ECONOMIC THEORIES OF HARM UNDERLYING REGULATORY CONCERN WITH THE PROPOSED COMCAST/TWC TRANSACTION

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All statements and ideas that I present today are my own and do not necessarily reflect the views of the FCC. My comments today should not be taken as a prediction of the outcome of any specific pending merger review by the FCC since the outcome of any specific merger review is highly dependent on a detailed analysis of facts specific to that particular merger.

BACKGROUND

1. Comcast is in three lines of business:
   - Broadband service
   - Multichannel Video Program Distribution (MVPD) service
   - Programming

2. TWC is in two lines of business:
   - Broadband service
   - MVPD service

3. Proposed merger involved two different types of asset combinations:
   - Combination of Comcast's distribution assets with TWC's distribution assets
   - Combination of Comcast's programming assets with TWC's distribution assets

4. While there were theories of harm associated with each type of asset combination, the core theories of harm were those associated with the combination of the firms' distribution assets and these are the ones that I will primarily focus on.

BACKGROUND (CONT'D)

5. A Key Fact:
   - Comcast's and TWC's distribution assets are not overlapping
   - Therefore the merger would not have directly reduced the number of broadband providers or MVPD providers available to any consumer

6. However:
   - Comcast was already the nation's largest broadband provider and MVPD
   - TWC was the nation's third largest broadband provider and fourth largest MVPD
   - The transaction would have caused Comcast to grow significantly larger.

Projected Comcast National Shares of Subscribers
Pre and Post Transaction

	Pre	Post
MVPD Subs*	22%	30%
Broadband Subs ** (3/.768 and faster)	30%	40%

* Rosston and Topper, April 8, 2014, page 73.
** Israel, April 8, page 32.

TWO IMPORTANT FEATURES OF THE COMPETITIVE ENVIRONMENT

1. Emergence of Online Video Distributors (OVDs) as Disruptive Competitors to MVPDs
   - Many offering live streaming channels
   - Many of these competitors planned to offer much smaller bundles of programming or other novel features
   - Examples:
     - DISH's Sling Service - 20 channels including ESPN, AMC, and Disney in a core package for $20 per month
     - HBO, Showtime and CBS offered a la carte streaming of their channels
     - Sony Playstation Vu
     - Upgraded Apple TV offering

2. Limited Competition in Fast Broadband
   - Only cable and fiber are capable of offering the highest speeds
   - Telco fiber deployment was somewhat limited
   - Limited entry of new fiber over-builders
   - Result: many households had only one "fast" choice; few had more than two

THE GENERAL THEORY OF HARM

1. Growth of a competitive and vibrant OVD sector is a desirable development for consumers.
   - Will directly increase competition, choice and variety in the programming distribution industry
   - Will lower barriers to entry in the broadband industry because broadband entrants will not have to provide as much of their own programming

2. Competition is most easily crushed when it is still nascent.

3. Comcast viewed OVDs as a serious threat to its traditional pay TV business.

4. OVDs need two key inputs:
   - last mile fast broadband interconnection to consumers
   - programming

5. The transaction would increase Comcast's incentive and ability to disadvantage rival OVDs by taking actions to limit their access to both of these key inputs.

THREE SPECIFIC THEORIES EXPLAINING WHY THE TRANSACTION WOULD INCREASE COMCAST'S INCENTIVE AND ABILITY TO DISADVANTAGE OVDs

1. Increased ability to raise interconnection fees to OVDs and other edge providers due to increased bargaining power over interconnection prices.

2. Increased ability to negotiate deals with third party programmers that limit OVD access to programming due to increased bargaining power in negotiations over programming deals.

3. Increased incentive to disadvantage OVDs due to capturing a larger share of the benefits from disadvantaging OVDs. Five ways to disadvantage OVDS:
   - Raising interconnection prices
   - Degrading transmission of OVD content
   - Imposing data caps or measured service plans on broadband subscribers
   - Negotiating deals with third party programmers that limit OVD access to their programming
   - Limiting OVD access to NBCU programming

INCREASED ABILITY TO RAISE INTERCONNECTION FEES

1. The Theory:
   - Broadband providers such as Comcast negotiate interconnection prices with entities such as OVDs and their transit providers that wish to terminate traffic on the their networks.
   - Larger broadband providers (i.e., providers with a larger national subscriber base) are able to negotiate higher interconnection fees
   - The combined entity would therefore be able to negotiate higher interconnection fees.
   - These would be passed along to OVD subscribers in the form of higher subscription fees and also limit the growth of OVDs and other edge providers.

2. Bargaining power and size:
   - Stylized fact in many business situations involving bilateral bargaining between party A and party B. Holding all other factors equal, if A's failure to reach agreement with B will cause A to lose a greater share of its profits, then B will have more bargaining power.

- Two examples from the cable industry
  - Larger broadband providers may be able to negotiate higher interconnection fees
  - Larger MVPDs may be able to negotiate programming deals with lower prices and more advantageous non-price terms.
- Common example in other industries: larger retailers may have more bargaining power over wholesale prices than small retailers.
- This can be explained by a model of Nash bargaining with concave payoff functions and a constant Nash bargaining parameter.
  - The marginal value of the last unit traded is less valuable to A than the marginal value of the second last unit.
  - The threat from withholding two units is more than double the threat from withholding one unit.
- However there is no size effect with linear payoff functions and the size effect is reversed with convex payoff functions.
- It is generally very difficult to determine the curvature of payoffs functions in real situations.
- Furthermore there is no reason to believe that the Nash bargaining parameter remains constant as firm size varies. Other theories could potentially be constructed that predict that the Nash

bargaining parameter changes as firm size varies.

- Therefore whether or not "larger" firms have more bargaining power in a particular industry is largely an empirical issue and cannot be settled by theory alone.

3. This theory of harm explains why the merged entity would raise interconnection prices to ALL edge providers and not merely edge providers that it views as competitors.
   - A broadband provider directly benefits from charging higher interconnection prices to an edge provider because it will receive more revenue
   - Therefore an increase in the ability to charge higher prices to an edge provider will result in higher prices to the edge provider regardless of whether or not the broadband provider views the edge provider as a rival.
   - As will be seen, the remaining two theories apply only to edge providers that Comcast views as competitors.

COUNTER-ARGUMENTS OF MERGING PARTIES

1. The Evidence
    - Counter-argument:
        - Merging parties disputed that the evidence showed that larger parties charge higher interconnection fees
        - Other factors that might affect prices need to be controlled for
            - Extent to which broadband provider owns its own backbone.
            - Extent to which broadband provider was providing interconnection to wireless customers as well as wireline customers
            - The "quality" of the interconnection provided.
    - Comments:
        - Both sides would have explored this issue much more deeply had the case gone forward

2. Settlement Free Interconnection
    - Counter-argument:
        - Comcast's ability to raise interconnection prices to OVDs and other edge providers was very limited because Comcast engaged

in settlement free interconnection with a large number of the largest ISPs and OVDs and other edge providers could interconnect with Comcast by purchasing transit from these ISPs.

- Comments:
  - FCC investigated the extent to which Comcast limits the amount of settlement free interconnection it provides through traffic ratios
  - FCC also investigated how shares of traffic delivered to Comcast through settlement free interconnection and paid peering had changed over recent years.

3. Competition from other Broadband Providers
   - Counter-argument:
     - Comcast's bargaining power over OVDs is limited because many of its subscribers would churn to an alternate broadband provider if a popular OVD became unavailable.
   - Comments:
     - A significant share of households do not have access to a second "fast" broadband provider.

- Subscriber switching costs dampen this effect
- FCC also investigated whether or not Comcast churn rates changed during the Netflix incident when Netflix was unavailable to Comcast customers.

4. Two sided markets
   - Counter-argument:
     - Cable operator can be viewed as a two-sided platform that charges both edge providers and broadband subscribers
     - Increases in prices charged to edge providers may be counteracted by reductions in prices to broadband subscribers.
     - Interconnection prices perform many complex functions in two sided markets including creating investment incentives and providing parties with incentives to use the network efficiently, and it is not therefore clear that allowing higher interconnection fees would be undesirable

   - Comments:
     - Both sides would have explored this issue much more deeply had the case continued.

5. Magnitude of Existing Interconnection Fees
    - Counter-argument:
        - Merging parties argued that current interconnection fees were extremely low and were a trivial expense of no real importance to OVDs or other edge providers.
    - Comments:
        - Example of dramatic growth in retransmission consent fees shows that fee structures can change dramatically in response to changes in the competitive environment, but that change may take 3 or 4 years to come about even after the underlying competitive environment changes.

INCREASED ABILITY TO NEGOTIATE DEALS WITH THIRD PARTY PROGRAMMERS THAT LIMIT OVD ACCESS TO PROGRAMMING

1. The theory
   - MVPDs negotiate license agreements with programmers
   - Larger MVPDs (i.e., MPVPs with a larger national subscriber base) are able to negotiate significantly lower license fees and are also able to negotiate more advantageous non-price terms that limit OVD access to programming
   - The combined entity will use at least some of its increased bargaining power to negotiate deals that further restrict the availability of programming to OVDs

2. An important aside on the potential effects of the transaction on programming license fees.
   - It seems likely that the combined entity would use at least some of its increased bargaining power to negotiate further reductions in programming license fees.
   - Argument that this is a competitive benefit
     - Some of the programming price decreases will be passed through to subscribers
   - Arguments that this is a competitive harm
     - Reduced programming fees will result in less investment in programming
     - There may be a "waterbed effect," i.e., programmers may attempt to recover lost revenues by raising prices to other MVPDs
   - Merging parties argued that TWC license fees would be reduced to the level paid by Comcast but did not attempt to argue that prices would drop below this level.
   - Some programmers argued that investment incentives would be reduced
   - Smaller MVPDs argued that they would end up paying more because of a waterbed effect
   - In its analysis in the AT&T/DirecTV order, the FCC viewed reductions in programming fees as a benefit to the extent they would be passed through to subscribers.

3. A “missing link” in the theory
   - Consider a situation where two parties engaging in trade negotiate a deal describing:
     - All of the non-price terms
     - A lump sum transfer
   - In the standard model where parties have additively separable preferences and bargain under complete information, parties will always negotiate an efficient set of non-price terms and then determine a lump-sum transfer based on their relative bargaining strengths.
   - Applying this model to our situation might yield the outcome that increases in bargaining power due to the transaction would result in lower programming prices but not result in any changes in non-price terms.
   - Possible resolutions:
     - Theory explaining why the efficient set of non-price terms involves more exclusion of OVDs as an MVPD grows larger.
     - More general theory, perhaps involving asymmetric information, which explains why a party with more bargaining power might negotiate non-price terms involving more exclusion of OVDs.

INCREASED INCENTIVE TO DISADVANTAGE OVDS DUE TO CAPTURING A GREATER SHARE OF THE BENEFITS

1. The Theory
   - When an individual MVPD takes actions to disadvantage OVDs it creates a positive externality for the entire MVPD industry by limiting the ability of the OVD to compete with all MVPDs.
   - The post-transaction entity will internalize a greater share of these externalities.

2. Five categories of actions that disadvantage OVDs.
   a. Raising interconnection prices
   b. Degrading transmission of OVD content
   c. Imposing data caps or measured service plans on broadband subscribers
   d. Negotiating deals with third party programmers that limit OVD access to their programming
   e. Limiting OVD access to NBCU programming

3. Relationship between the three theories
   - theory #1: ability to engage in (a) increases
   - theory #2: ability to engage in (d) increases
   - theory #3: incentive to engage in all five categories of actions increases.

4. Theory #3 was raised by parties in the FCC's review of mergers between the Baby Bells and was sometimes referred to as the "Big Footprint" theory of harm.

5. Dependence of the three theories of harm on the property that MVPDs view OVDs as rivals and have strong incentives to attempt to disadvantage them.
    - Theory #1 does not depend on this property
        - An MVPD directly benefits from charging higher interconnection prices to an edge provider because it will receive more revenue.
        - Therefore an increase in the ability to charge higher prices to an edge provider will result in higher prices to the edge provider regardless of whether or not the MVPD views the edge provider as a rival.
    - Theories #2 and #3 do depend on this property
        - An MVPD does not directly benefit from actions in categories (b)-(e).
        - An MPVD only benefits to the extent that it views OVDs as rivals as is thus better off if they are disadvantaged.

THE CARLETON CRITIQUE OF THEORIES BASED ON AN INCREASED INCENTIVE OR ABILITY TO DISADVANTAGING RIVALS

1. The Carleton Critique:
   - So long as it would be efficient for broadband subscribers to have access to a larger variety of programming through subscribing to programming both from their MPVD and from OVDs, the MVPD and OVDs could negotiate contracts that provide subscribers with the efficient bundle of programming from all possible sources and then split the profits between themselves.
   - Therefore MVPDs will never engage in activities that significantly disadvantage OVDs except where it is not possible for the parties to negotiate and sign appropriate contracts.
   - Such circumstances are rare and don't arise in this case.
   - One possible circumstance where this situation might arise is where an incumbent in one product wants to expand its sales of a complementary product out of region, but this circumstance does not arise in this case.

2. The Carleton Critique applies to almost all vertical competitive effects arguments of any sort and therefore amounts to an almost blanket denial of the possibility of anti-competitive vertical effects. To the extent that the economics literature as a whole takes a more balanced view of the possibility of vertical competitive effects, the Carleton Critique is a therefore a critique challenging the conclusions of this entire literature rather than a critique that applies narrowly only to the particular theories of harm raised in this transaction.

3. Example of a possible theory explaining why efficient contracts between incumbent MVPDs and OVDs are not always possible.
   - When the OVD is just entering, there may be considerable uncertainty over how successful the OVD will ultimately be
   - If the OVD will ultimately be very successful and have considerable bargaining power that will allow it to negotiate very low interconnection fees, the efficient contract would involve having the OVD make a large up-front payment to the MVPD
   - MVPD and OVD will likely disagree on the appropriate size of up-front payment.

4. FCC investigated whether internal company documents provided evidence that Comcast and TWC viewed OVDs as rivals and whether they were actively engaged in both thinking about and implementing various strategies designed to disadvantage OVDs.

OTHER THEORIES OF HARM

1. Transaction might increase the possibility that the remaining traditional-facilities based MVPDs could coordinate their actions to disadvantage OVDs.
   - Fewer major participants and a more natural leader
   - Example: coordinated adoption of data caps
     - Incumbent cable operators compete with telcos for customers.
     - If both groups impose data caps they may lose very few customers to one another and significantly deter OVD growth and entry
     - However, any individual telco or incumbent cable operator might have a short run incentive to defect from such an arrangement

2. Regulatory Benchmarking
   - Having multiple separately owned firms can help a regulator overcome its informational disadvantage by comparing firms' performances to one another and more generally by having two potentially independent sources of information
   - FCC will be deeply involved in complex and nuanced regulation of Internet openess and interconnection over the next decade.