Horizontal and Vertical Mergers in TV Markets: A US and European Perspective

Gregory S. Crawford

University of Zürich and CEPR

March 14, 2014

2nd E.CA Competition Law and Economics Expert Forum, Berlin
Context I: M&A in Europe

- Liberty Global
  - $16 bn.

- Ziggo
  - $6.7 bn.

- Kabel Deutschland
  - $10.2 bn.

- Ono
  - $10 bn.

- Vodafone
  - $10 bn.
Context II: M&A in the US

$45.2 bn.

$13.8 bn.

$45.2 bn.

$13.8 bn.
Context III: OTT Lurking in the Background

- **OTT** = Over-the-top (Internet) television
Three goals for my talk today:

1. Why care about mergers in TV markets?
2. Summarize
   - Recent \( \{ \text{horizontal, vertical} \} \) mergers in \( \{ \text{the US, Europe} \} \)
   - The insights of the \( \{ \text{case record, academic literature} \} \) on these topics
3. Highlight open issues going forward
Why Care about Television Markets?

Television is special:

1. It dominates people’s leisure time
2. It impacts political participation, debate, and power
   - e.g., Gentzkow (2006), Prat and Strömberg (2011)
3. It impacts beliefs, social outcomes, and culture
   - e.g., Gentzkow and Shapiro (2007), Jensen and Oster (2009)
4. And it’s a $400 billion global industry
Why Care about Competition in Television Markets?

- Competition is therefore particularly important in TV markets
- Both for its effects on
  1. Conventional economic outcomes
     - Access and use
     - Consumer and social welfare
  2. Non-economic outcomes
     - Television and violence, social engagement
     - Media ownership and viewpoint diversity
Television Markets are Two-sided

1. Consumers value content and are willing to pay for it.
2. This creates audiences that can be sold to advertisers.
There are multiple potential competition concerns:

- Horizontal concentration in content or distribution
- Vertical affiliation between content and distribution

In practice, most policy discussion focuses on:

1. Concentration in distribution
   - e.g. Downstream horizontal mergers

2. Vertical affiliation between content and distribution
   - e.g. Vertical mergers
Horizontal Mergers
**Horizontal Concerns in Distribution I**

- Most horizontal concerns in distribution are the standard ones regarding market power and prices, e.g.

- As ownership of US pay-television systems has become more concentrated:

<table>
<thead>
<tr>
<th>Rank</th>
<th>1997 Company</th>
<th>Market Share</th>
<th>2010 Company</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TCI</td>
<td>25.5</td>
<td>Comcast</td>
<td>22.6</td>
</tr>
<tr>
<td>2</td>
<td>TimeWarner</td>
<td>16.0</td>
<td>DirecTV*</td>
<td>19.0</td>
</tr>
<tr>
<td>3</td>
<td>MediaOne</td>
<td>7.0</td>
<td>Echostar (Dish)*</td>
<td>14.0</td>
</tr>
<tr>
<td>4</td>
<td>Comcast</td>
<td>5.8</td>
<td>TimeWarner</td>
<td>12.3</td>
</tr>
<tr>
<td>5</td>
<td>Cox</td>
<td>4.4</td>
<td>Cox</td>
<td>4.9</td>
</tr>
<tr>
<td>6</td>
<td>Cablevision</td>
<td>3.9</td>
<td>Charter</td>
<td>4.5</td>
</tr>
<tr>
<td>7</td>
<td>DirecTV*</td>
<td>3.6</td>
<td>Verizon FiOS**</td>
<td>3.5</td>
</tr>
<tr>
<td>8</td>
<td>Primestar*</td>
<td>2.4</td>
<td>Cablevision</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td><strong>Top 4</strong></td>
<td><strong>54.3</strong></td>
<td><strong>Top 4</strong></td>
<td><strong>68.0</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Top 8</strong></td>
<td><strong>68.6</strong></td>
<td><strong>Top 8</strong></td>
<td><strong>84.0</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Top 25</strong></td>
<td><strong>84.9</strong></td>
<td><strong>Top 25</strong></td>
<td>—</td>
</tr>
</tbody>
</table>

* = Satellite Operator ** = Telco Operator
Prices have risen by 5\% 3\% per year
- Prices have risen by 5 v 3% per year

(Tho careful: quality has also grown significantly over time)
Horizontal Mergers: Differences

- Horizontal mergers in television markets can be different from a typical horizontal transaction:

  1. Downstream mergers may *not* reduce competition in local markets, e.g.
     - Comcast & Time Warner don’t compete head-to-head

  2. ⇒ Most effects may be in wholesale markets, e.g.
     - A downstream merger may enhance a distributor’s bargaining power with channels...
     - In principle *lowering* affiliate fees...
     - Possibly *reducing* prices to ultimate consumers

  3. Upstream mergers could both
     - Enhance channel bargaining power, raising prices, and...
     - Also affect ad markets
Because of this lack of overlap in service areas, there have been relatively few challenges to US horizontal mergers.

Last big US challenge was Echostar-DirecTV (2001):
- Blocked by both DOJ and FCC

- Imposed some (largely vertical) merger conditions
Recent European cases:

- **Kabel BW - UnityMedia** (Germany, 2012, Liberty Global)
  - Approved by the Bundeskartellamt with conditions
  - But the Oberlandesgericht Düsseldorf recently disapproved,
    - (Lots of experience in the room on this)
- **Ziggo - UPC Netherlands** (Netherlands, 2014, Liberty Global)
- **Canal Plus - Movistar TV** (Spain, 2014, Telefonica)
Horizontal: Academic Literature? I

Academic literature both thin and somewhat discouraging:

- Modest price, quality effects of satellite competition:

- Theory and empirics discourage price regulation as an alternative to promote consumer/social welfare:

- Mandatory à la carte not likely any better:
  - Crawford and Yurukoglu (2012, *AER*)
  - (Also estimate bargaining parameters)

Recent horizontal mergers have focused on bargaining effects:

- Several bargaining papers in the literature...
  - Getting bigger bad for bargaining:
  - Getting bigger good for bargaining:
- Unfortunately all have weaknesses
Horizontal: Conclusions (?)

- Horizontal competition policy in television markets *seems* straightforward

  1. Content markets are often relatively unconcentrated
     - Depending on how narrowly one defines markets

  2. Distribution markets are often quite concentrated
     - Suggesting a normal market power v efficiencies analysis for merger review
Horizontal: Conclusions (?)

- Horizontal competition policy in television markets *seems* straightforward

1. Content markets are often relatively unconcentrated
   - Depending on how narrowly one defines markets

2. Distribution markets are often quite concentrated
   - Suggesting a normal market power v efficiencies analysis for merger review

- I think this is too optimistic
Evaluating horizontal competition policy - whether mergers or otherwise - requires answers to some difficult open issues:

1. How do consumers trade off price versus quality?
2. Is there a connection between competition and quality?
3. What are likely bargaining effects?
4. Worry about (tacit?) collusion?
Difficult open questions, cont:

3. What role does/should public-service broadcasting play in the functioning of television markets?

4. Could govt provision in distribution improve social outcomes?
Horizontal: Open Issues III

Answering these questions is difficult:

1. Enough information in a horizontal case setting?
2. Using quasi-experimental research methods?
3. Using structural research methods?

There is a tendency to “do what one knows how to do,” but that may miss a lot in television markets.
Vertical Mergers
There has recently been much greater concern about vertical issues in television mergers. In the US,
Vertical Concerns II

- The academic literature identifies (at least) three reasons a vertical merger can cause a competition problem:
  1. Restoring monopoly power
  2. Raising rivals’ costs
     \(\text{(Also: reducing rivals’ revenue)}\)
  3. Foreclosure

- I’ll focus on (2) and (3) as they are most relevant for TV markets
Raising Rivals’ Costs

- This literature potentially very relevant in TV markets
  - Salop and Scheffman (1983), Ordover, Saloner, and Salop (1990)
- Consider 1 upstream (U) firm setting prices, $\tau_j$, to 2 symmetric downstream (D) firms
- Basic issue is a vertical externality:
  - As U raises $\tau_2$, $p_2 \uparrow$, and demand for firm 1 increases.
  - Without integration, U ignores this and sets symmetric $\tau$s
  - With $(U : D_1)$ integration, U sets a higher $\tau_2$
- VI also:
  - Resolves double marginalization
  - Softens downstream competition (Chen (2001))
Reducing Rivals’ Revenue

There can be an analogous effect in upstream markets which one can call *Reducing Rivals’ Revenue*:

Consider 2 upstream substitutes \((U_j)\) and 1 downstream (D) firm that bargain à la Nash

Basic issue again a vertical externality:

- \(D\) contracting with \(U_2\) reduces \(U_1\)’s revenue
- Without integration, \(D\) carries both at symmetric \(\tau\)s
- With \((U_1 : D)\) integration, \(D\) is a tougher negotiator with \(U_2\)
  - Reducing \(U_2\)’s revenue

Long-run effects also possible

- If \(U_2\) has a lesser incentive to invest in quality
- (Common in television markets)
Foreclosure

- Consider again 1 upstream (U) and 2 downstream (D) firms
- It might be in the interests of the integrated $U : D_1$ to raise $\tau_2$ so high that $D_2$ doesn’t use $U$'s input
  - This is complete “foreclosure” (Rey and Tirole (2007))
- The trade-off to $U$:
  1. Market coverage (favoring lower $\tau_2$) versus
  2. Differentiation (favoring higher $\tau_2$)
    - This trade-off turns on the elasticity of substitution between $D_1$ and $D_2$
- There is a similar tradeoff to $D$ in the RRR case
- Many recent US cases have centered on these tradeoffs
  - News-Hughes, Comcast/Time Warner-Adelphia, Comcast-NBC
Of course, there can also be efficiencies associated with vertical integration:

1. Eliminating double marginalization
2. Aligning investment incentives; eliminating holdup
3. Reducing other (effort) incentive problems
4. Reducing transactions costs

(1), (2), and (4) are all potentially relevant in TV markets

Assessing the merits of a vertical transaction must consider both pro- and anti-competitive effects
Until recently, vertical contracts in US TV markets were influenced by **Program Access** and **Program Carriage** rules

- Set by the Federal Communications Commission (FCC)

These forbid affiliated distributors and content providers from discriminating against unaffiliated rivals in either the programming (PC) or distribution (PA) markets.

These were replaced in 2012 by rules forbidding “unfair acts”

- With a rebuttable presumption that exclusive agreements with affiliated Regional Sports Networks (RSNs) are unfair.
Recent big US cases:

1. **Comcast/Time Warner - Adelphia (2005)**
   - DirecTV model of RRC showed incentives for integrated distributor to increase its price to unaffiliated distributors as its size increased
   - Conditions:
     - Program Access Conditions for RSNs for 6 years
     - Commercial arbitration remedy in case of disagreements
Recent Vertical Mergers II

Recent big US cases, cont:

2. Comcast-NBCU (2011)

- Foreclosure and RRC models demonstrated incentives for merged entity to both withhold programming from and raise prices to rival distributors

- Conditions:
  - Non-discriminatory access conditions for broadcast, cable, and RSN programming
  - Non-discriminatory access conditions for content to be delivered online
  - Reasonable offering of standalone broadband access
  - Non-discrimination in “neighborhooding” of television channels
Recent big European cases:

1. **CanalSat - TPS (France, 2006)**
   - Merged entity also significant owner of content
   - Conditions:
     - Facilitating ability of upstream competitors to acquire sports and movie rights
     - Must-offer for seven affiliated channels
     - Objective and open carriage of independent channels
Recent big European cases:

2. **BSkyB - Ofcom (UK, 2012)**
   - Pay TV inquiry focusing on BSkyB market power in provision of sports and movie programming
   - Found narrow economic markets for content, that BSkyB had market power, and that it abused that power
   - 2010: Implemented wholesale must-offer regime for sports at prices 20% below existing rates
     - 2012: Competition Appeals Tribunal (CAT) struck down rules as unfounded
     - 2014: Courts require CAT to revisit issue
Vertical: Academic Literature?

Academic literature again thin:

- Analyses in policy decisions cited earlier worth reading
  - FCC’s Comcast/Time Warner-Adelphia good for horizontal
  - FCC’s Comcast-NBCU order good for vertical

- Integrated operators favor affiliated channels in carriage...
  - (Tho is this pro- or anti-competitive?)

- ...though less the more competition there is downstream
  - Goolsbee (2007, *FCC Ownership Study*)
The recent Comcast-NBCU merger is indicative of vertical cases

Three elements:

1. Unaffiliated distributor’s access to/price of integrated content
2. Unaffiliated content’s access to integrated distribution
3. Vertical issues in online video and internet access markets

I will only discuss the first of these
Comcast-NBCU: Foreclosure model I

- The FCC estimated the costs and benefits to Comcast-NBCU of foreclosure of broadcast programming

(Simplified) Costs and Benefits:

\[ \text{Costs} = (1 - d) \times \text{Subs} \times (\text{Fee} + \text{Ad}) \]

\[ \text{Benefits} = (\alpha \times d \times \text{Subs}) \times \pi \]

- \(d\) = fraction rivals’ subs that switch
- \(\text{Subs}\) = number of rivals’ subs
- \(\text{Fee}\) = Fee paid by rivals for C-NBCU content
- \(\text{Ad}\) = per-sub Ad revenue
- \(\alpha\) = share of switching subs that choose C
- \(\pi\) = profit per new subscriber

All of these but \(d\) can be estimated using company data
Comcast-NBCU: Foreclosure model II

- Solve for the threshold share of rivals’ subs...
  - ...above which foreclosure is profitable

\[ d^* = \frac{Ad + Fee}{\alpha \times \pi + Ad + Fee} \]

- Key question: how to calculate \( d \) to compare to \( d^* \)?
Comcast-NBCU: Foreclosure model III

- FCC calculated both these critical values by DMA and compared them to estimates of departure rates from a dispute between Dish and Fisher in 2008.
  - Applicants and FCC agree this is best available evidence

- These values unfortunately redacted, but higher than threshold
  - FCC conclusion: foreclosure would be profitable
The FCC also calculated the incentives for the integrated C-NBCU to raise rivals’ costs.

Estimated percentage change in fees paid by rivals for integrated content as:

\[ \Delta P = (1 - \mu) \times d \times \alpha \times \pi \]

where

- \( \mu \) = the bargaining parameter of NBCU
- (Other parameters as in foreclosure model)
Estimates of some bargaining parameters come from (what eventually was published as) Crawford and Yurukoglu (2012)

- For cable nets:
  - $\mu = 0.53$ with telcos
  - $\mu = 0.56$ with satellites

- For broadcast nets, assume $\mu = 0.67$

Estimates for departure rates, $d$, come from

- Earlier data (b/c) or DirecTV study using bargaining model fit to affiliate fees (cable)

FCC concludes bargained prices will rise

- Estimated price increases unfortunately redacted
Vertical: Comcast-NBCU Remedies

- Remedies to foreclosure and RRC?
  - Non-discriminatory access conditions for broadcast, cable, and RSN programming
  - Baseball-style (final offer) arbitration
  - All distributors, not just those that compete directly with Comcast
  - Standstill provisions keeping content on distribution
  - Lower arbitration costs for small and medium operators
Co-authors and I are investigating further evidence of RRC and foreclosure both up- and down-stream

1 Upstream:

- Do integrated operators favor affiliated channels in tier placement, and/or channel position?
- Do integrated operators discriminate against unaffiliated channels in tier placement, and/or channel position?

2 Downstream:

- Do integrated operators avoid double-marginalization ($\mu$)?
- Do integrated operators raise rivals costs ($\lambda_R$)?
- Does integration soften competition downstream ($\lambda_C$)?
Upstream Work in Progress

Crawford, Lee, Viera, Whinston, Yurukoglu:
- Examine the channel lineups of the population of US cable systems from 1998 to 2011
  - 6-10k/year, 10 million system-channel positions
- Focus on:
  1. Channels in well-defined genres with multiple channels
     - At least one of which was VI in this period
  2. Whether channel is leader in its genre or not
     - As may not be strong effects for leading channels
Upstream: Preliminary Results

- Integrated firms carry their own channels more, ...
- Integrated firms put unaffiliated rivals on higher tiers, and ...
- Integrated firms put their own channels on (much) lower channel positions
  - ...if those channels aren't the leading channel in the genre
- (With lower channel position yielding more viewership.)
- Prelim conclusions: evidence of mild favoritism, less of discrimination
Crawford, Lee, Whinston, Yurukoglu:

- For our work in progress looking at downstream vertical effects
  - We focus on Regional Sports Networks (RSNs)
  - These considered “must-have” programming...
  - ...and a focus of recent policy
- Model an extension of Crawford and Yurukoglu (2012, *AER*)
  - No results yet, but a coherent framework to measure these effects
Downstream: Framework I

Distributor $f$’s profit downstream:

$$\Pi_f = (p_f - \sum_{c} \tau_{fc})s_f + \mu \sum_{c \text{ owned by } f} \tau_{fc}s_{jfmt} + \lambda_C \sum_{c \text{ owned by } f} \sum_{g} \tau_{gc}s_{gt}$$

- $\mu$ parameterizes Double Marginalization
  - Equals 1 if downstream unit perfectly internalizes integrated upstream profits
- $\lambda_C$ parameterizes competition softening (Chen) effect
  - Equals 1 if internalization is as strong on sales of upstream unit’s content through other distributors as it is for own downstream unit

Input fees of integrated channels from other distribs
Content provider $k$’s profit upstream:

$$\Pi_k = \sum_{c \text{ owned by } k} \left[ \sum_f (\tau_{fc})s_f + \lambda_R \sum_f (p_f - \sum_c \tau_{fc})s_f \right]$$

- $\lambda_R$ parameterizes Raising Rivals’ Costs
- Equals 1 if content provider fully internalizes its downstream unit’s profits when bargaining with other distributors

- Basic idea: exploit variation in horizontal and vertical ownership across time to test for vertical effects
Vertical: Conclusions

- Vertical competition policy in television markets is active across the world
  - Both raising rivals’ costs and foreclosure have drawn the attention of regulators
  - With \{ Merger conditions, Sector regulations \} designed to mitigate harms from any anti-competitive effects of vertical affiliation

- As for the horizontal case, there remain some difficult open issues
Articulating the incentives for RRC and/or foreclosure is straightforward, but credibly measuring them can be hard:

- Profit margins up- and down-stream may be reasonably approximated
- But critical cross-distributor elasticities of substitution in the absence of integrated content \((d)\) can be very difficult to estimate

How well do conditions/regulations mitigate harm?

- Particularly if (possibly important) dynamic effects

How to (credibly) measure vertical efficiencies?
Vertical: Open Issues II

- There are similar issues in *online* markets, e.g.
  1. Google search bias
     - FTC concluded no harm; EC disagreed.
     - Google - EC have tentative settlement with Google providing independent adjacent to affiliated results
  2. Net Neutrality
     - In February, Netflix agreed to pay Comcast for faster delivery of its content
     - (Can be rational for N and C and still be welfare-reducing)
- Almost *no* empirical evidence on these incentives
Conclusions
Conclusions I

- A recurring set of themes:
  1. Competition in distribution
  2. Vertical affiliation and { foreclosure v efficiencies }

- While challenging, more measurement is needed:
  1. How consumers trade off price versus quality
  2. Concentration, vertical affiliation, and investment incentives
  3. Vertical efficiencies
  4. Effects in online markets
Conclusions II

- *Not* discouraging!
  - We know what to look for...
  - The burden:
    - Finding creative ways to bring evidence to bear
    - (In a realistic time frame)
Thank You


