

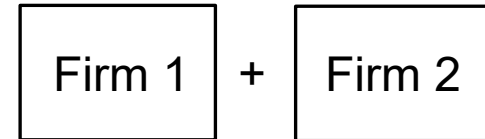
11. Vertical Mergers

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Transaction types

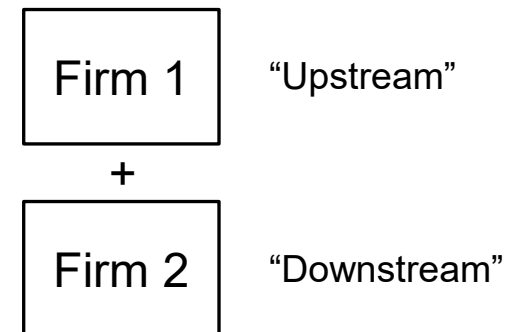
1. Horizontal transactions:

- ❑ Combine two competitors
- ❑ Sell *substitute* products



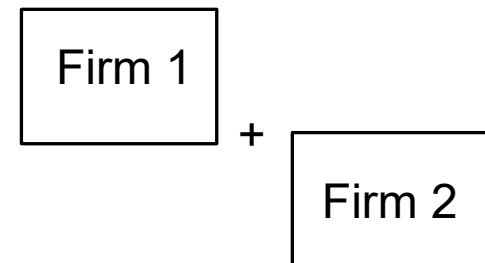
2. Vertical transactions:

- ❑ Combine two firms at adjacent levels in the chain of manufacture and distribution
- ❑ May be extended to two firms that sell—
 - *Complementary* products, or
 - Products in the chain or manufacture of distribution but not adjacent to one another



3. Conglomerate transactions

- ❑ Mergers that are neither horizontal or vertical



Vertical theories of harm: The roadmap

1. Unilateral exclusionary effects

- a. “Input foreclosure”
- b. “Output foreclosure”
- c. Creating the need for two-level entry

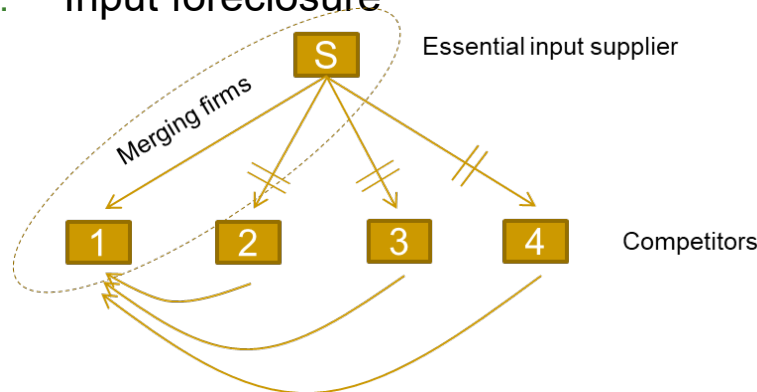
2. Coordinated effects

- a. Elimination of a disruptive buyer
- b. Elimination/disciplining of new disruptive competition
- c. Facilitation of tacit coordination through greater firm homogeneity
- d. Anticompetitive information conduits

Unilateral exclusionary effects

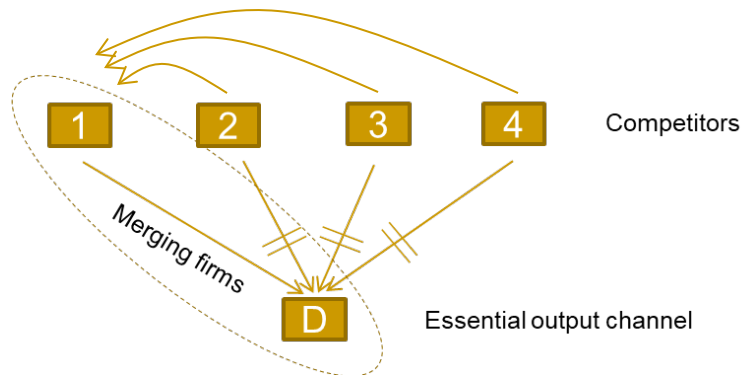
■ Two types of foreclosure

1. “Input foreclosure”



Premerger: S deals with all downstream firms
Postmerger: Combined firm causes S to foreclose Firms 2, 3, and 4

2. “Output foreclosure”



Premerger: D deals with all upstream firms
Postmerger: Combined firm causes D to foreclose dealing with Firms 2, 3, and 4

Unilateral exclusionary effects

- Two variations of foreclosure theories
 1. The combined firm could refuse to deal with its competitors (“true foreclosure”)
 2. The combined firm raises the price to its competitors rather than foreclosing them altogether (“raising rivals’ costs” or “RRC”)
- Modern practice
 - “True foreclosure” is rarely observed in business practice
 - “Raising rivals’ costs” is the primary theory today applied to vertical mergers

NB: It does not matter if the buyer is the upstream or downstream firm in a vertical merger. Antitrust law assumes that the combined firm will maximize its profits.

Unilateral exclusionary effects

■ Foreclosure: Ability and incentive

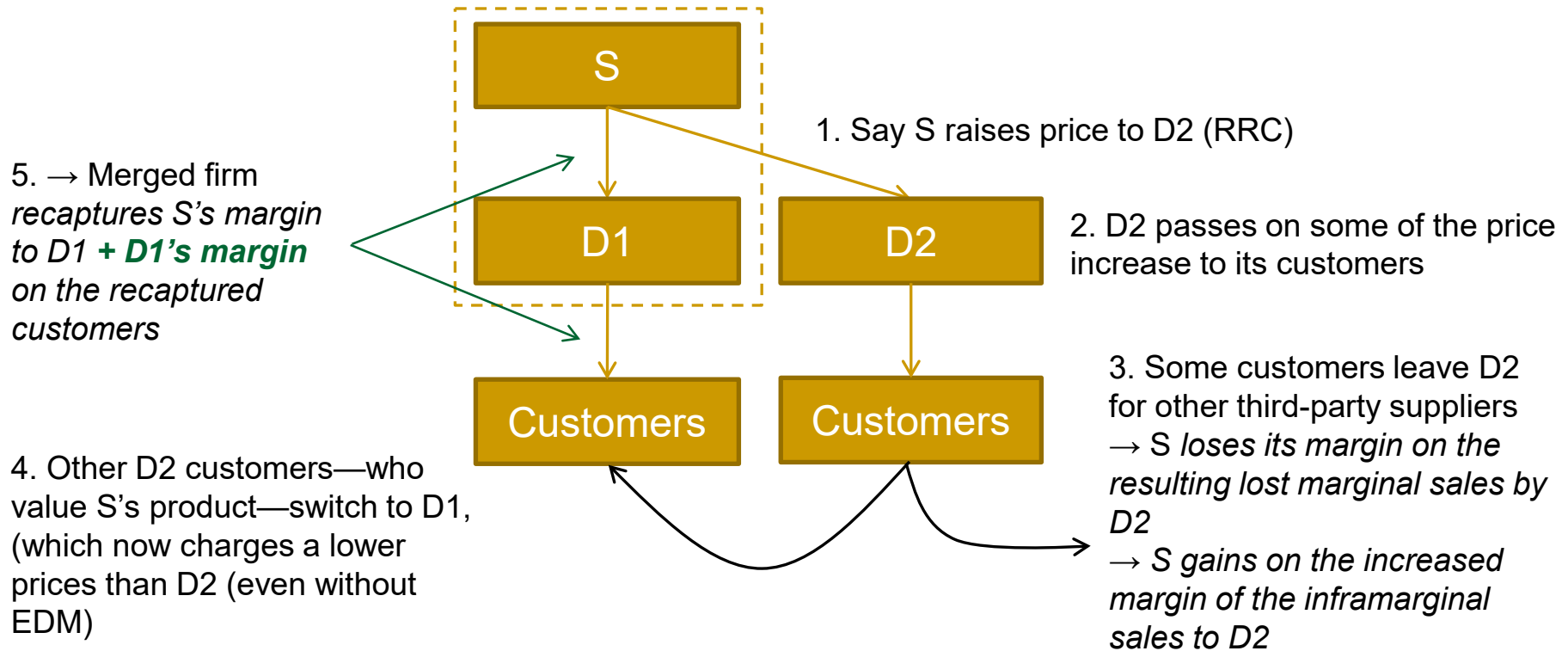
1. The *ability* of the merged firm to act anticompetitively depends whether the merged firm can competitively disadvantage its rivals by withholding its products
 - If targeted rivals can substitute suitable products at premerger prices and thereby protect themselves, the merged firm has no ability to reduce competition in the relevant market by foreclosing rivals
2. The *incentive* of the merged firm to act anticompetitively depends on—
 1. The residual elasticity of demand of the targeted rivals (which determines their loss of sales)
 2. The merged firm's profit gain on inframarginal sales to targeted rivals due to the price increase
 3. The merged firm's profit loss on marginal sales to targeted rivals due to the price increase
 4. The merged firm's recapture rate of its rivals' lost marginal resales of the merged firm's product
 5. The merged firm's profit gain (margin) on the recapture sales

Sometimes called
"vertical arithmetic"

Remember: When the merged firm increases price to its rivals, the merged firm will lose profits on reduced sales. Whether foreclosure is in the profit-maximizing interest of the merged firm will depend on its ability to earn even greater profits through recapture.

Unilateral exclusionary effects

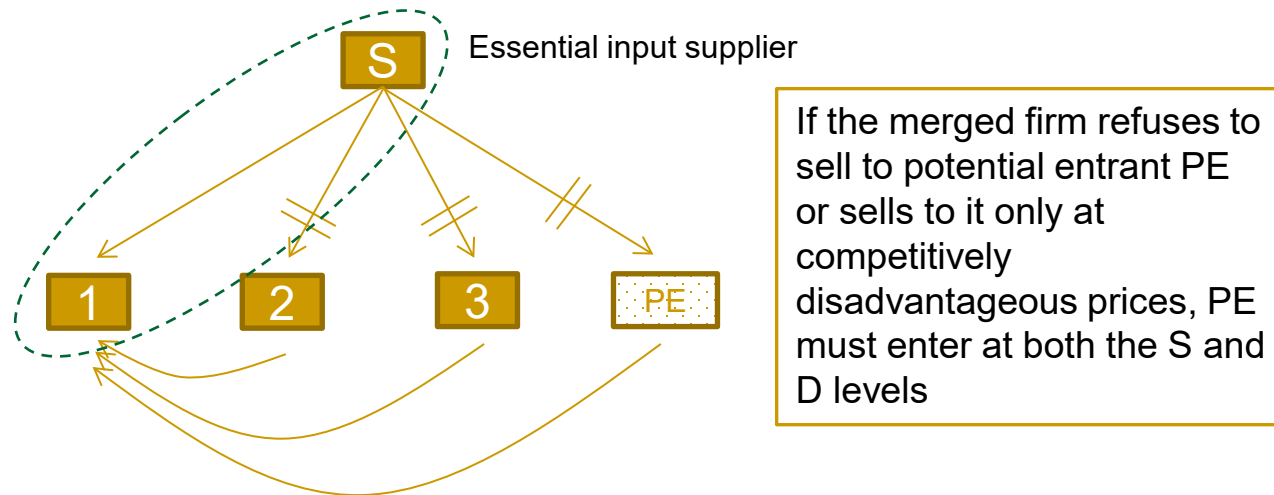
■ Foreclosure: The vertical arithmetic



Postmerger, the recapture of the **D1 margin** from marginal subscribers diverting to D1 upsets the premerger marginal revenue = marginal cost condition and incentivizes the combined firm to *increase* the price of its content to D1's rivals. This is the vertical analogue to horizontal recapture unilateral effects.

Unilateral exclusionary effects

- Creating the need for two-level entry



- This sounds in the elimination of potential competition BUT—
 - The theory has been accepted by the Supreme Court in the 1960s/1970s cases when raising barriers to entry was enough in itself to be anticompetitive
 - Recognized as a theory of anticompetitive harm in the 1982 Merger Guidelines, the 2020 Vertical Merger Guidelines, and the 2023 Merger Guidelines¹

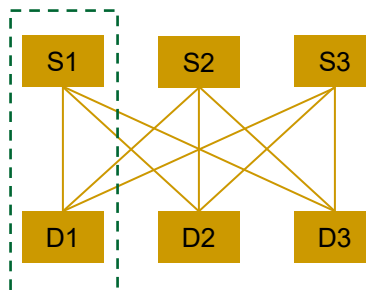
Now let's turn to coordinated effects from vertical mergers

¹ The FTC withdrew from the 2020 VMGs on September 15, 2020, as one of the first actions after the Democrat-appointed commissioners obtained a majority under Chair Lina Khan. See News Release, Fed. Trade Comm'n, [*Federal Trade Commission Withdraws Vertical Merger Guidelines and Commentary*](#) (Sept. 15, 2021). The 2023 Merger Guidelines, which address vertical and conglomerate mergers as well as horizontal mergers, recognizes this theory of harm in Guideline 5.

Coordinated effects

1. Elimination of a disruptive buyer

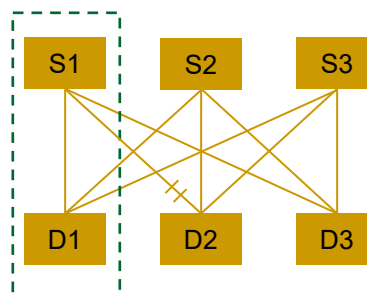
D1 is a disruptive buyer



Acquisition by S1 eliminates D1's "disruptiveness" to coordination among suppliers to charge supercompetitive prices to distributors

2. Elimination/disciplining of new disruptive competition

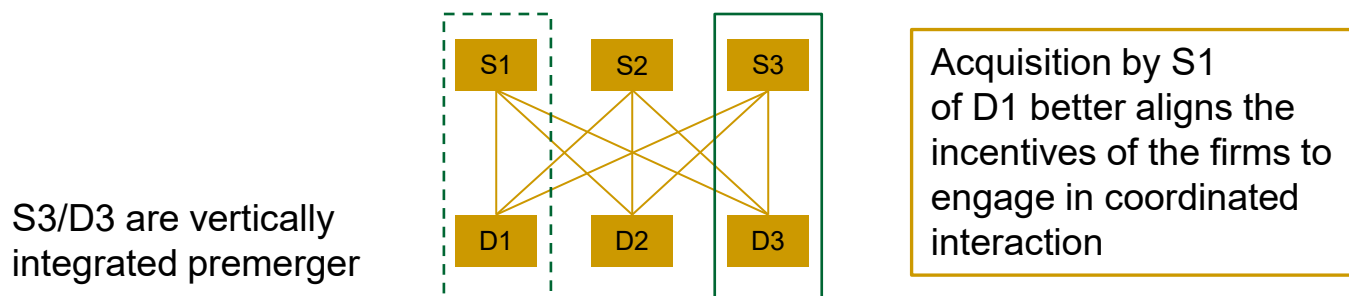
D2 is a disruptive competitor



Acquisition by D1 of S1 disciplines D2's "disruptiveness" to coordination among distributors by foreclosing S1 sales to D2

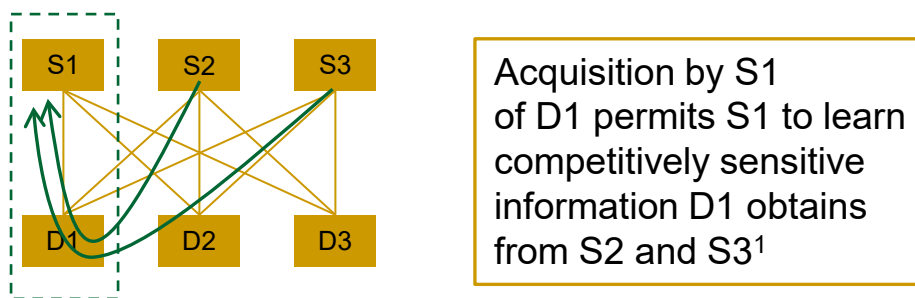
Coordinated effects

3. Facilitation of tacit coordination through greater firm homogeneity



- NB: This theory was not included in the 2020 Vertical Merger Guidelines

4. Anticompetitive information conduits



¹ D1 also could be used to pass information from S1 to S2 and S3 (making the communications bilateral).

Vertical theories of harm

■ Some observations

- In modern antitrust law, theories of anticompetitive harm in vertical mergers (as in horizontal mergers) should be on the harm to competition in the market and not on harm to competitors
- As with all Section 7 cases, the anticompetitive effect must be located in a relevant market
 - Determined by the usual *Brown Shoe* and HMT tests

Vertical theories of harm

■ Vertical mergers in the Supreme Court

❑ Decided three cases since 1950

1. United States v. E.I. du Pont de Nemours & Co., 353 U.S. 586 (1957)

- ❑ Requiring du Pont to divest its 23% ownership interest in General Motors for vertical
- ❑ *Output foreclosure*: du Pont's ownership in GM anticompetitively disadvantaged du Pont's fabrics and finisher competitors from selling to GM

2. Brown Shoe Co. v. United States, 370 U.S. 294 (1962)

- ❑ Requiring the #4 shoe manufacturer/#3 shoe retailer to divest the #12 shoe manufacturer/#8 shoe retailer for vertical foreclosure
- ❑ *Reciprocal output/input foreclosure*

3. Ford Motor Co. v. United States, 405 U.S. 562 (1972)

- ❑ Finding Ford's acquisition of spark plug manufacturer Autolite would raise barriers to entry in the spark plug market
- ❑ Requiring Ford to divest the Autolite name and its only spark plug factory, and prohibiting Ford from manufacturing spark plugs for 10 years
- ❑ Ford did not manufacture spark plugs prior to the acquisition but rather acquired them from independent companies such as Autolite
- ❑ *Input foreclosure*: Ford's ownership in Autolite anticompetitively disadvantaged Autolite's sparkplug competitors from selling to Ford

*But none of these cases has had much impact
on the modern vertical merger analysis*

Vertical theories of harm

■ Modern enforcement practice

- Historically, since vertical mergers do not eliminate a competitor and are generally accepted as creating meaningful efficiencies, the agencies until recently have not sought to block these transactions or require divestiture
- Instead, the agencies accepted behavioral remedies
 1. Non-discriminatory access undertakings
 2. Undertakings to maintain open systems to enable interoperability
 3. Firewalls to protect against sharing confidential information of competitors
- AT&T/Time Warner
 - Enforcement practice changed on November 20, 2017, when the DOJ sued to block AT&T (a subscription TV distributor) from acquiring Time Warner (a content creator/network assembler)
 - The conventional wisdom is that the DOJ concluded after examining the same markets in the Comcast/Time Warner Cable merger investigation that an access consent decree in the analytically similar Comcast/NBCUniversal transaction would not work

Query: Since the DOJ lost the AT&T/TW challenge, will vertical merger enforcement revert to behavioral remedies?

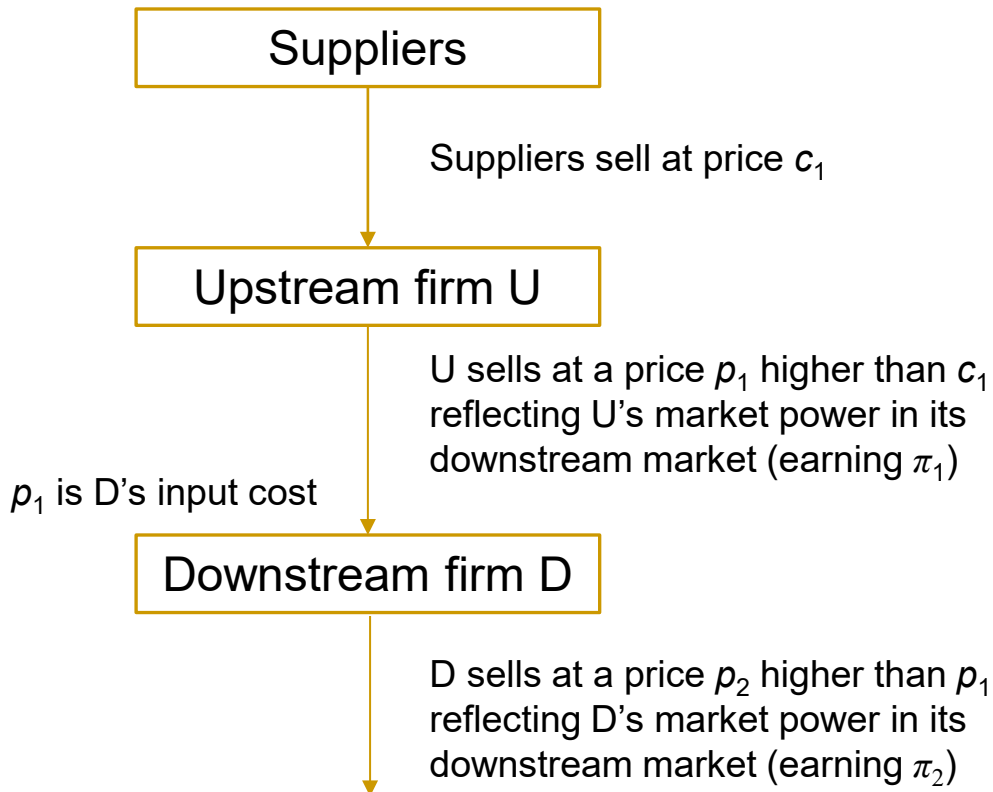
Efficiencies in vertical mergers

- Elimination of double marginalization
 - This is a widely accepted benefit of vertical mergers
 - Can lower price and increase output
- The idea
 - Consider a manufacturer and a retailer in the chain of distribution
 - Assume that both have some degree of market power
 - That is, they each face downward-sloping demand curves
 - They both then have an incentive to “markup” their price above their marginal cost
 - The “double markup” increases prices and reduces output
 - Vertical mergers change the profit-maximizing incentive from charging two markups to charging a lower single markup, which reduces price, increases output, *and* increases aggregate profits for the merged firm compared to the premerger levels
 - This drives enforcement policy to allow the merger subject to behavioral remedies but without requiring divestitures
 - NB: The efficiency gain from the elimination of double marginalization decreases as the upstream and/or downstream markets become more competitive
 - This is because the markup—and hence the market distortion to be corrected—decreases as the market(s) becomes more competitive

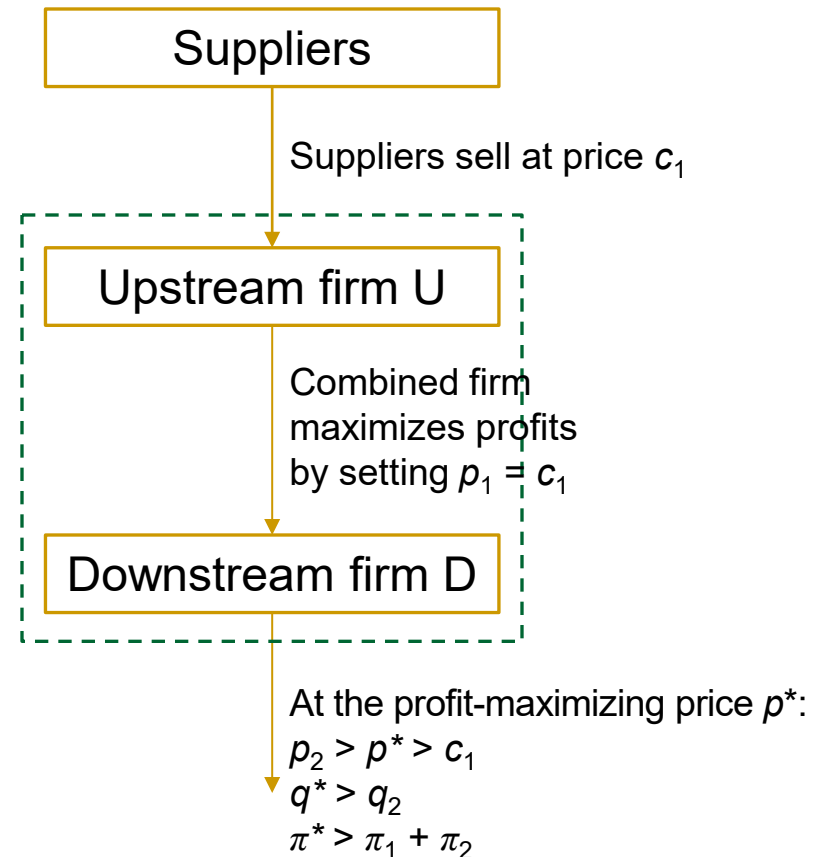
Efficiencies in vertical mergers

■ Elimination of double marginalization: The theory

Premerger



Postmerger

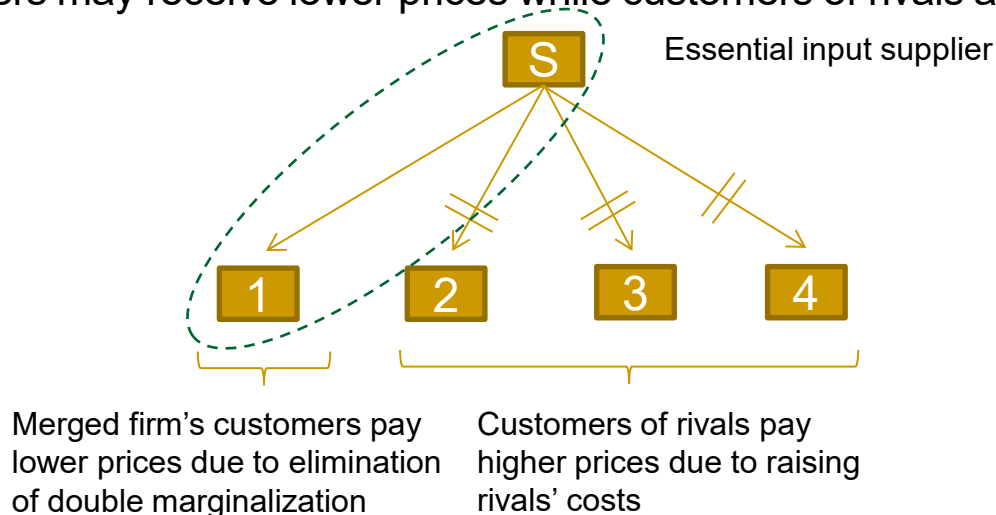


Applying the consumer welfare standard

■ Query:

How should the consumer welfare standard be applied if some customers in the relevant market benefit from the merger while other customers are harmed?

- When both RRC and efficiencies result from vertical merger, the merged firm's customers may receive lower prices while customers of rivals are charged higher prices



- Only one litigated case has raised this question (AT&T/Time-Warner)
 - **DOJ**: Look at net wealth effect comparing the aggregate savings from EDM to the aggregate incremental costs of RRC (on rivals or rivals' customers?)
 - **Court**: DOJ accepted without deciding DOJ's test

Ford/Autolite



Ford/Autolite

■ The parties

□ Ford

- Nation's second largest manufacturer of passenger cars and trucks
- Sales: 2 million units (28% share of cars)
- Revenues: Over \$5 billion

□ Autolite

- One of the nation's largest non-integrated auto parts manufacturer
- Manufactured a full line of automotive electrical products
 - Including batteries, generators, spark plugs, electrical motors, instruments, and ignition systems
- Supplied—
 - Original Equipment Manufacturers (OEMs)
 - Aftermarket

Ford/Autolite

■ The deal

- On April 12, 1961, Ford Motor Company acquired selected assets of the Electric Autolite Company for \$28 million
 - Autolite's spark-plug plant in Fostoria, Ohio (one of six Autolite facilities)
 - Autolite trade name
 - One of Autolite's six operating battery installations
 - Limited distribution rights
- Scope and limitation
 - Acquisition gave Ford partial vertical integration into spark-plug production
 - Fostoria's capacity was insufficient to meet all Ford OEM needs
 - Ford therefore continued to source from Champion and other suppliers
 - Nonetheless, the deal gave Ford the capacity and incentive to internalize a substantial share of its spark-plug needs—representing up to about 10% of total industry demand—reducing independent suppliers' accessible sales base.
- Strategic motivation
 - Reduce dependence on outside suppliers, especially Champion
 - Capture aftermarket margins under the Autolite brand
 - Align with GM's AC integration and Chrysler's prior Autolite sourcing relationship

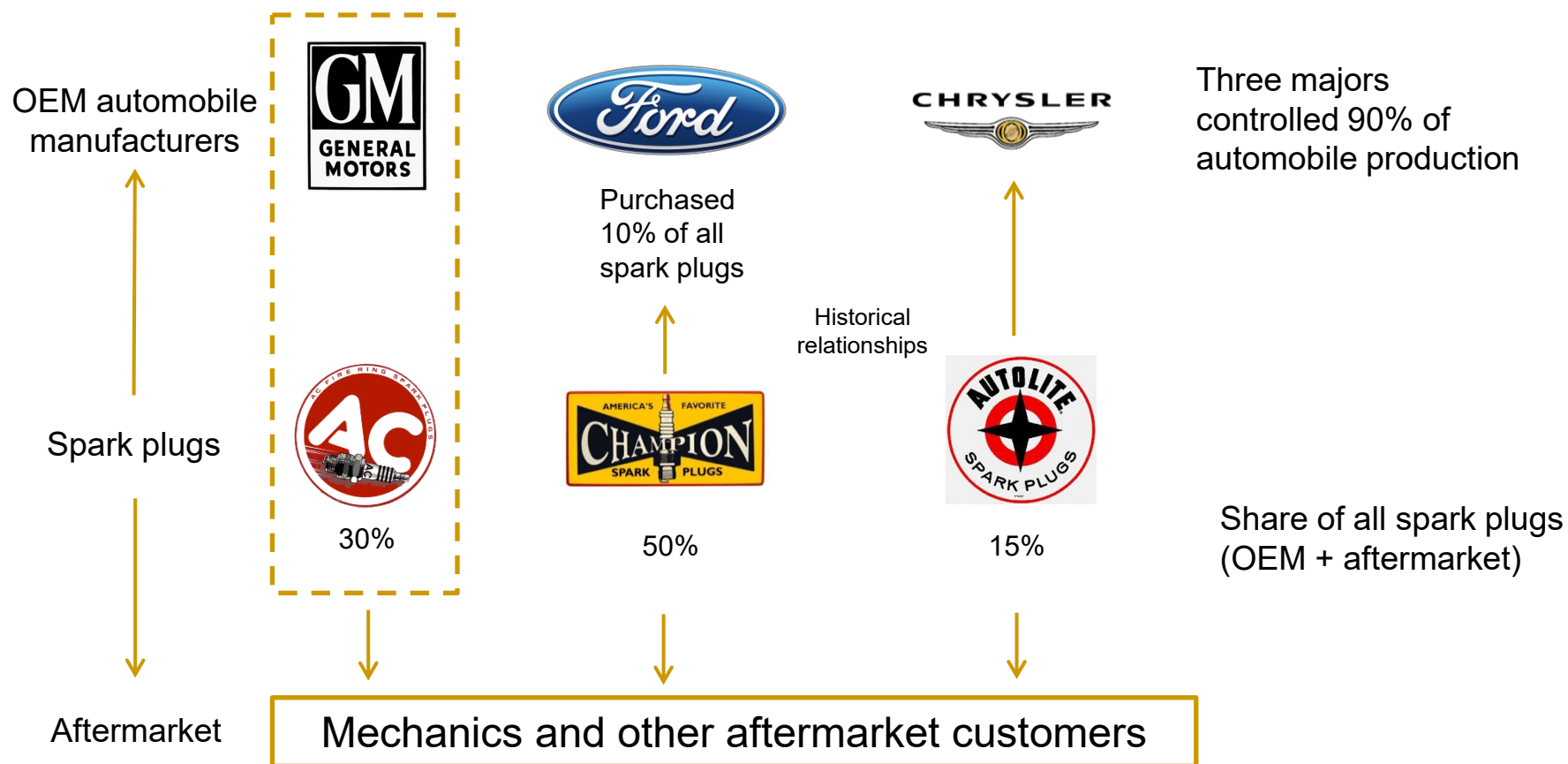
Ford/Autolite

■ Spark plug economics

- Spark plugs have to be replaced about five times in the life of a car
- The OEM market
 - Each OEM contracted to purchase spark plugs from an exclusive supplier
 - Non-integrated spark plug manufacturers bid for exclusive OEM contracts, selling to OEMs below cost
- The aftermarket
 - Aftermarket plug was the same brand as the OEM product and mechanics tended to replace spark plugs with the OEM brand
 - Spark plug manufacturers charged higher prices in the aftermarket to recover their losses in the OEM market and make profits
 - NB: Spark plugs were replaced as part of the car's tune-up and comprised only a small fraction of the tune-up service fee → customer demand for spark plug was relatively inelastic, permitting an oligopolistic equilibrium with high margins

Ford/Autolite

■ The spark plug landscape premerger



Ford/Autolite

■ District Court

- ❑ Complaint filed November 27, 1961
- ❑ Final judgment rendered on December 18, 1970, finding a Section 7 violation and ordering relief
 - No manufacture of spark plugs for 10 years
 - Divest Autolite plant and name
 - Purchase one-half of its spark plug requirements from the divested plant for 5 years
 - Enjoined from using its own trade names on spark plugs for 5 years

■ Supreme Court

- ❑ Affirmed: March 29, 1972
- ❑ Four theories
 1. The acquisition eliminated Ford as an actual and perceived potential entrant into the manufacture of spark plugs:

An interested firm on the outside has a twofold significance. It may someday go in and set the stage for noticeable deconcentration. While it merely stays near the edge, it is a deterrent to current competitors. This was Ford uniquely, as both a prime candidate to manufacture and the major customer of the dominant member of the oligopoly. Given the chance that Autolite would have been doomed to oblivion by defendant's grass-roots entry, which also would have destroyed Ford's soothing influence over replacement prices, Ford may well have been more useful as a potential than it would have been as a real producer, regardless how it began fabrication.¹

¹ Ford Motor Co. v. United States, 405 U.S. 562, 567-68 (1972) (quoting the district court) (internal citation omitted).

Ford/Autolite

■ Supreme Court

□ Three theories (con't)

2. The acquisition foreclosed Ford as a purchaser of about 10% of total industry output of spark plugs (output foreclosure)
3. Ford's entry had the effect of raising barriers to entry into the spark plug market, further reducing the chances of future deconcentration of that market:

In short, Ford's entry into the spark plug market by means of the acquisition of the factory in Fostoria and the trade name "Autolite" had the effect of raising the barriers to entry in to that market as well as removing one of the existing restraints upon the actions of those in the business of manufacturing spark plugs.

It will also be noted that the number of competitors in the spark plug manufacturing industry closely parallels the number of competitors in the automobile manufacturing industry and the barriers to entry into the auto industry are virtually insurmountable at present and will remain so for the foreseeable future. Ford's acquisition of the Autolite assets, particularly when viewed in the context of the original equipment (OE) tie and of GM's ownership of AC, has the result of transmitting the rigidity of the oligopolistic structure of the automobile industry to the spark plug industry, thus reducing the chances of future deconcentration of the spark plug market by forces at work within that market.¹

- The Court could have added a fourth theory: The acquisition facilitated oligopolistic coordination in the aftermarket sale of sparkplugs
 - This is suggested in the second paragraph of the quote above, although the Court focused more on raising barriers to entry and thereby reducing the prospect of future deconcentration

¹ Ford Motor Co. v. United States, 405 U.S. 562, 568 (1972) (quoting the district court).

Ford/Autolite: Comparing approaches

1. Ford seen as both actual and perceived potential entrant constraining spark plug pricing
 - ❑ The 1972 approach: Focused on market structure
 - Not ability, incentives, or competitive effects
 - Sufficient that there was a mere *risk* that the acquisition eliminated future entry or deterrence, without proof that Ford was likely (or perceived as likely) to enter imminently
 - ❑ The modern approach: Focuses on ability, incentive, and competitive effects
 - Actual potential competition: Looks to—
 - ❑ Ability to enter de novo or via toehold acquisition
 - ❑ Incentive to enter absent the merger
 - ❑ Likely timing of entry absent the merger
 - ❑ Effect on competition if entry occurred
 - Perceived potential competition: Looks to—
 - ❑ Incumbents' perception of the ability to enter
 - ❑ Incumbents' perception of the likelihood of entry if the market operated more anticompetitively
 - ❑ Incumbents' observable actions to deter entry
 - ❑ Whether the acquisition would remove a meaningful competitive constraint and result in the market operating less competitively

Ford/Autolite: Comparing approaches

2. *Output foreclosure*: The acquisition foreclosed Ford as a purchaser of about 10% of total industry output of spark plugs
 - The 1972 approach: Focused on market structure
 - Presumed Ford postmerger would source all of its OEM spark plug requirements from Autolite, foreclosing 10% of the spark plug demand from Autolite's rivals
 - Suggests that foreclosure of a significant share of demand is a significant factor in establishing a Section 7 violation—but not set a threshold
 - The modern approach:
 - Assesses RRC in addition to complete foreclosure
 - Focuses on ability, incentive, and competitive effects
 - Ability to foreclose/raise rivals' costs
 - Does the merged firm control an input or customer channel sufficiently important that it could disadvantage rivals?
 - Incentive to foreclose/raise rivals' costs
 - Would doing so be profitable, given lost sales, recapture, and downstream margins?
 - Competitive effect of foreclosure/raise rivals' costs
 - Would the conduct substantially lessen competition by reducing rivals' ability or incentive to compete, leading to higher prices, lower quality, or slower innovation?

Ford/Autolite: Comparing approaches

3. *Raises “barriers to entry”*: Ford's entry had the effect of raising barriers to entry into the spark plug market, further reducing the chances of future deconcentration of that market
 - The idea here is that, with the merger, Ford will shift some of its demand for OEM spark plugs from the merchant market to captive supply, which reduces market demand, and so makes entry by new firms less attractive
 - The incremental reduction in merchant market demand was significant to the Court because GM was already vertically integrated with AC
- The 1972 approach
 - The Court found that Ford’s acquisition of Autolite would result in cognizable Section 7 harm by internalizing a large OEM buyer’s demand, thereby reducing demand for third-party suppliers and with it the prospects for deconcentration
- The modern approach
 - There is no modern analogue to this theory

NB: In finding the acquisition violated Section 7, the Court looked at the totality of the competitive effect from the three theories and did not find that any one theory was sufficient to sustain a Section 7 violation

Coca-Cola/Coca-Cola Enterprises



Coca-Cola Enterprises

Coca-Cola/Coca-Cola Enterprises (2010)

■ Transactions

- Coca-Cola to acquire CCE's North American operations for over \$12.3 billion
- Separately, Coca-Cola paid Dr Pepper Snapple Group (DPSG) \$715 million to distribute DPSG brands (including Dr Pepper and Canada Dry) in specific geographic areas

■ Parties

- Coca-Cola: The largest manufacturer of soft drink concentrate and carbonated soft drinks
- CCE: Coca-Cola's largest independently owned North American bottler
- DPSG: The third largest soft drink competitor after Coca-Cola and PepsiCo

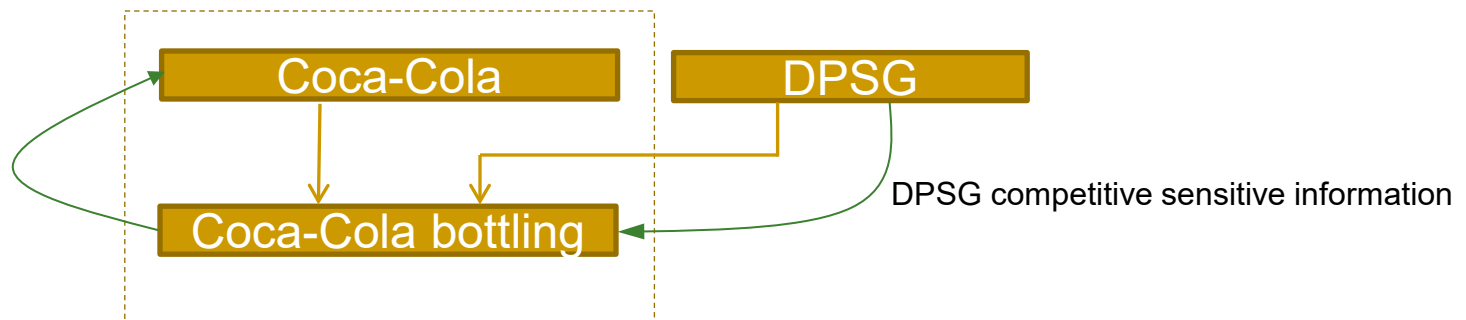
■ Soft drink bottling

- Soft drink shares: Coca-Cola (40%), PepsiCo (30%), DPSG (17%)
- Soft drink concentrate manufacturers license bottlers to produce, bottle/can, and distribute the manufacturer's soft drinks in a prescribed geographic area
- CCE
 - Accounted for 75% of Coca-Cola's U.S. sales of bottled and canned soft drinks
 - Accounted for 14% of DPSG's U.S. sales of bottled and canned soft drinks

Coca-Cola/Coca-Cola Enterprises (2010)

■ FTC concerns

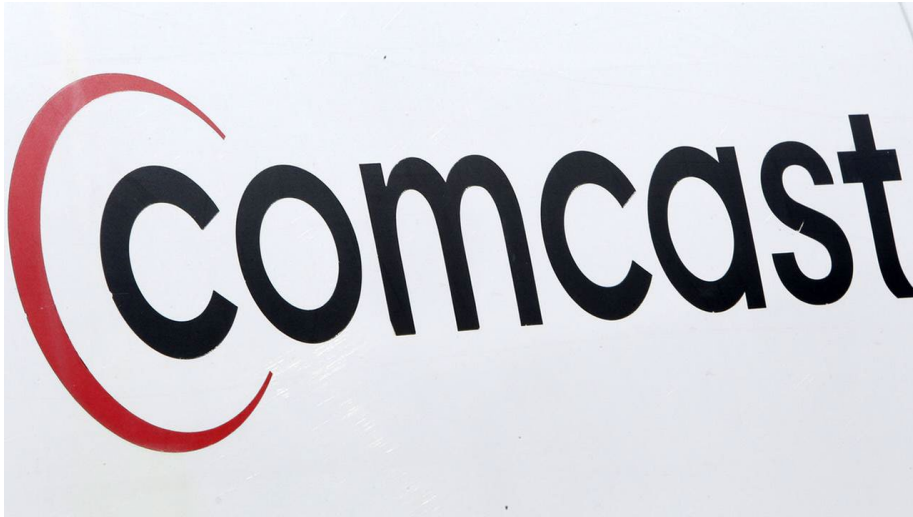
- ❑ Concentrate manufacturers need to provide their bottlers with advance confidential information (CSI) regarding their advertising, marketing, and promotion strategies and their new product introductions
- ❑ The DPSG distribution agreement with Coca-Cola did not provide adequate safeguards against access by Coca-Cola's competitive operations to DPSG's CSI obtained by Coca-Cola's bottling operations
- ❑ Likely to result in:
 - Elimination of direct competition between Coca-Cola and DPSG
 - Increase in the probability that Coca-Cola could unilaterally exercise market power or influence and control DPSG's prices
 - Increased in the probability of coordinated interaction



Coca-Cola/Coca-Cola Enterprises (2010)

- Investigation settled by consent decree
 - Firewall
 - Coca-Cola to set up a “firewall” to ensure that its ownership of the bottling company does not give certain Coca-Cola employees access to commercially sensitive confidential Dr Pepper Snapple marketing information and brand plans
 - Shareable information
 - CCE can only share DPSG information related to bottler functions and then only with Coca Cola Bottling Operations Personnel or approved “Additional Firewalled” personnel
 - Each person must sign a nondisclosure agreement (NDA)
 - Monitor
 - Consent order term: 20 years

Comcast/NBCUniversal



Comcast/NBCUniversal

■ The deal

- Comcast to buy a controlling interest in NBCUniversal from GE for contribution of assets + cash
 - Announced December 3, 2009
- To form a 51%/49% joint venture between Comcast and GE (NBCUniversal LLC) to be run by Comcast

Comcast/NBCUniversal

- Contributions to the new NBCU joint venture

New NBCU

NBCU – Valued at \$30B



Comcast Businesses– Valued at \$7.25B



+

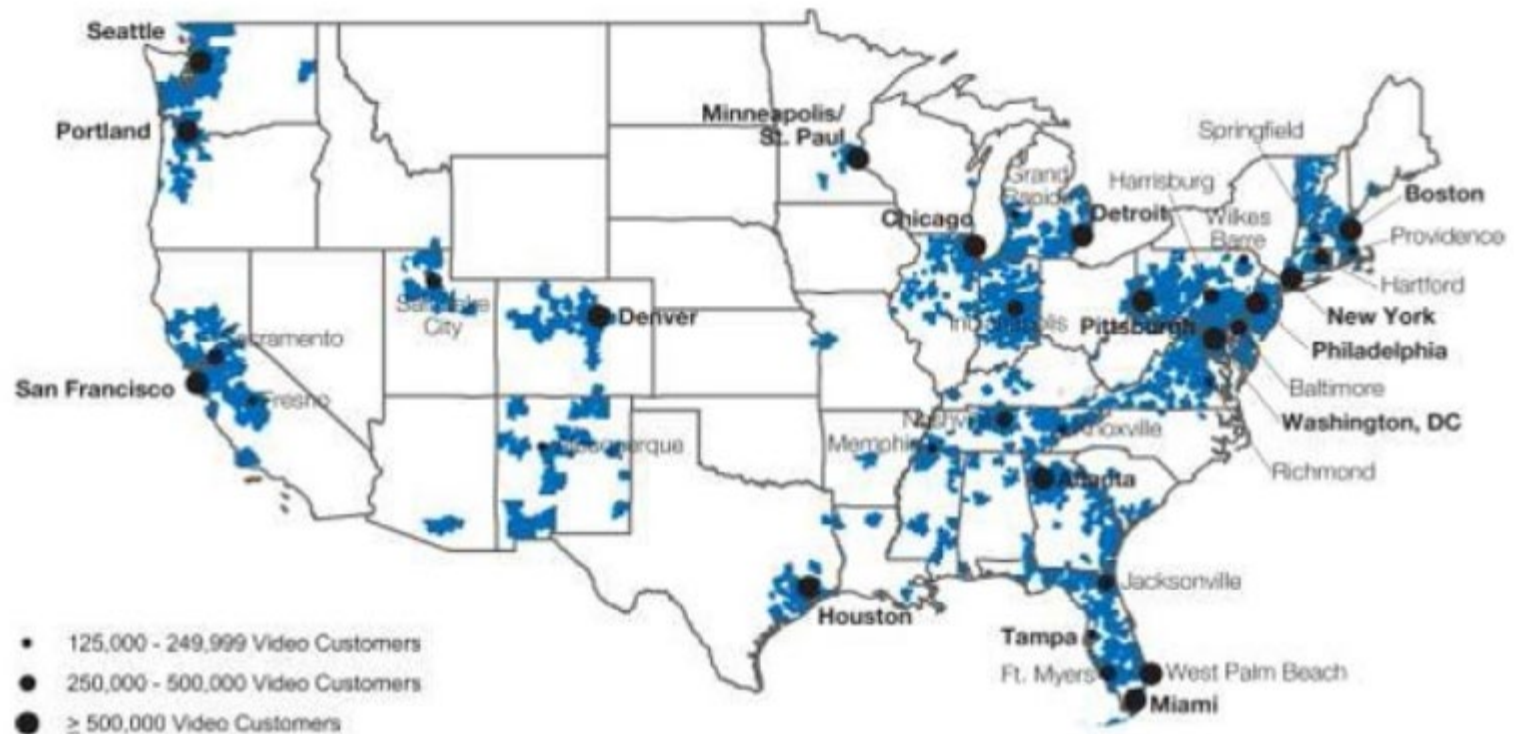
- ✓ Expanded cable offering ... strong management team
- ✓ Chance to create new offerings in key segments – i.e, sports
- ✓ Larger Internet presence ... additional capabilities



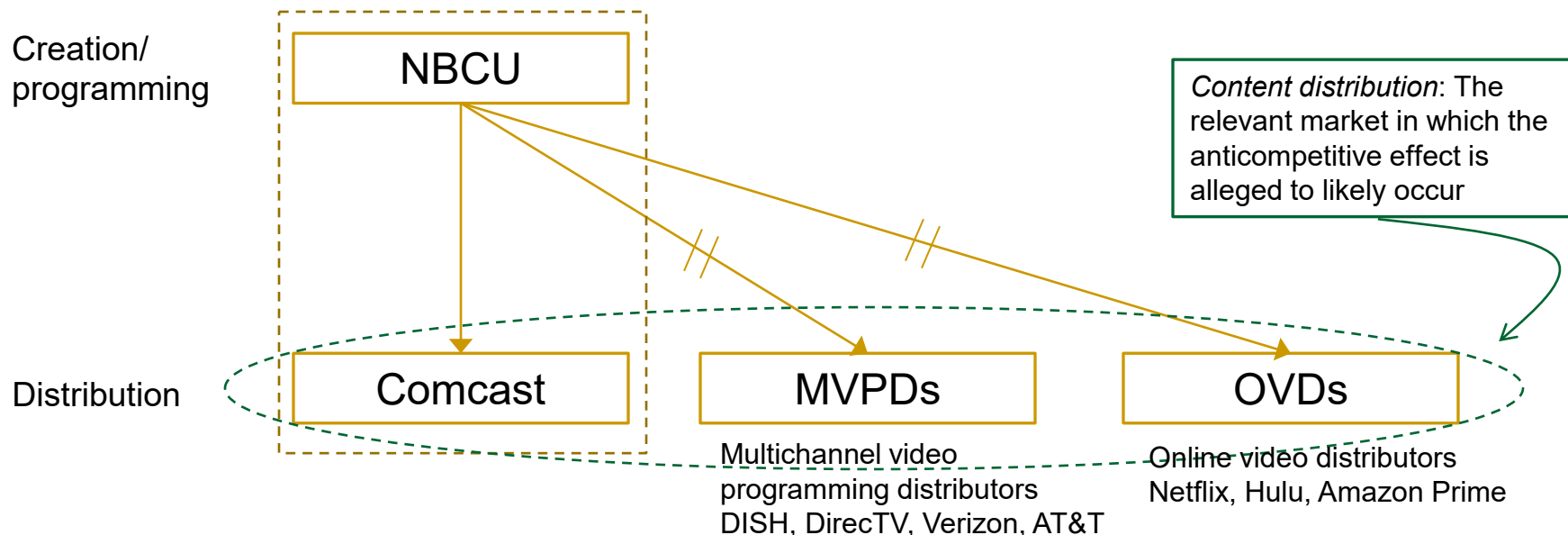
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Comcast/NBCUniversal

■ Comcast cable service areas (2014)



Comcast/NBCUniversal



■ Premerger

- NBCU has an incentive to deal with all content distributors

■ Postmerger

- Combined company has an incentive to withhold (or, more likely, increase the prices of) NBCU content to Comcast distribution competitors in Comcast service areas
 - NBCU-produced essential content
 - Local content produced by NBC's 10 O&O TV stations
- “Related products”
(in VMG terms)

Comcast/NBCUniversal

■ DOJ vertical concerns

1. JV gives Comcast control over NBCU's video programming
 - Comcast could limit competition with its cable systems by refusing to license (or, more likely, license at higher prices) NBC's essential programming content to—
 - Multichannel Video Programming Distributors (MVPDs),¹ and
 - Online Video Programming Distributors (OVDs)²
2. JV gives Comcast control of NBC's 10 O&O TV stations and their local content
 - Comcast could raise fees for retransmission consent for the NBC O&Os or effectively deny this content to certain video distribution competitors of Comcast cable systems

■ DOJ horizontal concern

3. JV gives Comcast control over NBCU's 32% interest in Hulu³
 - Comcast could use its rights to impede Hulu's development as a OVD competitor

¹ Includes cable overbuilders (primarily RSN), direct broadcast satellite services (DirecTV and EchoStar DISH), and telephone companies (e.g., Verizon Fios).

² Includes “over the top” (OTT) services delivered over the Internet but not through a cable system set-top box.

³ Premerger, Hulu was a joint venture among Fox, NBCU, Disney, and Providence Equity Partners.

Comcast/NBCUniversal

- Source of the threatened vertical anticompetitive harm:

The power to refuse to license highly consumer-valued content to programming and distribution rivals for which the rivals have no adequate substitutes

- *Solution*: Eliminate market power otherwise created by the vertical arrangement by providing for—
 - ❑ Mandatory licensing of content
 - ❑ Arbitration over pricing disputes

Comcast/NBCUniversal

■ DOJ consent decree¹

1. Traditional competitors

- Coordinated with the FCC—FCC order requires the JV to license NBCU content to Comcast's cable, satellite, and telephone company competitors
- Not included in DOJ consent decree as redundant

2. Online video distributor competitors

- a. Must make available the same package of broadcast and cable channels that JV sells to traditional video programming distributors
- b. Must offer broadcast, cable, and film content similar to, or better than, the distributor receives from JV's programming peers
 - NBC's broadcast competitors: ABC, CBS, Fox
 - Largest cable programmers: News Corp., Time Warner, Viacom, and Walt Disney
 - Largest video production studios: News Corp., Sony, Time Warner, Viacom, Walt Disney
- c. Requires commercial arbitration if parties cannot reach an agreement on license terms
- d. Prevents restrictive licensing practices and retaliation
- e. Prohibits Comcast from unreasonably discriminating in the transmission of an OVD's lawful traffic over Comcast ISP

¹ DOJ action joined by five state attorneys general: California, Florida, Missouri, Texas and Washington.

Comcast/NBCUniversal

- DOJ consent decree

- 3. Hulu

- Requires Comcast to relinquish voting and other governance rights in Hulu
 - Precludes Comcast from receiving confidential or competitively sensitive information about Hulu's operations
 - BUT allowed Comcast to retain NBCU's equity interest in Hulu



AT&T

TimeWarner

The deal

- AT&T to acquire Time Warner for \$85.4 billion

- Announced Saturday, October 22, 2016
- Valued at \$107.50 per share of TWX
 - About 35.7% premium over 10/19 closing price (\$79.24)
 - Indicates a \$22.2 billion premium over preannouncement market cap
- Half cash/half stock
 - \$53.75 per share in cash
 - AT&T stock valued at \$53.75 per share
 - Subject to a collar:
 - 1.437 AT&T shares if below \$37.411 at closing
 - 1.3 AT&T shares if above \$41.39 at closing
- TW shareholders will own about 15% of combined company

- Accretive with first 12 months

- Synergies

- > \$1 billion in annual run rate cost synergies within 3 years of closing



Combined firm

Content Creation/Programming

Time Warner

2016 revenues: \$29.3

HBO

\$5.9 billion

- HBO
- HBO Now
- HBO Go
- Cinemax

Turner

\$11.4 billion

- CNN
- TBS
- TNT
- Cartoon Network
- Adult Swim
- Bleacher Report
- Turner Sports
- Others



\$13.0 billion

- Warner Bros. Pictures
- New Line Cinema
- Warner Bros. Home
- Warner Bros. Television Group
- Warner Bros. Digital Networks
- The CW
- Others

Content Distribution



AT&T

2016 revenues: \$163 billion



AT&T

- 2d largest wireless: 138.8 million mobile subscribers
- 3.7 million TV subscribers (U-verse)
- 3d largest broadband: 14.3 million consumer broadband subscribers
- 10.3 million consumer voice subscribers



DIRECTV

- Largest MVPD: 20.6 million satellite TV subscribers
- 0.8 million IPTV subscribers (DirecTV Now)

Subscriber figures as of 2017 Q3 (U.S. only)

Business rationale

■ The AT&T problem

- Landline business in decline
- Core wireless business had slowed with market saturation
- Massive increase in wireless data usage straining network and creating serious public perception problems

■ Aborted purchase of T-Mobile in 2011

- Announced: March 20, 2011
 - \$39 billion purchase price in stock and cash
 - Purpose: Relatively inexpensive way to add additional spectrum
- Terminated: December 10, 2011 in the face of DOJ court action and FCC staff opposition
 - Paid antitrust reverse termination fee of \$4.2 billion



■ Purchased DirecTV in 2014

- Nation's second-biggest pay TV provider (behind Comcast)
- \$48.5 billion equity value / \$67.1 billion transaction value
 - Deal premium: About 30%
 - Generates about \$2.6 billion in free cash flow annually for investment in mobile spectrum/infrastructure
 - Provides nationwide pay-TV footprint for bundles in an increasingly competitive “triple play” world
 - Increases scale when competitors are consolidating (see then-pending Comcast/TWC merger)
 - Cost synergies expected to exceed \$1.6 billion annual run rate by year three



Business rationale

- Acquisition of DirecTV creates new problems
 - ❑ Created largest pay TV provider but owned little content
 - ❑ New content-driven companies causing declining video subscriptions for traditional pay TV business
 - ❑ Distribution competitors buying content companies (squeezing available content)
 - ❑ TV advertising revenues declining as advertisers increasingly shift to “targeted” advertising on Google, Facebook and other digital platforms



PlayStation Vue



Deal rationale

■ Solution: Buy Time Warner

- Time Warner could provide AT&T with—
 - The Time Warner content libraries
 - Major networks (including TBS, TNT, CNN, HBO)
 - New and innovative content through Warner Bros.
 - The ability to experiment with and develop innovative video content
- AT&T could provide Time Warner with—
 - Access to customer relationships
 - Valuable data about the consumers of its programming enabling more “targeted” advertising
- Combined company could create sweeteners for AT&T’s broadband, cable, and wireless bundles
 - E.g., discounted or free HBO
- Combined company could use TW’s annual net income of almost \$4 billion and expected annual run-rate synergies of \$1 billion to help—
 - Finance further investments in spectrum and infrastructure, *and*
 - Maintain AT&T’s shareholder dividend



The AT&T/Time Warner purchase agreement

AGREEMENT AND PLAN OF MERGER

among

TIME WARNER INC.

AT&T INC.

and

WEST MERGER SUB, INC.

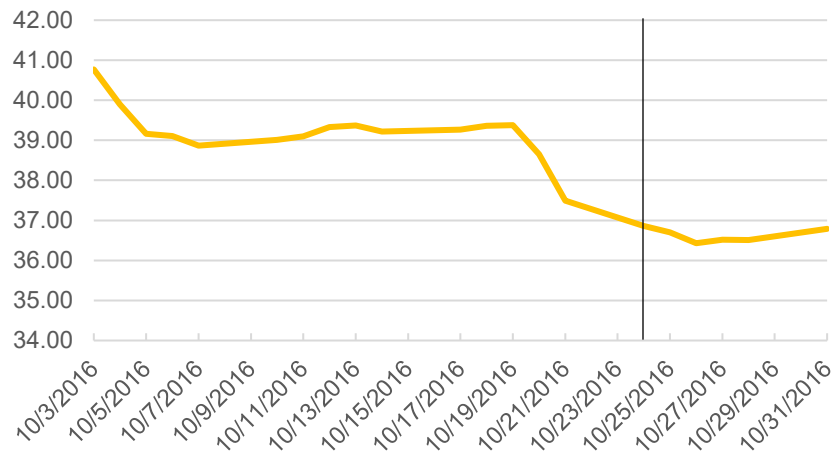
Dated as of October 22, 2016

- Covenants
 - “Reasonable best efforts” to consummate deal
 - Cooperation/consultation covenant (but no “buyer control” provision)
 - Litigation covenant
 - Qualified “hell or high water” (HOHW)—
 - No Combined Entertainment Group Effect
 - No Regulatory Adverse Material Effect
 - No increase in aggregate capital expenditures
- Conditions
 - HSR waiting period expiration or termination
 - Other merger control clearances
 - Brazil, Canada, China, the European Union, and Mexico
 - No government consent having a Regulatory Material Adverse Effect
 - No law or order enjoining transaction
- Termination
 - Termination date: October 22, 2017 (one year)
 - If antitrust conditions fail, may be extended by either party by written notice up to April 22, 2018 (six-month extension)
 - Antitrust reverse termination fee: \$500 million
 - 0.6% of equity value (\$85.4 billion)
 - Public deals over last three years: Mean: 4.7%; Median: 4.4%

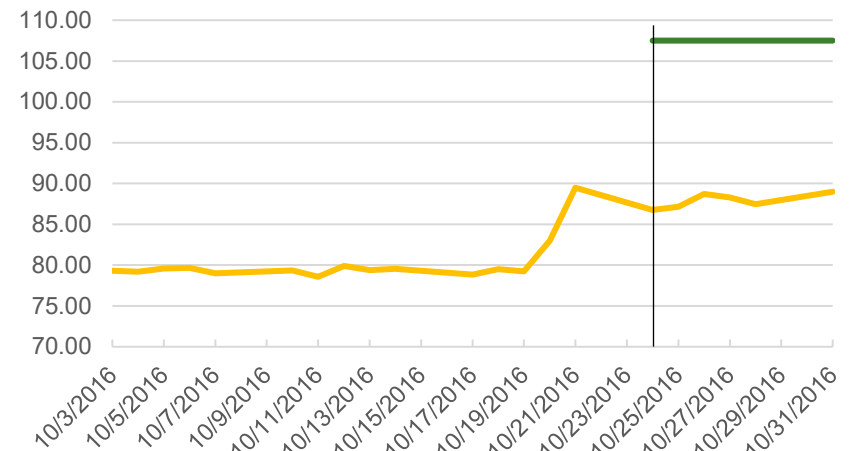
Market reaction

- Market skeptical
 - Was this the second coming of AOL Time Warner?
 - Will the deal be blocked by antitrust concerns?

**AT&T (T) STOCK PRICE
October 2016**



**TIME WARNER (TWX) STOCK PRICE
October 2016**

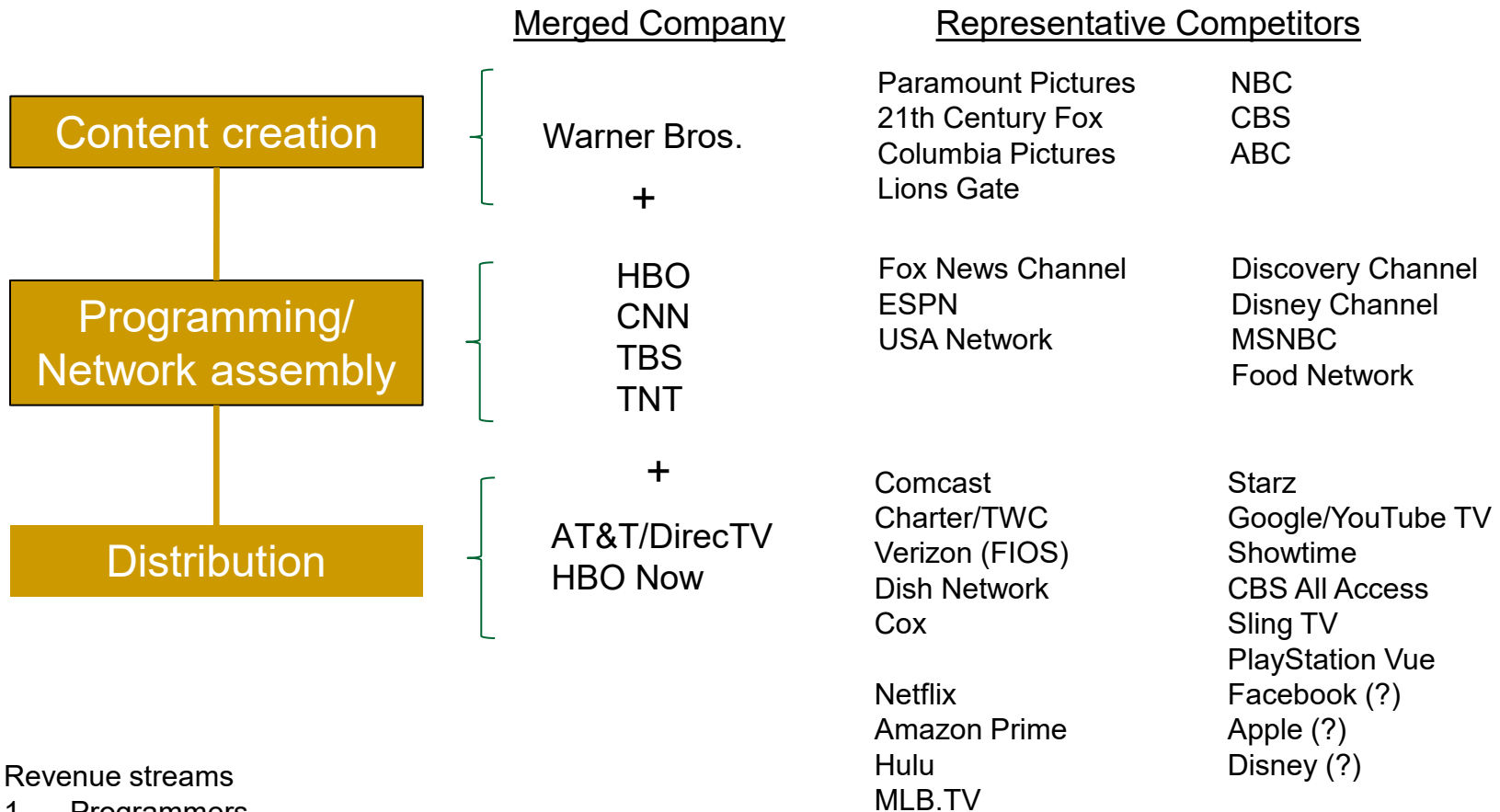


Announced Saturday, October 22, 2016

— TWX closing price — AT&T offer price

	AT&T		TW		
	Closing	%Δ	Closing	%Δ	Offer
October 19, 2016	39.38		79.24		
October 24, 2016	36.30	-7.8%	86.74	9.5%	-19.3%

AT&T/Time Warner as a vertical merger



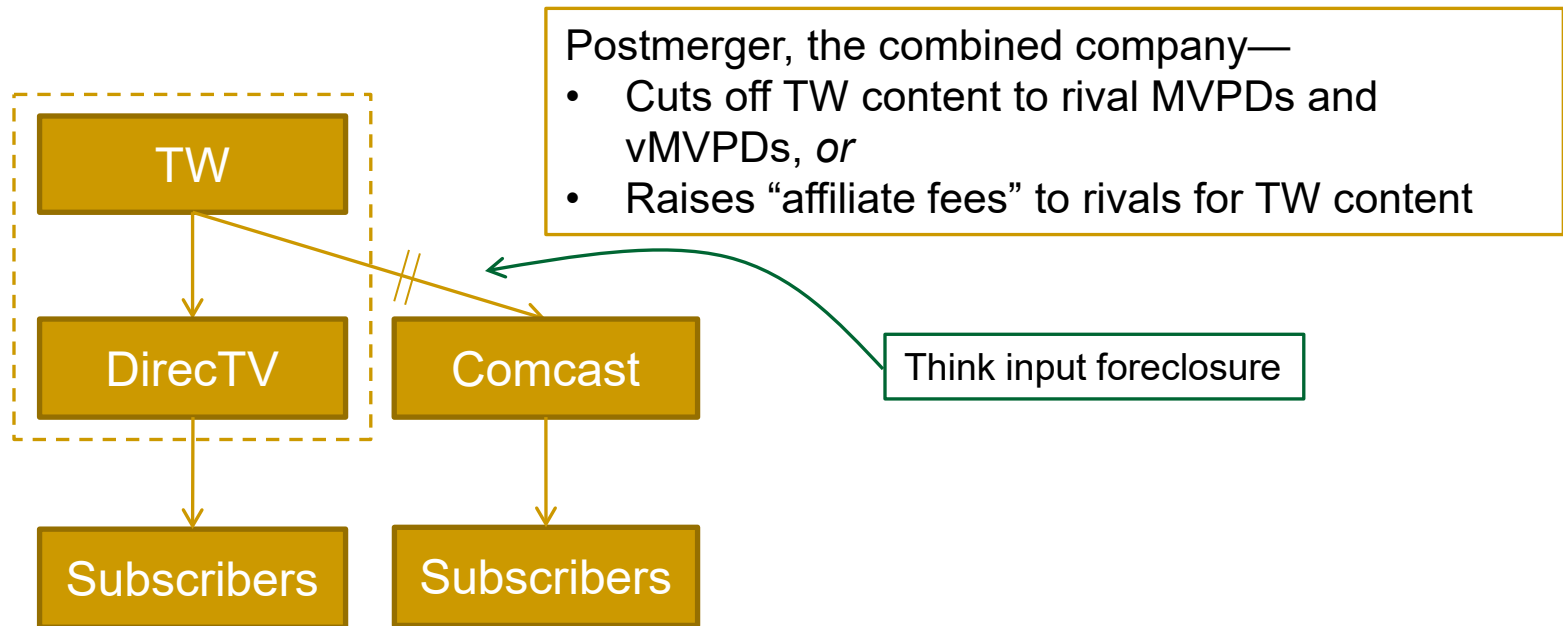
Revenue streams

1. Programmers
 - a. Affiliates fees paid by distribution companies to display programmer's content (usually on a per subscriber basis)
 - b. Advertising fees (usually involving 16 of the 18 minutes per hour of total advertising time)
2. Distribution companies
 - a. Subscriber fees
 - b. Advertising fees

SO WHAT WAS THE PROBLEM?

The DOJ's three theories of harm

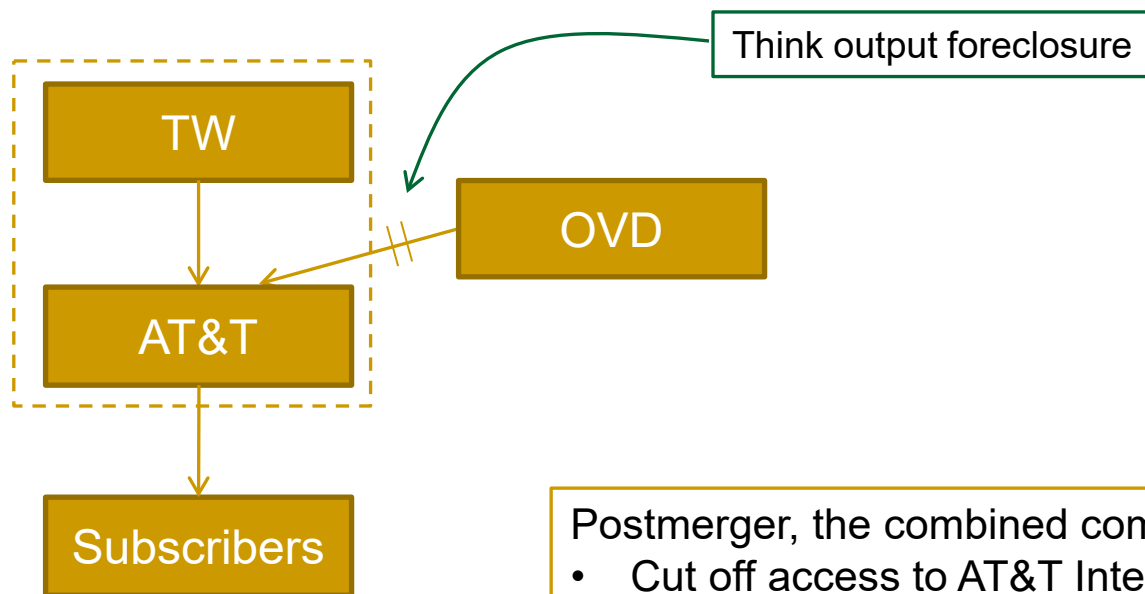
1. Foreclosure/raising rivals' costs (the "leverage theory")



Higher content prices means higher MPVD affiliate fees and subscriber rates

The DOJ's three theories of harm

2. Eliminate/discipline new disruptive competition



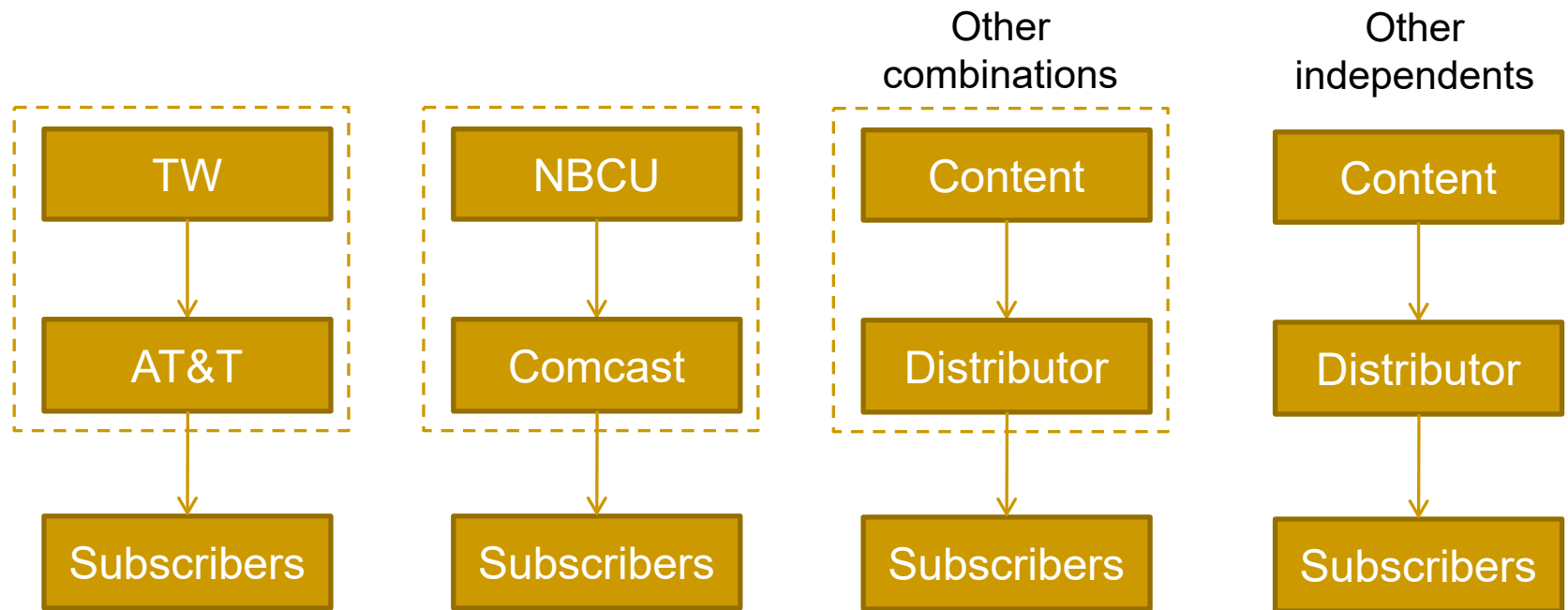
- Postmerger, the combined company could—
- Cut off access to AT&T Internet “pipes,” *or*
 - Raise prices for access to AT&T Internet “pipes”*

* Mechanically, DirecTV would demand lower affiliate fees for content

*Less competition from disruptive OVDs
means less innovation and higher subscriber rates*

The DOJ's three theories of harm

3. Facilitate tacit coordination through greater firm homogeneity



More vertical integration leads to higher subscriber rates

DOJ concerns were easy to anticipate

- Comcast/NBCUniversal was analytically similar in its vertical aspects

Content

Distribution



Comcast cable channels, inc.

- Versus
- The Golf Channel
- E Entertainment
- + pay G.E. \$6.5 billion in cash



- NBCUniversal cable channels (including USA, Bravo, E!, SyFy, CNBC and MSNBC)
- NBC network
- Universal Studios



Distribution

*Posed similar concern re foreclosure/RRC
of content for Comcast's rival MVPDs and OVDs*

Comcast/NBCUniversal vertical solution

- Source of the threatened vertical anticompetitive harm:

The power to refuse to license highly consumer-valued content to programming and distribution rivals for which the rivals have no adequate substitutes

- **Solution:** Eliminate market power otherwise created by the vertical arrangement by providing for—
 - Mandatory licensing of content
 - Arbitration over pricing disputes
- **Application to AT&T/Time Warner**
 - Offer to accept the same mandatory licensing/arbitration provisions as in the Comcast/NBCUniversal consent decree and FCC order

SO WHAT HAPPENED?

The DOJ investigation: 13 months

October 22, 2016	Deal announced
November 4, 2016	HSR reports filed
November 8, 2016	Trump elected president
December 8, 2016	DOJ issues second request
July 7, 2017	Reports of Trump's opposition to deal
September 27, 2017	Makan Delrahim confirmed to head the Antitrust Division
November 7, 2017	Reports of DOJ settlement demands for asset divestiture*
November 20, 2017	DOJ complaint filed

20 Depositions
25 million pages of documents

WHY DID THE INVESTIGATION TAKE SO LONG?

- * In a February 16, 2018, status conference, the DOJ revealed that it had made four settlement proposals to AT&T for the divestiture of various networks or DirecTV

Why did the DOJ reject the parties' fix?

- AAG Delrahim took a surprising strong position against “behavioral” relief in antitrust cases generally and AT&T/Time Warner in particular:
 1. Makes the Antitrust Division a regulatory agency when it is a law enforcement agency
 2. Behavioral relief is difficult to enforce
 - The sanction is contempt of court
 - Requires—
 1. “Clear and convincing evidence”
 2. Of a “clear and unambiguous” violation of the consent decree
 - Behavioral relief in vertical cases is almost inherently are not “clear and unambiguous”
 - Here, Delrahim would accept only divestiture relief and then only if Comcast divested either—
 - DirecTV, or
 - “Essential” Time Warner content (i.e., the Turner networks)
- } Designed to eliminate the vertical aspect of the transaction
- AT&T's response
 - Divestiture relief would eliminate all the reasons for the deal
 - Mandatory licensing/arbitration removes any possibility of anticompetitive harm
 - “*Litigate the fix*”: Make a binding mandatory licensing/arbitration contractual commitment to rival distributors and argue to the court that the deal is not anticompetitive with this fix in place

The DOJ complaint

- Filed November 20, 2017
 - Alleged the three theories of anticompetitive harm
- No states joined as plaintiffs
 - Compare Comcast/NBCUniversal with five states

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA
450 Fifth Street, NW
Washington, DC 20530;

Plaintiff,

v.

AT&T INC.
208 South Akard Street,
Dallas, TX 75202;

DIRECTV GROUP HOLDINGS, LLC
2260 E. Imperial Hwy,
El Segundo, CA 90245; and

TIME WARNER INC.
One Time Warner Center,
New York, NY 10019;

Defendants.

COMPLAINT

AT&T/DirecTV is the nation's largest distributor of traditional subscription television. Time Warner owns many of the country's top TV networks, including TNT, TBS, CNN, and HBO. In this proposed \$108 billion transaction—one of the largest in American history—AT&T seeks to acquire control of Time Warner and its popular TV programming. As AT&T has expressly recognized, however, distributors that control popular programming “have the incentive and ability to use (and indeed have used whenever and wherever they can) that control as a weapon to hinder competition.” Specifically, as DirecTV has explained, such vertically integrated programmers “can much more credibly threaten to withhold programming from rival

The DOJ complaint

- Query: Who in the Antitrust Division was not on the complaint?

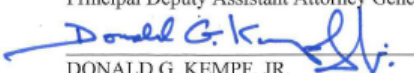
Dated: November 20, 2017

Respectfully submitted,

FOR PLAINTIFF UNITED STATES OF AMERICA:


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Assistant Attorney General for Antitrust


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United States Department of Justice
Antitrust Division
Telecommunications and Broadband Section
450 Fifth Street, N.W., Suite 7000
Washington, DC 20530
Telephone: (202) 514-5621
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The litigation: Preliminaries

- Tried in the District Court for the District of Columbia
- Bench trial before Judge Richard Leon
 - Appointed by George W. Bush
 - Assumed office on February 19, 2002
 - Began senior status on December 31, 2016
 - Same judge who entered the Comcast/NBCUniversal consent decree
 - Known for a sharp tongue and aggressive management of his courtroom



The litigation timetable

6.5 months	November 20, 2017	DOJ complaint filed
	November 27, 2017	Parties extend termination date to April 22, 2018 (latest date permitted by merger agreement)
	November 28, 2017	Parties file answer (includes commitment to arbitration solution to “litigate the fix”)
	December 7, 2017	Judge Leon sets trial to start on March 19, 2018 Expects decision in late April or May
	December 21, 2017	Parties amend merger agreement to extend termination date to June 22, 2018
	March 22, 2018	Six-week trial starts
7.5 months	June 12, 2018	Decision announced dismissing complaint
	June 14, 2018	Deal closes
	July 12, 2018	Notice of appeal filed
	July 19, 2018	Motion for expedited consideration granted
	December 6, 2019	Argued
	February 26, 2019	Decision announced affirming dismissal

The litigation: Burdens of proof

- Judge Leon applied same *Baker Hughes* three-step burden-shifting approach used in horizontal mergers—
 1. DOJ must prove a prima facie case of likely anticompetitive effect in a relevant market
 2. Burden of going forward shifts to merging parties to dispute the DOJ's prima facie case by showing sufficient evidence for the fact-finder to find that there was no anticompetitive effect
 3. Burden of persuasion returns to plaintiff to prove by a preponderance of the evidence that the transaction is in fact anticompetitive
- Other courts have followed Judge Leon in vertical cases¹

¹ See, e.g., *Illumina, Inc. v. Fed. Trade Comm'n*, 88 F.4th 1036, 1048 (5th Cir. 2023) (*Illumina/GRAIL*); *FTC v. Microsoft Corp.*, 681 F. Supp. 3d 1069, 1084 (N.D. Cal. 2023) (*Microsoft/Activision*); *United States v. UnitedHealth Grp. Inc.*, 630 F. Supp. 3d 118, 129 (D.D.C. 2022) (*UnitedHealth/Change*).

The litigation: Burdens of proof

- Judge Leon: Two initial observations on the DOJ's burden
 1. DOJ does not have the advantage of any presumptions in proving a prima facie anticompetitive effect
 - There is nothing like the *PNB* presumption outside of horizontal mergers
 - So Judge Leon modified Step 1 to eliminate reliance on the *PNB* presumption and generalized the requirement to prima facie proof of an anticompetitive effect in a relevant market
 2. Since market shares do not play a critical role in the analysis, the relevant market need not be as rigorously defined as in a horizontal merger, where market shares predicate the *PNB* presumption

The key litigation question

Will the merger give the combined company additional bargaining power in the licensing of content that will lead to increased prices for Turner content and hence to subscribers?¹



- DOJ: Yes
 - ❑ Business documents say so
 - ❑ Rival distributors say so
 - ❑ Expert economic analysis says so

¹ The DOJ agreed at trial that the combined company would not completely foreclose rival distributors and that the content would be licensed. It only litigated the case on raising rivals' costs.

The key litigation question

Will the merger give the combined company additional bargaining power in the licensing of content that will lead to increased prices for Turner content and hence to subscribers?

■ AT&T/Time Warner: No

- ❑ Transaction eliminates no competitors/increases no market shares
- ❑ Any increase in prices could result only from an increased willingness to walk away from a licensing deal and withhold content
- ❑ The incentive of the merged company is to license its content as widely as possible
- ❑ The DOJ agrees that license agreements will be reached with all rival companies and the merged company will not withhold its content
- ❑ The DOJ's evidence shows that there is a gross procompetitive savings of \$352 million annually to DirecTV from the elimination of double marginalization
- ❑ Prior vertical deals in industry did not result in increased prices
- ❑ No customer testified that it would accede to higher affiliate fees postmerger



The DOJ's evidence

1. Business documents
2. Testimony from rival MPVDs and OVDs representatives
3. DOJ expert economist

*The bulk of the trial and the opinion concerned Theory 1: Raising Rivals' Costs.
This will be our focus.*

The DOJ's evidence

1. Business documents



- DOJ: Three types of documents
 - *Business documents* showing that Turner content was very valuable to rival distributors
 - AT&T and DirecTV *regulatory filings* before the FCC in Comcast/NBCUniversal and other proceedings showed that each believed that the vertical integration would give the merged firm the power to raise content prices
 - *Ordinary course documents* from AT&T to the same effect

The DOJ's evidence

1. Business documents: Value of Turner content



- *Court:*
 - Most documents spoke to the value or “must have” nature of Turner content
 - BUT Turner content had this value premerger—need an explanation of how the merger would increase this value
 - The documents did not purport to explain the mechanism the combined company could use to increase the value of the content and so achieve higher negotiated affiliate fees postmerger than TW could obtain premerger

Court: Documents were not probative on the ability of the merged company to obtain higher prices for TW content

The DOJ's evidence

1. Business documents: AT&T/DirecTV regulatory filings in Comcast/NBCU



- *AT&T/DirecTV:*
 - Submitted comments to the FCC arguing that the Comcast/NBCU deal would result in higher prices for NBCU content to Comcast rivals
- *Court:* Context must be assessed carefully to determine probative value
 - Submitted in opposition by a competitor or a customer to a rival's transaction
 - Industry has changed significantly since the filings were made in 2010
 - Even accepting arguendo that vertical integration would increase bargaining power, says nothings about—
 - What the size of the price increase would be here, *or*
 - Whether it would outweigh the admitted savings to subscribers from the elimination of double marginalization

Court: Regulatory filings have little probative value on this deal and given very limited credit

The DOJ's evidence

1. Business documents: AT&T/DirecTV ordinary course documents



- The hearsay rule
 - *FRE 801(c)(definition)*: “Hearsay” means a statement that:
 - the declarant does not make while testifying at the current trial or hearing; *and*
 - a party offers in evidence to prove the truth of the matter asserted in the statement¹
 - *FRE 802 (rule)*: Hearsay is not admissible unless any of the following provides otherwise:
 - a federal statute;
 - these rules; or
 - other rules prescribed by the Supreme Court²

Is there an exception for ordinary course documents?

¹ Fed. R. Evid 801(c).

² *Id.* 802.

The DOJ's evidence

1. Business documents: AT&T/DirecTV ordinary course documents



- FRE 803(6) (exceptions to the hearsay rule):

Records of a Regularly Conducted Activity. A record of an act, event, condition, opinion, or diagnosis if:

Requirements

- (A) the record was made at or near the time by—or from information transmitted by—someone with knowledge;
- (B) the record was kept in the course of a regularly conducted activity of a business, organization, occupation, or calling, whether or not for profit;
- (C) making the record was a regular practice of that activity;

Proof

- (D) all these conditions are shown by the testimony of the custodian or another qualified witness, or by a certification that complies with Rule 902(11) or (12) or with a statute permitting certification; and
- (E) the opponent does not show that the source of information or the method or circumstances of preparation indicate a lack of trustworthiness.

The DOJ's evidence

1. Business documents: AT&T/DirecTV ordinary course documents



- *Court:*
 - Would not admit under the “business document” hearsay exception without a foundation, including testimony by the author on—
 - Reason for creation
 - Knowledge of the author about the subject matter
 - Reliance on the document by senior decision-makers

“Witnesses would be able to contextualize and explain the technical and lengthy documents at issue, which might otherwise be misunderstood or selectively cited in post-trial briefs.”

Court: DOJ elected not to present foundation witnesses, so AT&T and DirecTV ordinary course documents on which the DOJ planned to rely were not admitted into evidence

The DOJ's evidence

2. Testimony from rival MPVDs and OVDs



- *DOJ:* Would show that rival distributors believed—
 - The transaction would give AT&T increased bargaining power
 - AT&T would use this power to raise the prices to rival distributors for TW content

- *Court:*
 - In vertical cases, where customers are also competitors, testimony could reflect self-interest rather than genuine concerns
 - Witnesses could not explain the mechanism by which the bargaining postmerger would result in prices higher than those reached in premerger bargaining
 - No customer would testify that it would accede to demands by the merged company for increased affiliate fees

Court: Testimony from rivals that transaction would raise prices and diminish innovation not credited

The DOJ's evidence

3. Economic expert testimony



- DOJ expert: Carl Shapiro
 - Professor of Business Strategy, UC Berkeley
 - Former chief economist, Antitrust Division (twice)
 - A principal author of the 2010 DOJ/FTC Horizontal Merger Guidelines
 - Former Member, Council of Economic Advisers
 - Ph.D in Economics, MIT (1981)
 - Very experienced trial expert witness



- DOJ: Expert evidence will show that—
 1. The transaction would give AT&T increased bargaining power
 2. AT&T would use this power to raise their prices for TW content
 3. Subscribers on balance would be harmed

Shapiro's approach

■ Basic idea

- To assess whether the transaction is anticompetitive on balance, must determine—
 1. The savings resulting from the elimination of double marginalization
 2. Against the loss resulting from the increase in prices to DirecTV's rivals
- If the aggregate dollar loss from higher prices is greater than the aggregate dollar savings from EDM, the deal is anticompetitive

From a consumer welfare perspective, what is going on here?

■ Steps

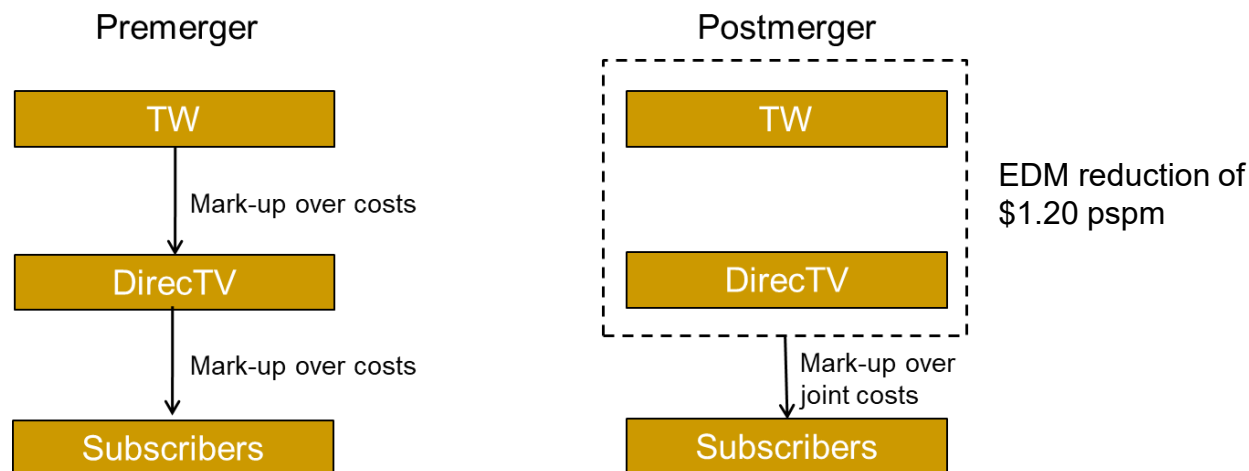
1. Quantify savings from EDM
2. Quantify the loss from the increase in prices to DirecTV's rivals
3. Compare the two

■ Query: Should these comparisons be made at the level of—

- The distributors
 - Can be computed directly
- Or the subscribers
 - Requires an analysis of “pass-on”

Remember, at a profit maximum, marginal revenue is equal to marginal cost. But if the demand curve is linear, the marginal revenue curve falls twice as fast as the demand curve. So only one-half of a cost change is “passed on” to customers, and the other one-half is absorbed by the firm.

1. Savings from EDM



■ Shapiro:

□ Calculations

- EDM marginal cost reduction per-subscriber per-month (pspm): \$1.20 (estimated from company documents)
- Number of DirecTV (premerger) subscribers with Turner content: 24.4 million
- Total marginal cost reduction for DirecTV (premerger)
 - Per month: $\$1.20 \text{ pspm} \times 24.4 \text{ million subscribers} = \29.3 million
 - Per year: \$352 million¹

Parties: Accepted Shapiro's EDM calculation—Presented no evidence

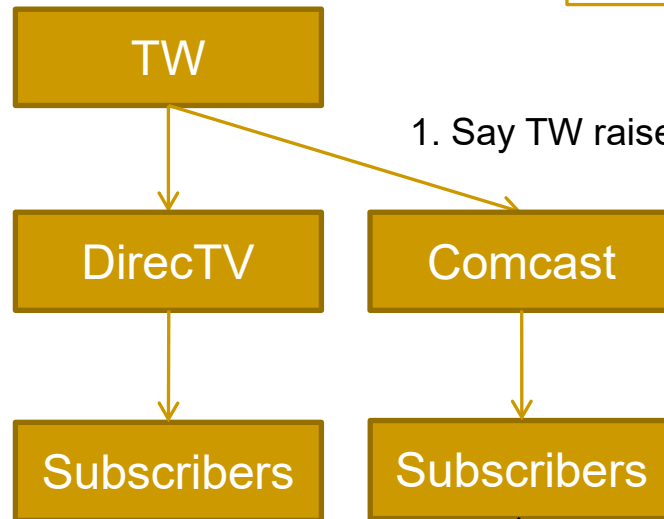
¹ Judge Leon in his opinion mistakenly characterized this as the savings passed on to DirecTV's subscribers, not the savings to DirecTV.

2. Price increase to rival distributors

■ Incentive to increase prices

Remember, in these diagrams I am using comcast as the proxy for all DirecTV rivals

Premerger



1. Say TW raises price p to Comcast

2. Comcast passes on some of the price increase to its subscribers

4. Other Comcast subscribers—who value TW content—switch to DirecTV → *TW recaptures TW margin on these customers premerger*

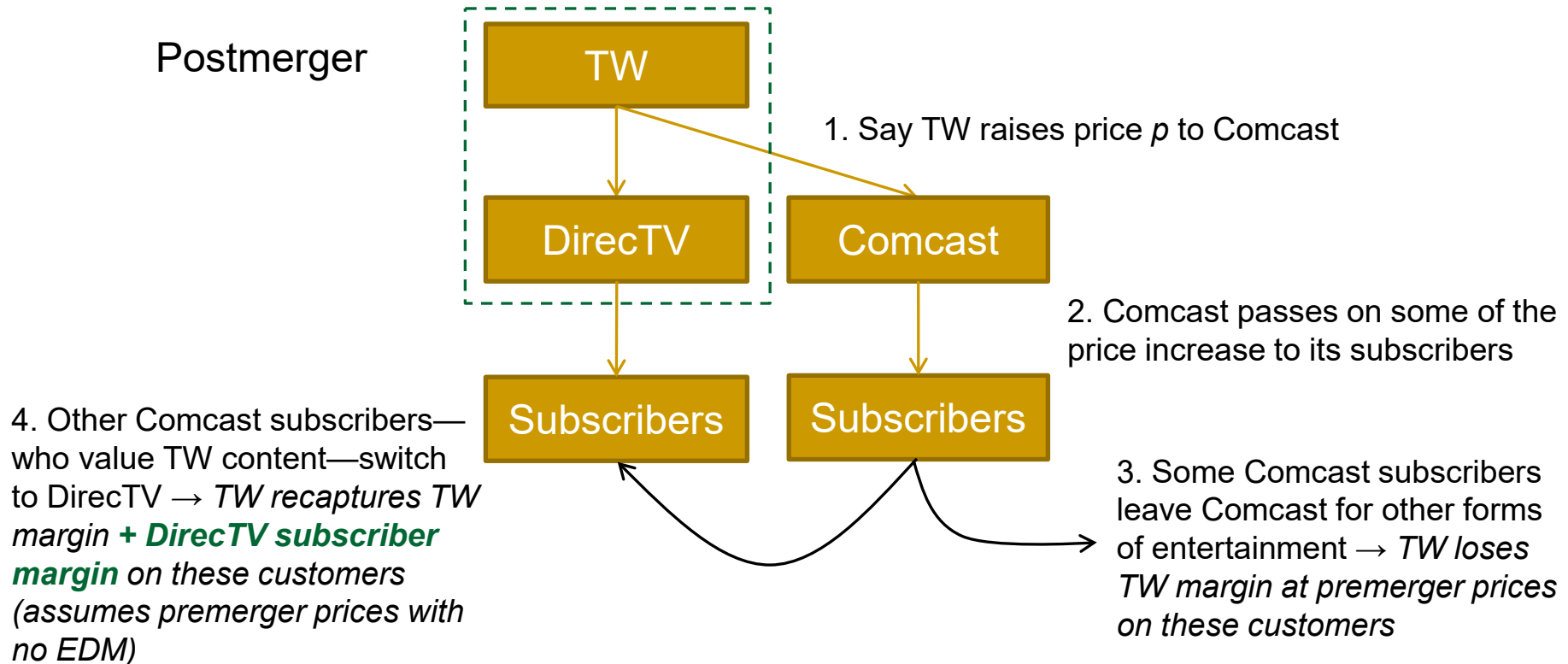
3. Some Comcast subscribers leave Comcast for other forms of entertainment → *TW loses TW margin on these customers*

Premerger, Turner maximizes profits when—

1. Its profit loss from the marginal subscribers that divert to the outside option
2. Equals its profit gain from—
 1. the price increase to the TW inframarginal customers, *and*
 2. the recapture of some marginal subscribers who divert to DirecTV and other distributors that carry Turner content

2. Price increase to rival distributors

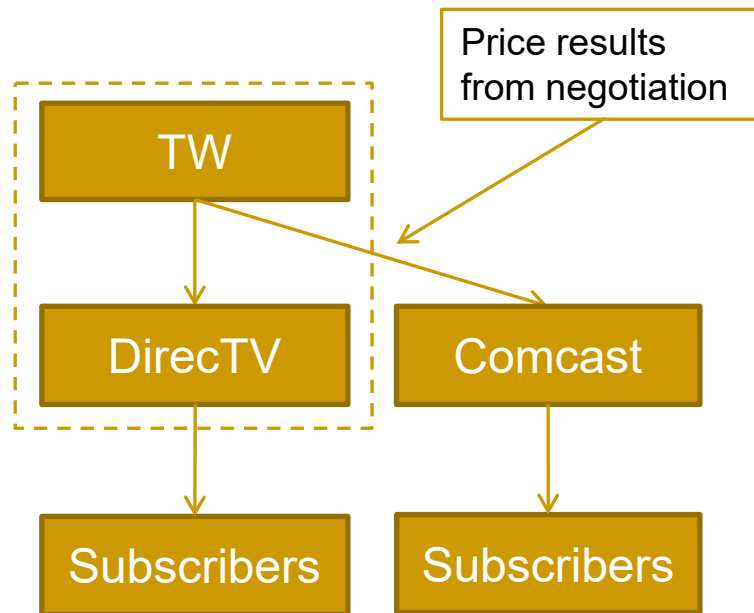
■ Incentive to increase prices



Postmerger, the capture of the **DirecTV margin** from marginal subscribers diverting to DirecTV upsets the premerger marginal revenue = marginal cost condition and incentivizes the combined firm to *increase* the price of its content to DirecTV rivals

2. Price increase to rival distributors

- Some problems



- * Typically 18 minutes of advertising in each hour of television programming
- Programmers: 16 minutes
 - Distributors: 2 minutes

- a. Very complicated affiliate relations contracts
- b. Tension with merged firm's goal to maximize viewership
 - Affiliate fees
 - Advertising fees*
- c. Very data intensive: Need—
 - ❑ TW margin on Comcast sales
 - ❑ Comcast pass-through rate
 - ❑ Diversion ratio for Comcast subscribers lost to the “outside option” with a subscriber rate increase
 - ❑ Diversion ratio for Comcast subscribers diverted to DirecTV with a subscriber rate increase
 - ❑ TW margin on DirecTV premerger sales
 - ❑ DirecTV margin on new subscribers
 - ❑ Advertising data
- d. TW does not “set” the price with distributors (inc. DirecTV premerger)
 - ❑ Price results from a *negotiation*
 - ❑ ∴ Need a *bargaining model*
 - ❑ Shapiro used the *Nash bargaining solution*

2. Price increase to rival distributors

■ The bargaining game

□ Basic setup

- Two parties—call them A and B—can cooperate to generate a joint benefit
 - The joint benefit is called the *gains from trade* or *surplus from trade*
- To reach agreement, they must decide how to divide those gains
- If they fail to agree, each party receives a disagreement payoff (their outcome from no deal)

□ Simple example: A house sale

- Seller (A) owns a house worth \$400,000 to her (the lowest price at which she would sell)
- Buyer (B) values the house at \$500,000 (the highest price he would pay)
- A sale at any price between \$400,000 and \$500,000 makes both better off
- Gains from trade = \$100,000
- Distribution of the gains
 - Seller gains: Sale price – \$400,000
 - Buyer gains: \$500,000 – sale price
 - The total surplus from trade is \$100,000
- The *bargaining problem*: How will A and B divide that \$100,000 surplus through negotiation?

*The **Nash bargaining solution** provides a theoretically grounded answer—predicting the price that splits the surplus according to a set of fairness and consistency axioms*

2. Price increase to rival distributors

■ The Nash Bargaining Solution¹

- Axiomatically derived—Results from theory, not empirical observation or testing
- Nash axioms: Look for a solution that satisfies these requirements—
 1. Pareto efficiency
 - Must be impossible to make one party better off without making the other worse off
 2. Symmetry
 - If the problem swaps the players, the solution will swap their outcomes as well
 3. Invariance to affine transformations
 - The solution should be invariant to positive linear transformations of the utility functions
 - For geeks:
 - An affine transformation of x into y is of the form: $y = a + bx$
 - *Example:* Adding \$10 to every entry in the payoff matrix results in the original solution plus \$10
 - *Example:* Doubling every entry in the payoff matrix results in the original solution doubled
 4. Independence of irrelevant alternatives
 - If the set of feasible agreements is reduced but the original solution remains feasible, the solution should not change
 - This ensures that the bargaining outcome is not influenced by options that were never going to be chosen

Basic result: Negotiating parties **split the total net gains from trade** between the parties to maximize the product of their respective individual gains

¹ John F. Nash Jr., *The Bargaining Problem*, 18 *Econometrica* 155 (1950).

2. Price increase to rival distributors

■ The Nash Bargaining Solution

□ Game 1: Agree on how to split \$100 or get nothing

- Mary and Bob have \$100 to split
- If they agree on a division s (the fraction of \$100 Mary gets),
 - Mary gets \$100s
 - Bob gets \$100(1-s)

This is called the *disagreement payoff*

- If they fail to agree, they each get nothing
- They have equal bargaining power
- *Nash bargaining solution*: Pick s to maximize the *product* of the Mary's and Bob's respective gains—

$$\text{Max}_s [100s][(1-s)100]$$

Mary's gain with agreement

Bob's gain with agreement

- Nash bargaining solution in this problem: $s = 0.5$
 - They agree on a division where Mary get \$50 and Bob gets \$50

2. Price increase to rival distributors

■ The Nash Bargaining Solution

□ Game 2: Agree on how to split \$100 with *disagreement payoffs*

- Mary and Bob have \$100 to split

- If they agree on a division s ,

- Mary gets $100s$
- Bob gets $100(1-s)$

- If they fail to agree

- Mary gets \$20
- Bob gets \$10

In the trade, these are called the *best alternative to a negotiated agreement (BATNA)*

- They have equal bargaining power

- *Nash bargaining solution*: Maximize the product of the Mary's and Bob's respective *net* gains from trade over their respective BATNAs—

$$\text{Max}_s [100s - 20][(1-s)100 - 10]$$

Mary's net gain with agreement

Bob's net gain with agreement

- Nash bargaining solution: $s = 0.55$

- With the disagreement payoffs, the gains from trade are \$70 (= \$100 - \$20 - \$10)
- The parties split the gains from trade (which they add to their respective disagreement payoffs)
- So they agree on a division where Mary get \$55 and Bob gets \$45

Under the Nash bargaining solution, the person with the higher disagreement payoff gets a proportionally higher share

2. Price Increase to Rival Distributors

- The Nash bargaining model: Some observations
 - The model compares outcomes with and without an agreement
 - Agreed-upon payoffs with a deal
 - Disagreement payoffs without a deal
 - BUT in the model the parties *always* reach agreement provided that there are gains from trade
 - So the model compares an outcome that will always happen against an outcome that will never happen
 - Still, the magnitude of the disagreement payoffs determine the split of the gains from trade
 - The credibility of the threat to walk away from the deal is irrelevant in the model
 - Holding all other things equal, an increase in the disagreement payoff for Player *i* will improve the bargaining outcome for Player *i* and decrease the bargaining outcome for the other player
 - True even if the gains from trade are very large compared to the disagreement payoffs
 - □ **Key result:** More precisely, Player *i*'s bargaining outcome will improve by one-half of the increase in its disagreement payoff (holding all other things constant)

Therefore, to determine the increase in the transaction price, all you need to know is the difference between the original and increased disagreement payoffs

2. Price Increase to Rival Distributors

■ The Nash Bargaining Solution: Application to AT&T Time Warner



- Shapiro (somewhat simplified)
 - *Premerger*: Think of TW licensing in the context of Game 2 where—
 - T is the total profits of TW and Comcast together if they do a deal
 - s is the agree-upon share of the total profits for TW
 - D_{TW} is the profit TW makes in the absence of a Comcast agreement
 - Includes TW margin on Comcast customers who divert to other services with TW content
 - D_C is the profit Comcast makes in the absence of a Comcast agreement
 - Nash bargaining solution:

$$\text{Max}_s [sT - D_{TW}] [(1-s)T - D_C]$$

But remember, there will *always* be an agreement if there are gains from trade

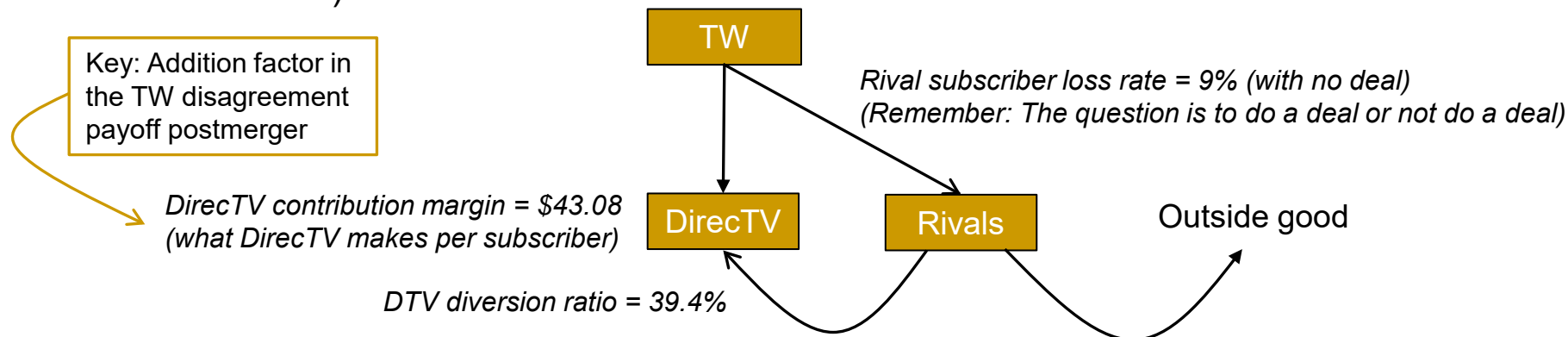
- *Postmerger*: Same as above *except*—
 - TW's BATNA also includes the DirecTV's subscriber profits M_{DTV} from Comcast customers who divert to DirecTV in the absence of an agreement
 - New Nash bargaining solution:

$$\text{Max}_s [sT - (D_{TW} + M_{DTV})] [(1-s)T - D_C]$$

Since TW's disagreement payoff is greater postmerger than premerger by M_{DTV} , the Nash bargaining solution says that TW will obtain a greater share of the total profits of a deal—that is, charge a higher content rate—postmerger than premerger

2. Price increase to rival distributors

- The Nash Bargaining Solution: Application to AT&T Time Warner
 - *Illustrative example: A Turner-Dish bargaining game (with completely made-up numbers)*



- Difference between postmerger and premerger TW disagreement payoffs:

$$\begin{aligned}
 \Delta o_{TW}^{ND} &= \text{Rival subscriber loss rate} \times \text{DTV diversion ratio} \times \text{DTV contribution margin} \\
 &= 9.0\% \times 39.4\% \times \$43.08 \\
 &= \$1.53 \text{ per per subscriber per month (gain in TW disagreement payoff postmerger)}
 \end{aligned}$$

- Price increase implied by Nash bargaining solution = $\frac{\Delta o_{TW}^{ND}}{2} = \frac{\$1.53}{2} = \$0.76 \text{ pspm}$
- If generally true for all 64 million subscribers of 3P MPVDs that license Turner content premerger, this implies an annual cost increase of **\$586.6 million**

2. Price Increase to Rival Distributors

- The Nash Bargaining Solution: Application to AT&T Time Warner



- Shapiro

- Used industry data to predicate the Nash bargaining model
- Cost increases to *rival MVPDs*—
 - \$48.9 million per month
 - \$586.6 million per year
- Cost increases to *rival MVPD subscribers*: Depends on pass-through rate
 - “Documentary evidence from MVPDs suggests that they ‘aim to cover programming costs through price increases.’”²
 - Depending on assumptions, cost increases to rival MVPD subscribers range from—
 - \$9.8 million per month \$117.6 million per year (20% pass-through)
 - \$23.9 million per month \$286.8 million per year (49% pass-through)

3. Balance of benefits and harms

■ Shapiro: Competitive analysis of effect on MVPDs

- A vertical merger is anticompetitive if the costs increases to rival MVPDs outweigh the EDM marginal cost decreases to DirecTV
- Calculation:
 - Price increases to rival MVPDs from higher affiliate fees \$48.9 million per month/\$586.6 million per year
 - Price decreases to DirecTV from EDM \$29.3 million per month/\$352 million per year
 - Net impact on aggregate MVPD costs +\$19.6 million per month/\$235.4 million per year
- The net wealth transfer to merged firm from all MVPDs (including DTV) resulting from the merger
- Represents a net 5% increase in the aggregate cost of Turner content to all MVPDs (including DTV)

■ Shapiro: Competitive analysis of effect on subscribers

- Depends on the pass-through rates of both the price increases and price decreases
- If they are the same, then if the relationship between savings and losses from prices increases is preserved at the subscriber level
- Did a variety of other calculations, all showing the loss to subscribers of rival distributors is greater than the gain to DirecTV subscribers from EDM

Conclusion: The merger shifts wealth from subscribers to the merged firm → Anticompetitive

2. Price increase to rival distributors

- The Nash Bargaining Solution: Application to AT&T Time Warner



- *Court: Not convinced of the model's applicability*

- The model is a “Rube Goldberg” device
- Nash bargaining solution has not been proven empirically to predict outcomes—it is just a theoretical construct
- The model's results defy intuition

- *WDC example* (trying to imagine what Judge Leon was thinking):

- Say Mary and Bob play split \$100 with zero disagreement payoffs and agree to a 50/50 split
- Now say that Mary and Bob play the game a second time but Mary's fairy godmother funds a \$20 disagreement payoff for Mary
- If they agreed on a 50/50 split the first time, why would they agree on 60/40 split in favor of Mary (the Nash bargaining solution) the second time?
 - Mary gains \$30 more with a 50/50 split than with no agreement
 - So Mary is going to make a deal rather than walk away
 - And Bob knows Mary is willing to accept a 50/50 split from playing the first game)
- So the most likely outcome in the second game is the same 50/50 split that we observed in the first game
- Applied to the TW/Comcast licensing negotiation, this suggests that TW will *not* be able to negotiate a higher price postmerger

2. Price increase to rival distributors

- The Nash Bargaining Solution: Application to AT&T Time Warner



- *Court: Not convinced of the model's applicability*
 - Shapiro's testimony on cross-examination did not help

Shapiro on cross-examination:

- “Bargaining is a dark art”
- May turn on “unpredictable factors”
- Including “personalities” and other “hairy stuff”

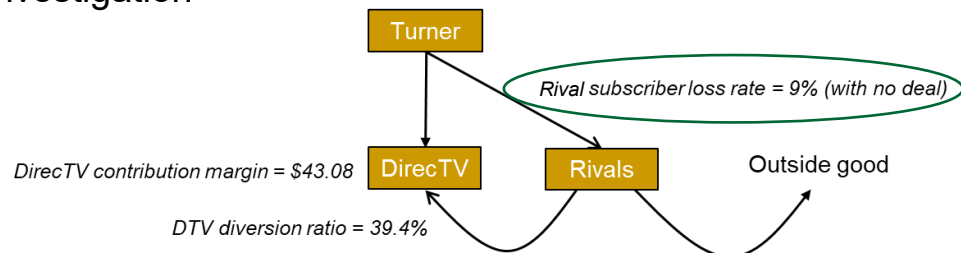
Court: The Nash bargaining solution lacks credibility as a predictor of TW negotiating outcomes—Cannot conclude from Shapiro's testimony that the prices to rival distributors will increase as a result of the transaction

2. Price increase to rival distributors

3. Rival distributor subscriber costs due to the price increase would be greater than the DirecTV subscriber savings



- *Court: Even if the model is applicable, failed to use reliable data*
 - Accepts the model for this part of the analysis
 - One of the critical numbers is the percentage of customers that rival MVPDs would lose if they did not carry Turner content on a permanent basis (the “subscriber loss rate”)
 - Shapiro used a 9% subscriber loss rate that he obtained from a Charter analysis presented to the DOJ in the course of the investigation



- BUT when the same analysis was presented to the Charter board of directors, it showed only a **5% subscriber loss rate**
- Shapiro—
 - was unaware of the board document,
 - could not explain the difference, *and*
 - agreed that under his model with a 5% subscriber loss rate, the gain to DirecTV subscribers from the elimination of double marginalization was greater than the loss to rivals' subscribers in higher subscription fees

Court:
Expert testimony not credited

The defense

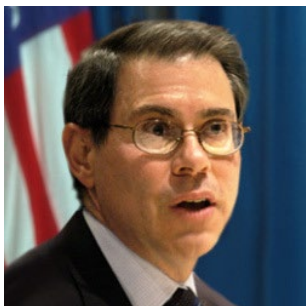


- AT&T/Time Warner
 - Largely attack the sufficiency of the DOJ's evidence



- AT&T Expert economist: Professor Dennis Carlton
 - Ph.D in economics from MIT in 1975
 - Economics professor with the University of Chicago since 1976
 - Co-authored the leading industrial organization textbook at the time
 - Deputy Assistant Attorney General for Economics at the Antitrust Division from 2006 to 2008

The defense



- ❑ Carlton examined four prior vertical deals in video programming and distribution to determine their effects postmerger on pricing
 - Prior vertical transactions
 - ❑ News Corp.'s acquisition of an interest in DirecTV in 2003
 - ❑ News Corp.'s sale of its interest in DirecTV in 2008
 - ❑ Split of Time Warner from Time Warner Cable in 2009
 - ❑ Comcast's acquisition of NBCUniversal in 2011
 - *Finding*: No statistical basis to support the claim that vertical integration resulted in higher prices, and in some cases, the deals resulted in lower prices



- ❑ DOJ/Shapiro
 - Conducted no independent analysis—Just attempted to distinguish Carlton's analysis by noting that all four transactions involved consent decree relief
 - *Carlton*: Correct, but AT&T/Time Warner committed to Comcast/NBCUniversal consent decree restrictions

The defense



■ Court

- Carlton's evidence "definitively shows that prior instances of vertical integration in the video programming and distribution industry have had no statistically significant effect on content prices."
- "[N]either the Government nor Professor Shapiro has given this Court an adequate basis to decline to credit Professor Carlton's econometric analysis."

The decision

- No violation of Section 7
 - DOJ failed to prove a prima facie anticompetitive effect (Step 1)
 - DOJ's model to show that the costs of increased prices to subscribers of distributor rivals would exceed the \$352 million in savings to DirecTV subscribers from the elimination of double marginalization was unreliable
 - Even accepting the DOJ model, the DOJ failed to establish the evidence necessary for the model to show that the costs of increased prices to subscribers of distributor rivals would exceed \$352 million
 - Largely credited AT&T/Time Warner testimony that the combined company had the incentive to license widely and not withhold content
 - Relied significantly on DOJ's concession that content would be licensed and not withheld
 - Could not understand how the deal increased the combined firm's bargaining power to obtain increased prices for Turner content in the absence of a credible threat to withhold content
 - No empirical evidence that vertically integrated firms in prior deals in the industry were able to increase prices to rival distributors
 - No need to reach—
 - Other offsetting procompetitive effects (Step 2)
 - Balancing (Step 3)
 - The effect of the mandatory licensing/arbitration “fix”



Final moves

■ Judge Leon—

- ❑ Held that the DOJ failed to prove its prima facie case that the AT&T/Time Warner merger would violate Section 7
- ❑ Told the parties that he would not enter a stay of his decision pending appeal and instead would allow the deal to close
- ❑ But did provide a temporary stay for seven days to permit the DOJ to notice its appeal and seek a stay from the D.C. Court of Appeals

■ The DOJ—

- ❑ Announced it would not seek a stay from the Court of Appeals
- ❑ Noticed its appeal on July 12, 2018

Final moves

- AT&T and Time Warner
 - Closed their transaction on June 14, 2018
 - Prior to the DOJ's July 12, 2018, notice of appeal
 - AT&T committed to—
 - Manage Time Warner as a separate business unit
 - Have no role in setting Time Warner's prices
 - Leave unchanged Time Warner employee compensation and benefits, *and*
 - Implement an information firewall between Turner and AT&T Communications to prevent the transmission of competitively sensitive information
- until the earlier of February 28, 2019, or the conclusion of the case¹

¹ See Letter to DOJ from AT&T (June 14, 2018) (attached as an exhibit to the Joint Motion to Modify Case Management Order (June 14, 2018)).

WHAT DID THE DOJ DO AFTER IT LOST IN DISTRICT COURT?

The DOJ's appeal

- After its loss on the merits, the DOJ's appealed to the Court of Appeals for the District of Columbia
- Problem
 - What are the grounds for reversal?
 - The likelihood of success turns in part on the standard of review on appeal

The DOJ's appeal

- Only appealed the rejection of the DOJ's RRC theory

The government established a reasonable probability that the AT&T-Time Warner merger would increase Time Warner's bargaining leverage and, thus, substantially lessen competition, in violation of Section 7 of the Clayton Act.

- More technically, the DOJ's contended that the district court erred in finding that the DOJ's evidence did not establish a prima facie case of anticompetitive harm that the merger would give the combined firm the incentive and ability to raise prices to AT&T's subscription TV distribution rivals
- Did not challenge the district court's findings that the merger would not anticompetitively—
 - Disrupt or foreclose online video distributors, *or*
 - Facilitate tacit coordination by creating greater firm homogeneity in the sale of programming and the distribution of content

The DOJ's appeal

■ Claimed errors

1. *Plain error* for rejecting the implications of the Nash bargaining model
2. *Plain error* for finding that Turner, in license fee negotiations, would ignore the profit-maximizing interest of the combined enterprise to increase prices
3. *Clearly erroneous* to reject the quantification of fee increases and consumer harm of Shapiro's model

■ Relief sought

- Vacate the judgment below
- Remand to the district court with instructions to undertake Step 2 and, if necessary, Step 3 of the *Baker Hughes* analysis of the DOJ's RRC theory

Standard of review

1. De novo for propositions of law
 - ❑ But did Judge Leon invoke any questionable propositions of law?
2. De novo for the application of the law to the factual findings
 - ❑ But did Judge Leon questionably apply the law to the factual findings?
3. “Clearly erroneous” for findings of fact
 - ❑ FRCP 52(a)(6):

Setting Aside the Findings. Findings of fact, whether based on oral or other evidence, must not be set aside unless clearly erroneous, and the reviewing court must give due regard to the trial court's opportunity to judge the witnesses' credibility.

- ❑ Highly deferential to the district court judge
- ❑ **Rule:** A factual finding is clearly erroneous “when, although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed”¹
- ❑ Findings that are plausible in light of the entire record are not clearly erroneous²

¹ Anderson v. Bessemer City, N.C., 470 U.S. 564, 573 (1985).

² *Id.* at 577.

Standard of review

4. “Plain error”: Error that is—

1. error;
2. is plain;
3. affects substantial rights; *and*
4. seriously affects the fairness, integrity, or public reputation of judicial proceedings

NB: “Plain error” may be asserted on appeal even if the error was not raised in the trial court¹

When you have nothing else, assert plain error

¹ Fed. R. App. P. 52(b) (“Plain Error. A plain error that affects substantial rights may be considered even though it was not brought to the court's attention.”).

The oral argument

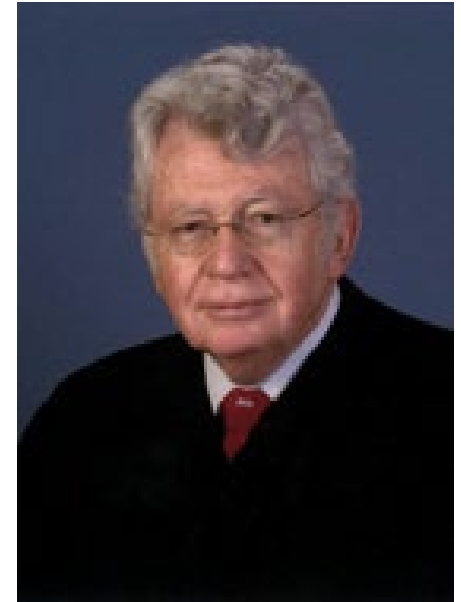
- Argued in the D.C. Circuit on December 6, 2018



Judith W. Rogers
(Clinton (1994): *Microsoft*, *Anthem*) (Obama (2014): *Osborn v. Visa*)



Robert L. Wilkins



David B. Sentelle
(Reagan: *Microsoft*, *Vitamins*)

[Audio: Oral Argument](#)

D.C. Circuit opinion¹

- Affirmed district court's dismissal of the case
 - Opinion by Judge Rogers for a unanimous court
 - Decided February 26, 2019
- Accepted the *Baker-Hughes* three-step burden-shifting approach
 - Adopted Leon change to replace the *Philadelphia National Bank* presumption:

Instead, the government must make a “fact-specific” showing that the proposed merger is “likely to be anticompetitive.”²

- Market definition—Not disputed
 - Product market: Multichannel video distribution
 - Geographic market: Over 1,100 local markets
 - But aggregated harms on a national level

¹ United States v. AT&T Inc., No. 18-5214 (D.C. Cir. Feb. 26, 2019).

² *Id.* at (quoting the Joint Statement on the Burden of Proof at Trial).

DOJ Argument #1

■ *Plain error* to reject the implications of the Nash bargaining model

[The district court] illogically and erroneously concluded that Time Warner will have *no* increased leverage post-merger because blackouts are “infeasible” so Time Warner cannot credibly threaten them. The court’s reasoning makes no sense, rendering clearly erroneous its analysis of the evidence on increased bargaining leverage.

- The Nash bargaining model, which the district court says it accepted (but did it?), is a “mainstream” economic model
- The model holds that if the bargaining leverage of a firm increases, its ability to achieve more of the “surplus” of the transaction in negotiations increases
- The Nash bargaining models holds that bargaining leverage increases when a party’s disagreement payoff increases
- The combined firm’s disagreement payoff is greater than Time Warner premerger because of the capture of of DirecTV subscriber margin from subscribers who would divert from the rival distributors to AT&T if the combined firm refused to license the rival with Time Warner content
- AT&T, in comments to the FCC in the Comcast/NBCUniversal proceeding, said that NBCU’s prices would significantly increase to Comcast’s rivals (including AT&T) on the same theory as the DOJ advanced here
- AT&T advanced this theory through its expert Prof. Michael Katz in support of its FCC application in 2015 to acquire DirecTV

DOJ Argument #1

■ Court of appeals response: Rejected

- District court did not reject Nash bargaining solution as a economic concept
- What it rejected was the *reliability* of the model to predict price increases resulting from a small increase in the TW disagreement payoff resulting from the merger:
 - DOJ only asserted that the model applied
 - DOJ's witnesses from rival distributors could not explain why they would be "forced" to accept higher prices as predicted by the model
 - Change in the disagreement payoff was small → District Court could properly conclude that a small positive change in the disagreement payoff would not cause Turner to take more risks:

Specifically noting the Time Warner CEO's analogy of the cost difference between having a 1,000-pound weight fall on Turner Broadcasting and a 950-pound weight fall on it — the difference being unlikely to change the risk Turner Broadcasting would be willing to take.

- Carlton's empirical study of the four prior deals in the space revealed no price increases
- AT&T has committed to mandatory licensing/arbitration, making this deal analogous to Comcast/NBCU
 - Shapiro admitted that his model did not take this into account—would require a new model

DOJ Argument #2

- *Plain error* to find that Turner, in license fee negotiations, would ignore the profit-maximizing interest of the combined enterprise to increase prices

The district court's determination that Time Warner would not exercise increased bargaining leverage post-merger also erroneously rejected evidence that a merged AT&T-Time Warner would maximize profits of the firm as a whole by imposing higher programming costs on rival distributors. The court's analysis rested on a fundamental misunderstanding of the principle of corporate-wide profit maximization: it treated the principle as a question of fact that must be proved "reasonable" in light of the record evidence."

- "The Supreme Court has adopted corporate-wide profit maximization as a principle of antitrust law, grounded in economic theory and corporate law, rather than treating the issue as one of fact." (citing *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 771 (1984)).
- Finding is "fundamentally inconsistent" with the court's finding that AT&T customers would benefit significantly from the merger through the elimination of double marginalization (which requires the combined firm to operate in jointly maximizing profits)
- AT&T's rivals testified that they expected their prices to increase as a result of the deal

DOJ Argument #2

■ Court of appeals response: Rejected

- District Court accepted proposition that combined firm would act to maximize its joint profits
- *Key question:* Who decides how best to pursue maximum joint profits?
 - An abstract economic model (EDM)
 - The business executives running the business
- Not error for the Court to reject the economic model and credit the testimony of the business executives
 - Not error for the Court to find that the economic model did not reliably predict a price increase (see above)
 - Not error for the Court to credit the business executives' testimony that it was in the profit-maximizing interest of the combined firm to maximize its distribution among distributors, not impose long-term blackouts
 - Especially in light of credible evidence that the combined firm could not increase prices to rival distributors

DOJ Argument #3

- *Clearly erroneous* to reject the quantification of fee increases and consumer harm of Shapiro's model

Having decided, illogically, that the merger would not lead to *any* increased bargaining leverage, the court nitpicked the values used in Professor Shapiro's modeling and articulated erroneous rationales for rejecting each value. Even defense experts offered values greater than zero; yet the court determined that Time Warner would not raise rivals' costs one cent.

- Subscriber loss rate (from a long-term blackout)
 - Shapiro: Between 9% and 14%
- Diversion rate
 - Shapiro based estimates on proportional market shares in various local markets across the country
- DirecTV's subscriber margin

DOJ Argument #3

■ Court of appeals response: Rejected

- Recognized the District Court made some errors in evaluating the mechanics of the model
- BUT
 - Model failed to take into account the effect of existing long-term TW affiliate agreements
 - Not error for District Court to find that these effects would be “significant” in preventing price increases until 2021 (three years out)
 - Not error for District Court to conclude that it would be difficult to predict price increases father into the future
 - Especially given the rapidly changing nature of the industry
 - Model failed to take into account mandatory licensing/arbitration commitment
 - Shapiro acknowledged both deficiencies and agreed that a new model would be required to take them into account
- RESULT:
 - Shapiro model (as presented) was not reliable to show *any* price increase result from the merger
 - No need for the District Court weigh the savings from EDM against the losses from price increases
 - → Any error in District Court’s evaluation of the numbers was harmless error and must be disregarded¹

¹ Fed. R. App. P. 52(a) (“Harmless Error. Any error, defect, irregularity, or variance that does not affect substantial rights must be disregarded.”).

One last look

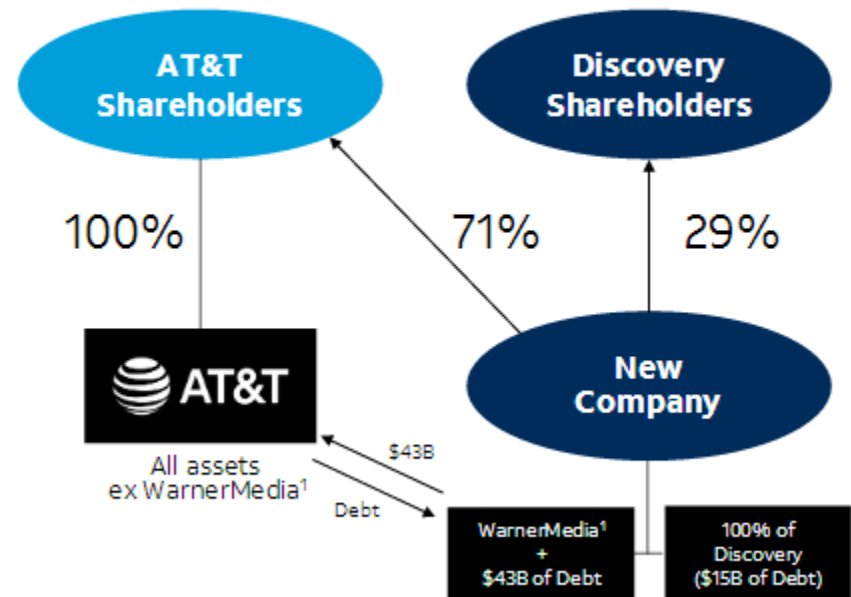


- T stock closing price on June 15, 2018 (date of consummation): \$32.52 per share
 - Below collar of \$37.411 per share
 - Total purchase price: \$81.0 billion
 - \$42.5 billion in cash
 - \$38.5 billion in AT&T Common Stock (1,185,300,105 AT&T shares issued)

One more last look: Warner Bros. Discovery

- Three years after the acquisition, AT&T spun off Warner Media to merge with Discovery¹
 - Announced May 17, 2021 / Closed April 8, 2022
 - Called Warner Bros. Discovery (NASDAQ ticker: WBD)
 - Discovery president and CEO David Zaslav leads the new company

Resulting Structure



¹ See Andrew Ross Sorkin, Jason Karaian, Sarah Kessler, Michael J. de la Merced, Lauren Hirsch & Ephrat Livni, *AT&T Just Undid a Big Deal. Here's What Comes Next*, DealBook, N.Y. Times.com (May 18, 2021).

Source: SeekingAlpha.com (June 2, 2022)

One more last look: Warner Bros. Discovery

- The aftermath (from the closing of the Warner Media acquisition)



One more last look: Warner Bros. Discovery

- Postmerger financial performance
 - Reported \$148M Q3 2025 net loss; TV and ad revenues declined
 - Box office gains (e.g., DC Studios) offset by other shortfalls
- Announced break-up
 - Faced with ongoing losses and mounting debt, the company announced plans in mid-2025 to split into two standalone businesses:
 - Streaming & Studios (Warner Bros.)
 - Global Networks (Discovery Global)
 - Intended to provide clearer focus, improve flexibility, and potentially attract investment
- Current status
 - The split remains “on track to be completed by mid-2026”
 - But the company is also reviewing alternative strategies, including a potential sale of all or part of the combined business
 - No final decision has been made
 - Warner Bros. Discovery continues to operate as a single entity

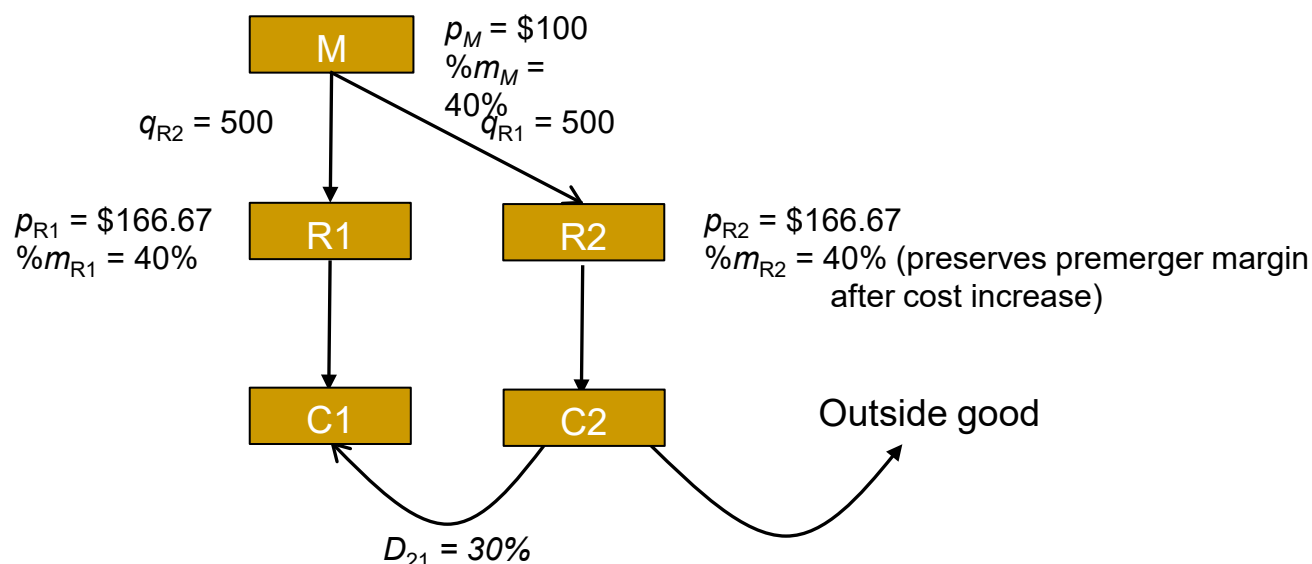
Appendix

Raising Rivals' Costs: The Vertical Arithmetic

RRC: The vertical arithmetic

■ The setup

- Find the \$SSNIP2 that maximizes the RRC incremental profit gain when M merges with D1 and increases D2's price by a. M charges its distributors rack prices (no bargaining) and R2 preserves its 40% margin after the cost increase



- Net incremental profit gain for the merger firm =
 - M's incremental profit gain on the inframarginal sales to R2
 - Minus M's incremental profit loss on the R2 marginal sales
 - Plus the recapture profit gain to the merged firm from the diversion of R2's lost sales to R1

RRC: The vertical arithmetic

■ The setup

□ Observations

- The incremental profit formula is of the same form as the formula for incremental profits in recapture unilateral effects
- The key difference is that the dollar margin is the recapture is the dollar margin of the merged firm ($\$m_{MF}$), not just the dollar margin of R1:

$$\$m_{MF} = \$m_M + \$m_{D1}$$

Note: $\$m_M$ and $\$m_{D1}$ are the premerger margins, since m does not increase its prices to D1, and D1 holds its price constant

- With an adjustment for the dollar margin, we can use the *GUPPI* formula for unilateral effects to create a *vGUPPI* for the vertical merger:

$$vGUPPI = D_{R2 \rightarrow R1} \%m_{MF} \frac{p_{R1}}{p_M} = \frac{D_{R2 \rightarrow R1} \$m_{MF}}{p_M},$$

$$\text{since } \$m_{MF} = \%m_{MF} * p_{R1}$$

In these problems, it is often easier to deal with $\$m_{MF}$ than $\%m_{MF}$

- Proposition:

The profit-maximizing increase in the manufacturer's price to R2 is $vGUPPI/2$

RRC: The vertical arithmetic

■ Example

Premerger, Manufacturer M sells 500 widgets to each of retailers R1 and R2 at a price of \$100 per widget for a gross margin of 50%. R1 and R2 each sell widgets to customers at \$166.67 per widget for a premerger gross margin of 40%. Although M's widgets are not differentiated by price, the retailers are differentiated by location, level of customer service, and overall product mix. If R2 increases its price, 60% of the sales it loses divert to R1 as customers comparison shop assuming no change in R1's price. There is no arbitrage, so M can price discriminate in the prices it charges R1 and R2. If M and R1 merge, will M increase the price to R2 and, if so, by how much?

- The merger of M and R1 is a vertical merger. The question asks whether M will engage in input RRC by increasing R2's price

■ The data

p_M	\$100	p_{D1}	\$166.67		
$\%m_M$	50%	$\%m_{D1}$	40%	D_{21}	60%
$\$m_M$	\$50	$\$m_{D1}$	\$66.67	$\$m_{MF}$	\$116.67

■ vGUPPI

$$vGUPPI = \frac{D_{R2 \rightarrow R1} \$m_{MF}}{p_M} = \frac{(0.60)(116.67)}{100} = 70.0\%$$

- Profit-maximizing price increase to R2: $vGUPPI/2 = 35.0\%$ or \$35.00, for a new R2 price of \$135.00

RRC: The vertical arithmetic

■ Brute force calculation of incremental profits

Input RRC: M increases its price to R2 by (say) 20%

Price (p_M)	\$100.00	Data
$\%m_M$	50.00%	Data
Elasticity	2	$= 1/\%m_M$ (Lerner condition)
$\%SSNIP_{R2}$	20.00%	Data
$\$SSNIP_{R2}$	\$20.00	$= \%SSNIP_{R2} * p_M$
q_{R2}	500	Data
$\%\Delta q_{R2}$	40.00%	$= \%SSNIP_{R2} * \text{elasticity}$ (from elasticity definition)
Δq_{R2}	200	

By playing around with $\%SSNIP_{R2}$, you can find the profit-maximizing percentage price increase to R2

M's incremental inframarginal gain

$\$SSNIP_{R2}$	\$20.00	From above
Inframarginal units	300	$= q_{R2} - \Delta q_{R2}$
	\$6,000.00	

M's incremental marginal loss

$\$m_M$	\$50.00	$= p_{R2} * \%m_M$
Marginal units (Δq_{R2})	200	$= \% \Delta q_{R2} * q_{R2}$
	\$10,000.00	

M's net incremental gain -\$4,000.00

Should be negative if M is profit-maximizing premerger

R1 recapture

p_{R1}	\$166.67	
$\%m_{R1}$	40.00%	
$\$m_{R1}$	\$66.67	Holding R1 retail price constant
$\$m_M$	\$50.00	
$\$m_{MF}$	\$116.67	$= \$m_M + \m_{R1}
D_{21}	60.00%	Actual diversion ratio
Recaptured	120.00	$= D_{21} * \Delta q_{R2}$
Recap gain	\$14,000.00	

TOTAL INCREMENTAL PROFITS

\$10,000.00	
\$12,250.70	Maximum incremental profits
	Achieved at $\%SSNIP_2 = 35.00\%$