Moderately Concentrated (1500 < HHI < 2500)**

Source: FCC 15th Report
Thoughts on DOJ Petition

- If T-Mobile disrupter...
  - Might not be viable strategy
- If T-Mobile positioned as “affordable to average consumer”...
  - Low price strategy. Rarely viable.
Subscriber Additions vs. EBITDA Per Subscriber: 2008-2009

Source: Analyst Reports, Company Data

Source: FCC 15th Report
More Thoughts on DOJ Petition

• If DOJ right, Sprint embraces merger
• Shares of what market?
AT&T/T-Mobile argument

• Need radio spectrum for 4G
  • Have HSPA+. Want LTE.

• Is this true?
• Wouldn’t greater concentration...
  • Decrease innovation incentive?
  • Diminish mechanism of innovation?
Our Topic

• Test AT&T’s and T-Mobile’s claim of need for spectrum
• Test DOJ’s claims of less innovation and harm to consumers
Our Approach

• Assume 3 firms compete à la Cournot
  • Exogenous merger of two firms
  • Overstates market concentration issue
• Test merger’s impacts on incentives
  • To adopt more advanced technology
  • To invest in diversity and value of devices/apps
• Test merger’s impact on welfare
More specifically...

- How does merger impact operators' willingness to incur fixed innovation costs?
  - If merger decreases threshold, then innovation more likely to occur
Adoption of LTE – One firm

Merger consistently increases incentive to invest in LTE
Investment in Device and App Quality and Diversity

Merger increases incentive to invest when network effects are weaker
Adoption of LTE – 2nd firm

Merger consistently increases incentive to invest in LTE
Conclusions

• AT&T and T-Mobile appear to be correct that merger will spur 4G investment
• DOJ appears to be wrong that customers are harmed
• Mixed results on device and app investment
  - Not yet analyzed non-telco incentives
The Body of Knowledge on Infrastructure Regulation
www.regulationbodyofknowledge.org

Visiting the new Body of Knowledge on Infrastructure Regulation Web site
www.regulationbodyofknowledge.org
Find fresh content, new references, more powerful search engines, revised self-testing and more!

NEW!
Regulatory Challenges (FAQ)

Introduction
Overview
Foundations of Regulation
Market Structure
Financial Analysis
Price Level Regulation
Tariff Design
Quality, Social, Environmental
Regulatory Process

Public Utility Research Center
UNIVERSITY of FLORIDA
Leadership in Infrastructure Policy

PPPIAF
PUBLIC-PRIVATE INFRASTRUCTURE ADVISORY FACILITY

World Bank
Thank you

mark.jamison@warrington.ufl.edu
+1.352.392.6148
http://www.purc.ufl.edu