12. Vertical Mergers

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Introduction to Vertical Mergers

What is a vertical merger?

- Some basic ideas
  - A *vertical merger* combines firms that operate at different levels of the chain of manufacture or distribution for a related product or service.
  - Vertical mergers involve complements, not substitutes
    - Horizontal mergers involve *substitute* products; vertical mergers involve *complements*—products or services used together in production or consumption
    - While the canonical examples are input-output relationships (e.g., a manufacturer acquiring a supplier or distributor), the theories of competitive harm are generally applicable to any merger involving complementary products
  - Potential for anticompetitive harm
    - Vertical mergers do not directly reduce the number of rivals in any single market
    - But they can alter the merged firm's incentives or ability to disadvantage rivals or coordinate across levels, thereby substantially lessening competition
  - Potential for procompetitive benefits
    - Vertical mergers can also create efficiencies, such as eliminating double marginalization or improving coordination between complementary operations

The central task under Section 7 is to weigh anticompetitive and procompetitive forces and determine whether, on balance, the merger's net effect is likely to substantially lessen competition and harm consumer welfare

What is a vertical merger?

- Vertical mergers typically take one of two forms:
  - An upstream firm acquires a downstream firm, integrating forward toward customers
  - A downstream firm acquires an upstream firm, integrating backward toward suppliers
  - Examples of forward integration
    - A steel producer acquires a major steel fabricator or auto-parts manufacturer
    - An oil refiner acquires a gasoline retail chain
    - A content producer (e.g., a movie studio) acquires a distribution network or streaming platform
    - A semiconductor manufacturer acquires an electronics assembler
    - A wholesaler acquires a retail chain to secure shelf space for its products
  - Examples of backward integration
    - An automobile manufacturer acquires a key parts supplier (e.g., transmissions or batteries)
    - A beverage bottler acquires a source of concentrate or syrup
    - A cable or satellite distributor acquires a content programmer
    - A retailer acquires a private-label manufacturer
    - A technology platform acquires a data-hosting or cloud-infrastructure provider

Vertical theories: Potential competitive effects

- Potential anticompetitive effects
  - Exclusionary effects: Foreclosure/raising rivals' costs (RRC)
    - Input foreclosure/raising costs to downstream rivals
      - Example: Offering worse price, terms, quality, priority, or timing for a needed input
    - Output foreclosure/raising costs to upstream rivals
      - Example: Restricting or degrading access to distribution or key customers
  - Coordinated effects
    - Elimination of a disruptive buyer
    - Elimination or disciplining of new disruptive competitor
    - Greater firm homogeneity that facilitates tacit coordination
    - Anticompetitive information conduits
      - Merger permits exchange or misuse of competitively sensitive information among rivals
- Potential procompetitive effects
  - Elimination of double marginalization (EDM)
  - Improved coordination of production, investment, or logistics
  - Reduced transaction costs, hold-up risk, and contracting frictions

Vertical theories of harm

- Focus of vertical theories
  - Modern vertical merger analysis, like horizontal, focuses on harm to competition in a relevant market—not harm to individual competitors
  - As with all Section 7, the anticompetitive effect must be located in a relevant market
    - Determined by the usual *Brown Shoe* and Merger Guidelines tests
- Efficiencies
  - Through most of modern antitrust history, vertical mergers have been generally presumed to create gross efficiencies
    - "Elimination of double marginalization" (explained below)
    - Cost and quality improvements
    - Increased investment incentives
  - Beginning in the late Trump administration and continuing into the Biden administration, senior antitrust enforcement officials have rejected this view
    - That is, they are neutral on whether a vertical merger is likely to create efficiencies
    - In investigations, they require proof of each claimed efficiency under the usual tests
      - Must be merger specific, verifiable, sufficient, and not the result of anticompetitive conduct

Vertical theories of harm

- Vertical mergers in the Supreme Court
  - Three cases since 1950
    - 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 foreclosure
    - 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
    - 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

Vertical mergers in the Supreme Court

- Takeaways and limits
  - What these cases establish
    - Vertical foreclosure is actionable under Section 7 when there is control over a critical input or outlet, rival dependence, and entry barriers
    - Courts have ordered both structural and conduct remedies where anticompetitive harm was likely
    - Even partial ownership can create incentives to disadvantage rivals
  - Modern relevance and limitations
    - Decided in a structuralist era (1950s–1970s), when antitrust goals an economic theories differed from today
    - Provides limited guidance for the modern economic approach under the consumer welfare standard
    - Use mainly for foundational principles, which can be pair with modern agency/judicial practice

Modern enforcement practice

- Modern enforcement practice (pre-2017)
  - Because vertical mergers did not eliminate a rival and were often presumed to create efficiencies, the agencies rarely sought to block them or require divestiture
  - Instead, they typically accepted behavioral remedies, including—
    - Non-discriminatory access obligations
    - Commitments to maintain open systems and interoperability
    - Firewalls to prevent transfers of competitively sensitive information
    - Sometimes binding arbitration or third-party dispute resolution
- Shift in approach: AT&T/Time Warner (2017)
  - 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) in the first litigated vertical merger case in decades
  - After experience with the recent Comcast/NBCUniversal consent decree involving the same markets, the DOJ concluded that access and firewall commitments did not adequately prevent discrimination against rivals that substantially lessened competition
  - The Division announced that it would no longer treat behavioral consent decrees as sufficient in vertical cases and would require divestiture to "fix" a vertical problem[1]

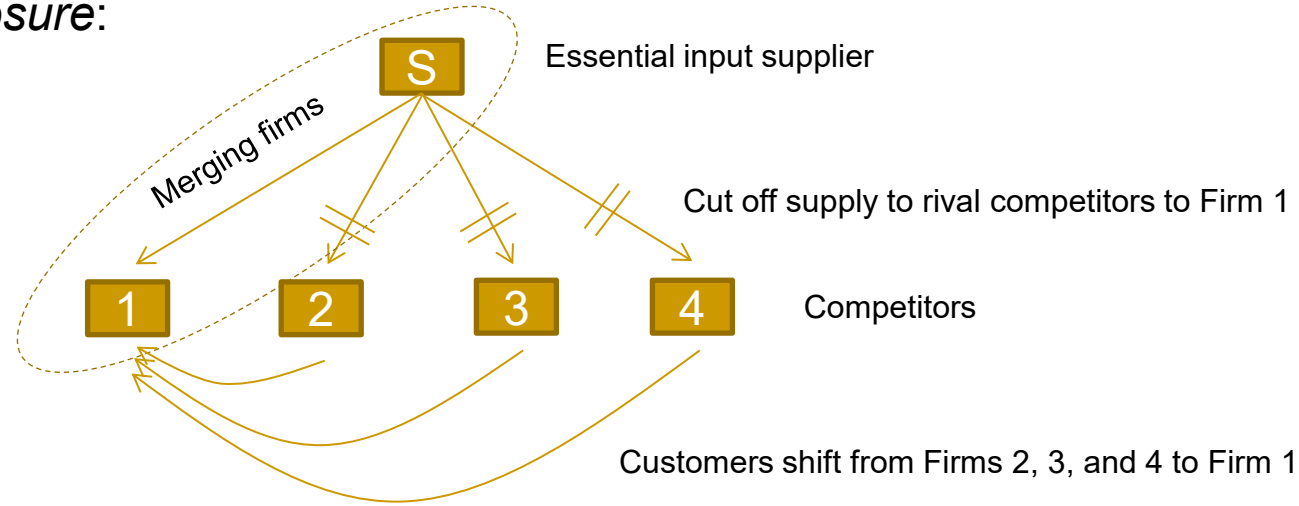
[1] Both AT&T/Time Warner and Comcast/NBCUniversal are discussed below.

Theories of Vertical Anticompetitive Harm

Exclusionary effects

- The paradigm case of foreclosure
  1. Combines the only firm producing an "essential" input
  2. With a downstream user in competition with other downstream users
  3. Permitting the combined firm to drive its downstream competitors out of the market by refusing to sell to them

Input foreclosure:



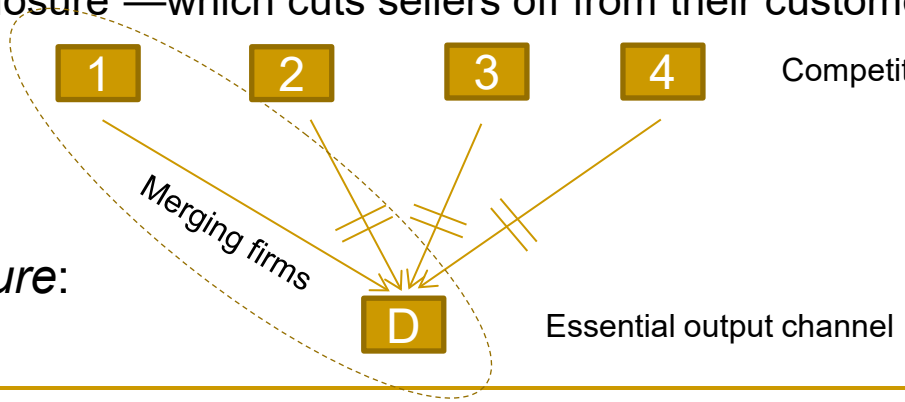
The idea: The combined firm can cut off the essential input from its downstream competitors, gain their customers, and monopolize the downstream market

Exclusionary effects

- Four variations
  1. Firm 1 could be the acquirer of Firm S
  2. The combined firm raises the price to its competitors rather than foreclosing them altogether ("raising rivals' costs" or "RRC")
  3. There could be several suppliers of the essential factor, but the theory still applies if the postmerger market the competitors are significantly competitively disadvantaged because—
     - the other input suppliers are simply higher cost firms, *or*
     - with the vertical merger it is easier for the other suppliers to oligopolistically coordinate and charge higher prices

     with the result in either case being that competition in the market is reduced
  4. The essential factor could be a distribution or retail channel rather than an input ("output foreclosure"—which cuts sellers off from their customers)

Output foreclosure:



Exclusionary effects

- Ability and incentive
  - Ability depends on rivals' need for the input and the availability of practical alternatives
  - The merger may change incentives even when the supplier could already change its terms
    - Before the merger, the supplier considers its profits across all customers it supplies
    - After the merger, it also internalizes downstream profits on sales captured from disadvantaged rivals
  - *AT&T/Time Warner*: The DOJ alleged that downstream recapture would strengthen the merged firm's bargaining position over programming fees

A profitable input-price increase establishes an incentive to pursue that strategy. Assessing consumer harm also requires examining downstream effects and any offsetting EDM benefits.

Exclusionary effects

- RRC numerical example: The setup
  - M supplies battery packs to lamp makers R1 and R2, one pack per lamp
  - M acquires R1 and considers increasing its wholesale price to R2

Data for the specified price increase	Value
M's marginal cost per battery pack	$9
Wholesale price to R1 and R2 before the increase	$15
R1 lamp price / other incremental costs	$40 / $15
Proposed wholesale price to R2	$17
R2 purchases before / after the increase	300 / 180
Diversion of R2's lost sales to R1	25%

  - Assume R1's retail price and other unit costs remain fixed, capacity is sufficient, and 25% of R2's lost sales divert to R1
  - The remaining lost sales leave M's supply chain. Use the same quantity forecast before and after the merger

Exclusionary effects

- RRC numerical example: The profit comparison
  - Upstream margin = $15 − $9 = $6; R1 downstream margin = $40 − $15 − $15 = $10
  - R2 loses 120 sales; 25% × 120 = 30 sales divert to R1

Source of profit change	Calculation	Premerger	Postmerger
Higher margin on retained R2 sales	180 × $2	+$360	+$360
Lost upstream profit on R2 sales	120 × $6	−$720	−$720
Upstream profit on diverted R1 sales	30 × $6	+$180	+$180
Newly internalized R1 downstream profit	30 × $10	—	+$300
Total incremental profit		**−$180**	**+$120**

  - The specified increase is unprofitable before the merger but profitable afterward
  - NB: M already earns the upstream margin on diverted R1 sales before the merger. The newly internalized gain is 30 × $10 = $300

Exclusionary effects

- Open legal standard question
  - In the AT&T/Time Warner complaint, the DOJ stated:

> A vertical merger may violate the antitrust laws where the merging parties would—by means of their control of an input that their competitors need—have the incentive and ability to substantially lessen competition by withholding or raising the price for that input.[1]

  - *Query*: Is there an increase in price to rivals that is permissible under Section 7 or any price increase, no matter how small, impermissible?
    - There is no law on this question
    - The language of Section 7 suggests that the price increase to rivals resulting from the merger must be of sufficient probability and magnitude to "substantially" lessen competition by measuring increasing the market power being exercised in the relevant market
    - Whatever the legal threshold, the magnitude of the price increase the merged firm will seek to impose on a competitor will be a function of—
      - The competitor's loss of customers (and margin) due to the price increase,
      - The percentage of those customers that are captured by the merged firm as customers (the diversion rate), and
      - The margins the merged firm earns from those captured customers

[1] Complaint ¶ 10, United States v. AT&T Inc., No. 1:17-cv-02511 (D.D.C. filed Nov. 30, 2017).

Coordinated effects

- Elimination of a disruptive buyer
  - When the merged firm can price discriminate in the prices it charges its rivals, it can target particular buyers that disrupt seller coordination by refusing to deal with those buyers or materially raising their input prices
  - Example:
    - In its AT&T/Time Warner complaint, the DOJ alleged that the combined firm would have an incentive to charge virtual MVPDs and online video distributors (OVDs)—two forms of new, disruptive entrants into subscription TV distribution—higher prices to Turner network and HBO in order to protect AT&T's traditional delivery

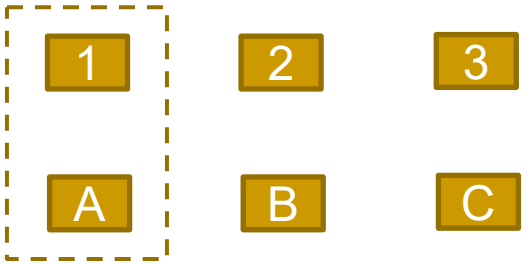
Coordinated effects

- Elimination/disciplining of new disruptive competition
  - When the merged firm can price discriminate in the prices its charges its rivals, it can target particular new entrants that threaten to disrupt seller coordination by refusing to deal with those entrants or materially raising their input prices

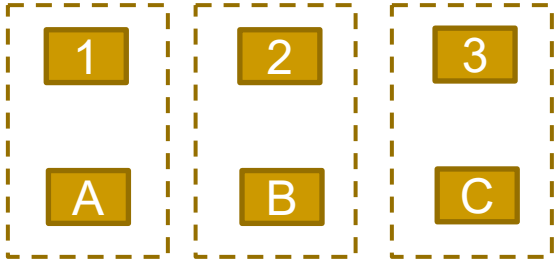
Coordinated effects

- Create greater firm homogeneity
  - As related markets become more structured as vertical silos through vertical integration, firms become more alike (homogeneous), which causes their incentives to align and so facilitates horizontal coordination

Less likely to tacitly coordinate:



More likely to tacitly coordinate:



  - *Example*: AT&T/Time Warner complaint

> The merger would also make oligopolistic coordination more likely. For example, the merger would align the structures of the two largest traditional video distributors, who would have the incentive and ability to coordinate to impede competition from innovative online rivals and result in higher prices. In short, the merger would help the merged firm's bottom line by extending the life of the old pay-TV model, but harm consumers who are eager for new innovative options.[1]

[1] Complaint ¶ 9, United States v. AT&T Inc., No. 1:17-cv-02511 (D.D.C. filed Nov. 30, 2017).

Coordinated effects

- Anticompetitive information conduits
  - *Paradigm case*: Market is otherwise conducive to oligopolistic coordination *except* that information on which to coordinate is not readily available. The vertical merger provides a mechanism for conveying this information.

Efficiencies in vertical mergers

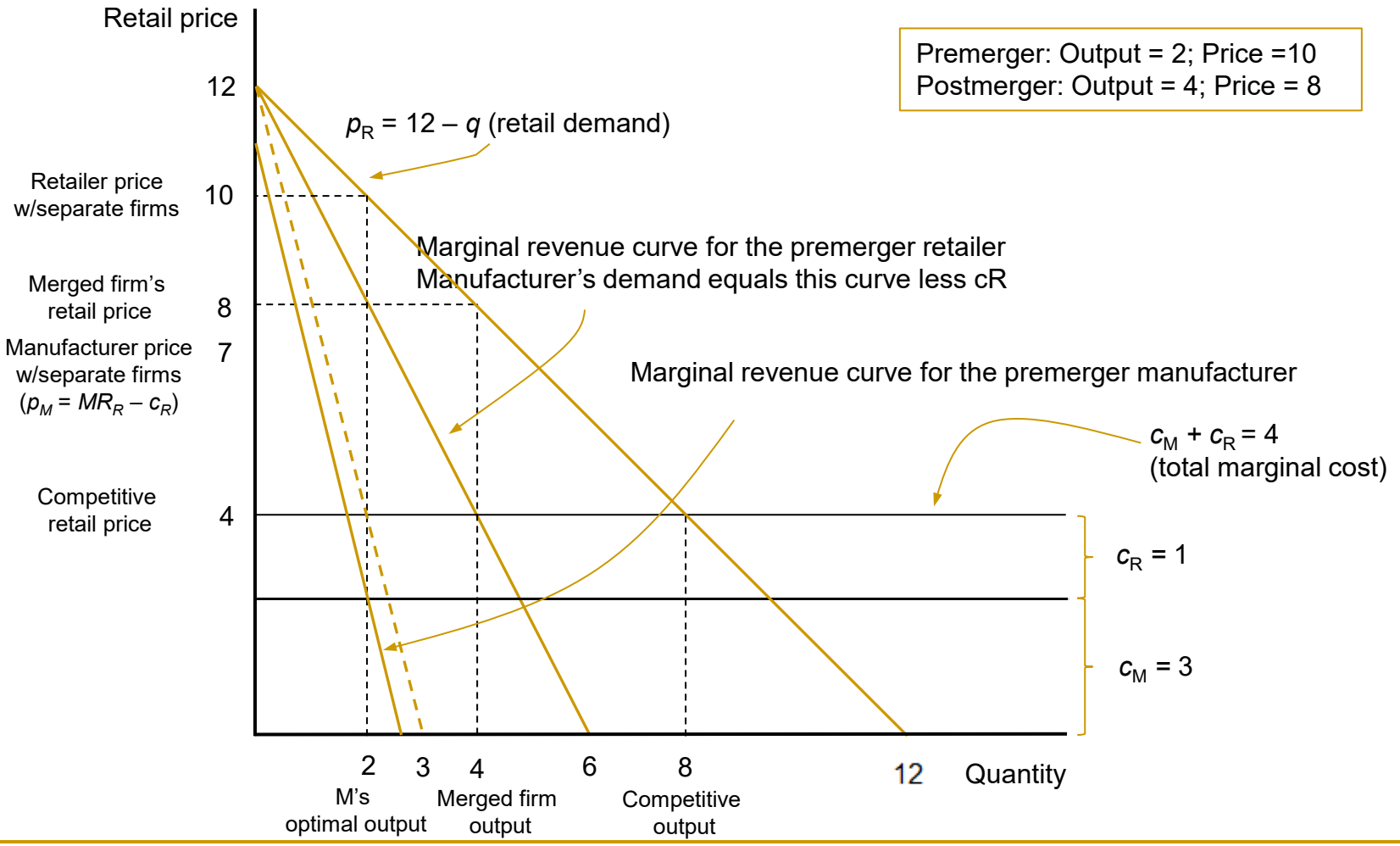
- Elimination of double marginalization
  - A potential benefit of vertical integration: lower retail prices and greater output
- The idea
  - A manufacturer and a retailer each exercise pricing discretion
    - The retailer treats the wholesale payment, including the upstream markup, as an incremental cost
    - Its pricing decision does not internalize the upstream profit generated by an additional retail sale
  - Integration brings those profits into a joint pricing decision
    - The incentive changes even when production and distribution costs do not
  - The simple model below has one manufacturer selling only to one retailer
    - When the supplier also serves competing retailers, lost upstream profits can limit EDM
  - NB: The consumer benefit depends on opportunity cost and pass-through; EDM need not outweigh RRC

Efficiencies in vertical mergers

- Elimination of double marginalization: The model
  - Consider a simple model in which:
    - There is only one manufacturer, which sells to only one retailer
    - There is a one-to-one correspondence between input purchases and retail sales; M faces demand derived from R's pricing response
    - The manufacturer has constant marginal costs c_M
    - The retailer has constant marginal costs c_R (which for simplicity may be zero) in addition to the price p_M it pays the manufacturer
    - Total retailer's marginal costs $c_T = p_M + c_R$
  - The manufacturer recognizes the incentive of the retailer to markup its price and takes that into account in determining its own price and output
  - The retailer raises price above the competitive level so that its marginal revenue equals its marginal cost
  - *Key insight*: The retailer's marginal revenue curve is the demand curve for the manufacturer (adjusted for the retailer's other marginal costs)
    - The retailer is willing to purchase from the manufacturer up to the point where the retailer's total marginal costs equals its marginal revenue, that is, where $p_M + c_R = MR_R$
    - Rearranging, $p_M = MR_R - c_R$, which is the demand function for the manufacturer

Efficiencies in vertical mergers

- Elimination of double marginalization: The model



Efficiencies in vertical mergers

- Elimination of double marginalization: The math (an example)
  - Retailer (premerger)
    - Demand curve: $p_R = 12 - q_R$
    - Revenue: $R_R = p_R \times q_R = (12 - q_R)\, q_R = 12q_R - q_R^2$
    - Marginal revenue: $MR_R = 12 - 2q_R$
    - Set marginal revenue equal to marginal cost: $MR_R = 12 - 2q_R = c_T = p_M + c_R$
  - Manufacturer
    - Demand curve: $p_M = MR_R - c_R$ (rearranging retailer's profit-maximizing condition)
    - Revenue: $R_M = p_M \times q_M = (12 - 2q_R - c_R)\, q_M = 12q_M - 2q_M^2 - c_R\, q_M$
    - Marginal revenue: $MR_M = 12 - 4q_M - c_R$
    - Set marginal revenue equal to marginal cost: $MR_M = 12 - 4q_M - c_R = c_M$ or $12 - 4q_M - 1 = 3 \rightarrow q_M = 2$
    - Now $q_M = q_R$ (by hypothesis), so $p_R = 10$ and $q_R = 2$
  - Merged company
    - Same demand curve, revenue curve, and marginal revenue curve as retailer premerger, but now we can look at total marginal costs: $c_C = c_R + c_M = 4$
    - Set marginal revenue equal to marginal cost: $MR_R = c_C \rightarrow 12 - 2q_R = 4$
    - So $q_R = 4$ and $p_R = 12 - q_R = 8$

Efficiencies in vertical mergers

- Elimination of double marginalization: The comparison

Measure	Separate firms	Integrated firm
Production plus distribution cost per unit	$4	$4
Cost relevant to the retail pricing decision	$8	$4
Price to consumers	$10	$8
Quantity sold	2	4
Total profits across both levels	$12	$16

  - Before the merger: M charges $7; R's relevant marginal cost is $7 + $1 = $8
  - After the merger: The combined firm uses resource cost $3 + $1 = $4
  - The $4 effective cost reduction produces a $2 retail price reduction in this linear-demand model
  - NB: Resource costs are unchanged; the integrated firm still exercises market power

Efficiencies in vertical mergers

- EDM and RRC numerical example: The setup
  - Component supplier M acquires bicycle assembler A
  - One component per bicycle; M also supplies A's rivals

Data for the coming year	Value
Wholesale price / upstream marginal cost	$12 / $5
Upstream profit forgone per additional A sale	$1
Pass-through of effective cost changes	50%
A's baseline annual sales	2,000
Affected rivals' combined baseline annual sales	8,000
Estimated wholesale increase to rivals	$1

  - The $1 opportunity cost already reflects upstream margins and sales displaced at rivals
  - Treat the wholesale increase and pass-through rate as estimates. Use baseline sales as weights and assume no additional price responses

Efficiencies in vertical mergers

- EDM and RRC numerical example: The cost and price effects
  - Premerger wholesale markup = $12 − $5 = $7 per component
  - After the merger, an additional A sale has two relevant upstream costs
    - Production cost: $5
    - Upstream profit forgone when other supplied assemblers lose sales: $1
  - Effective input cost = $5 + $1 = $6
  - Effective marginal-cost reduction for A = $12 − $6 = $6
  - A's retail price reduction = 50% × $6 = $3
  - Rivals' retail price increase = 50% × $1 = $0.50
- Query
  - Why is the effective cost reduction less than the $7 markup? Why do consumers receive only $3 of the $6 reduction?

Efficiencies in vertical mergers

- EDM and RRC numerical example: The consumer comparison
  - Use baseline annual sales as weights; a payment increase is positive
  - Change only the rivals' wholesale increase from $1 to $2

Annual change in consumer payments	Base case	Sensitivity
Wholesale increase to rivals	$1	$2
A customers: 2,000 × (−$3)	−$6,000	−$6,000
Rival customers: 8,000 × retail price increase	+$4,000	+$8,000
Net change	**−$2,000**	**+$2,000**

  - Base case: Estimated EDM savings exceed the RRC burden by $2,000 annually
  - Sensitivity: The estimated RRC burden exceeds EDM savings by $2,000
  - NB: These are first-order consumer price effects, not firm profits or a complete welfare calculation. Actual quantities may change

Ford/Autolite





Ford/Autolite

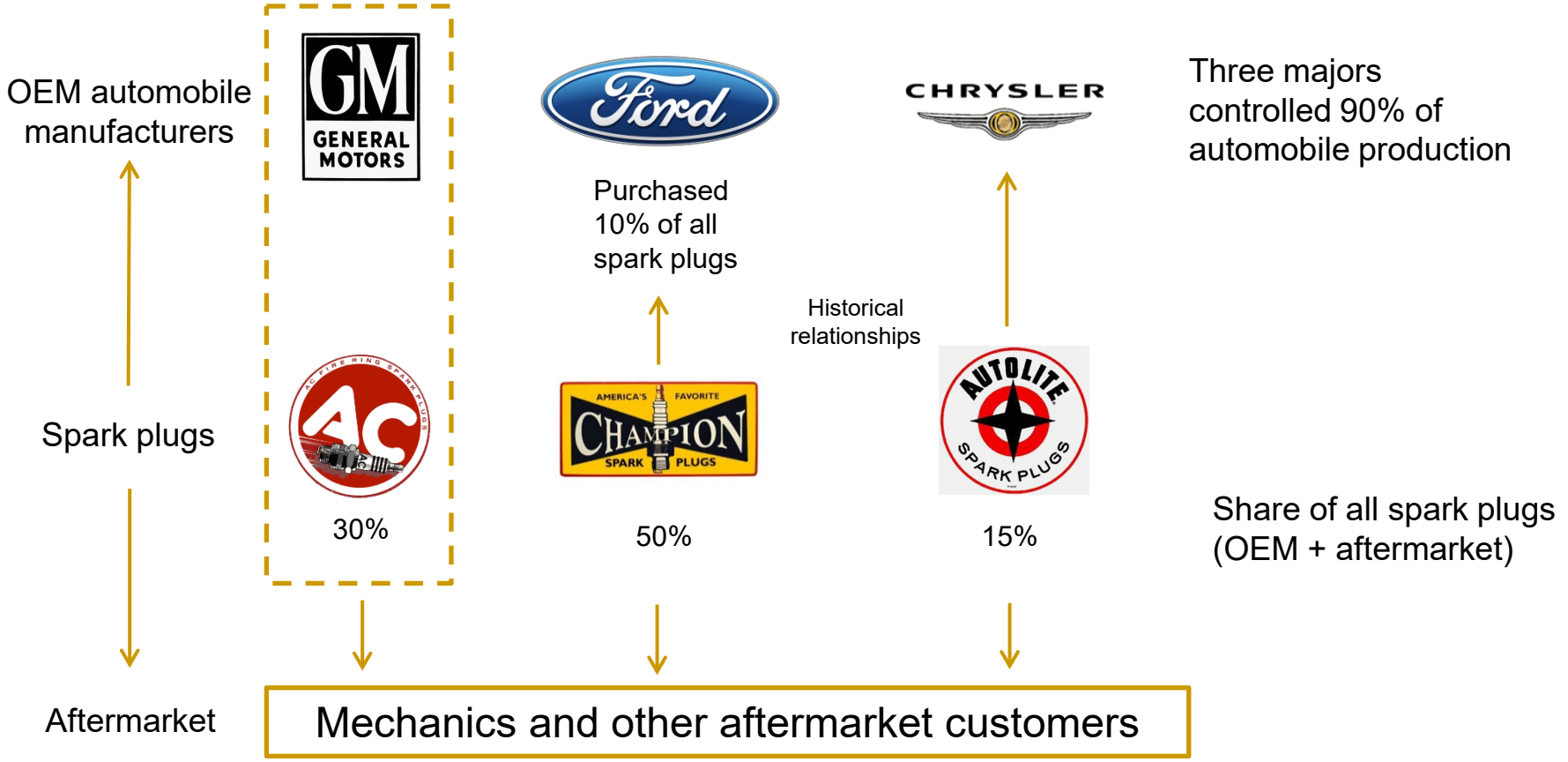
- The deal
  - On April 12, 1961, Ford Motor Company acquired selected assets of the Electric Autolite Company for $28 million
    - Autolite's plug facility at Fostoria, Ohio
    - Autolite trade name
    - One of Autolite's six operating battery installations
    - Limited distribution rights
- The 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

- 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



Ford/Autolite

- District Court
  - Complaint filed November 27, 1961
  - Final judgment rendered on December 18, 1970 find 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).

Coca-Cola/Coca-Cola Enterprises



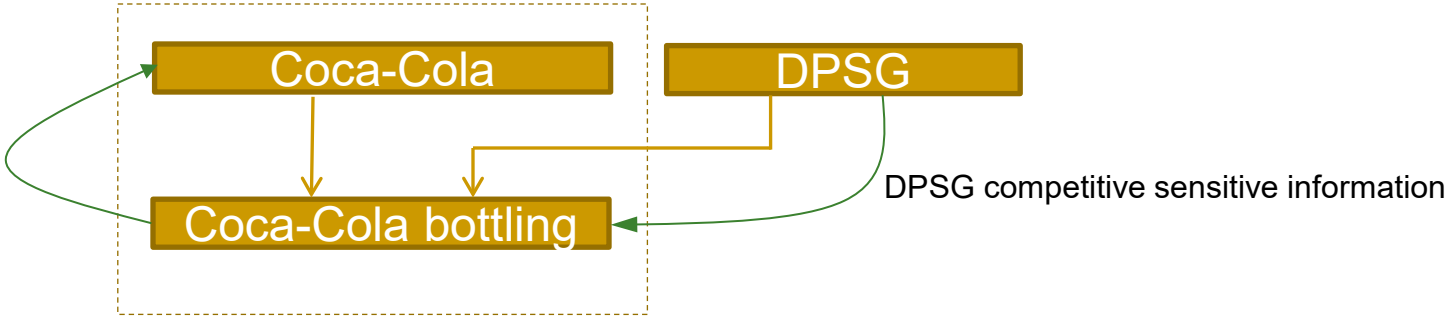
Coca-Cola Enterprises

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, resulting in:
    - Likely 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

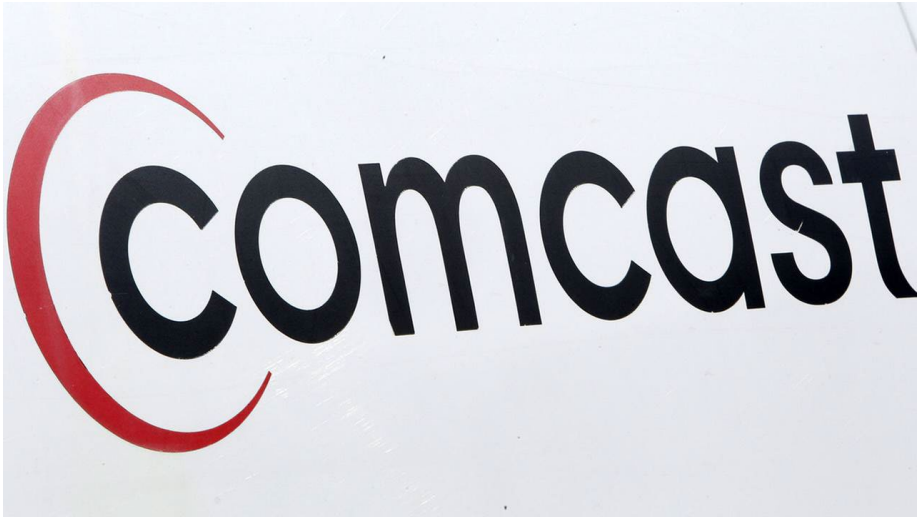


Coca-Cola/Coca-Cola Enterprises (2010)

- FTC consent decree
  - Information firewall to
    - Limit access to and use of DPSG' competitively sensitive information to Coca-Cola bottling operation for use in the bottling and marketing of the DPSG products
    - Prevent Coca-Cola's competitive operations from gaining access to such information
  - Set procedures for changing bottling operations personnel
  - Imposed a compliance monitor

- Query
  - Why did the FTC believe that the confidentiality provisions of the DPSG distribution agreement were insufficient?

Comcast/NBCUniversal



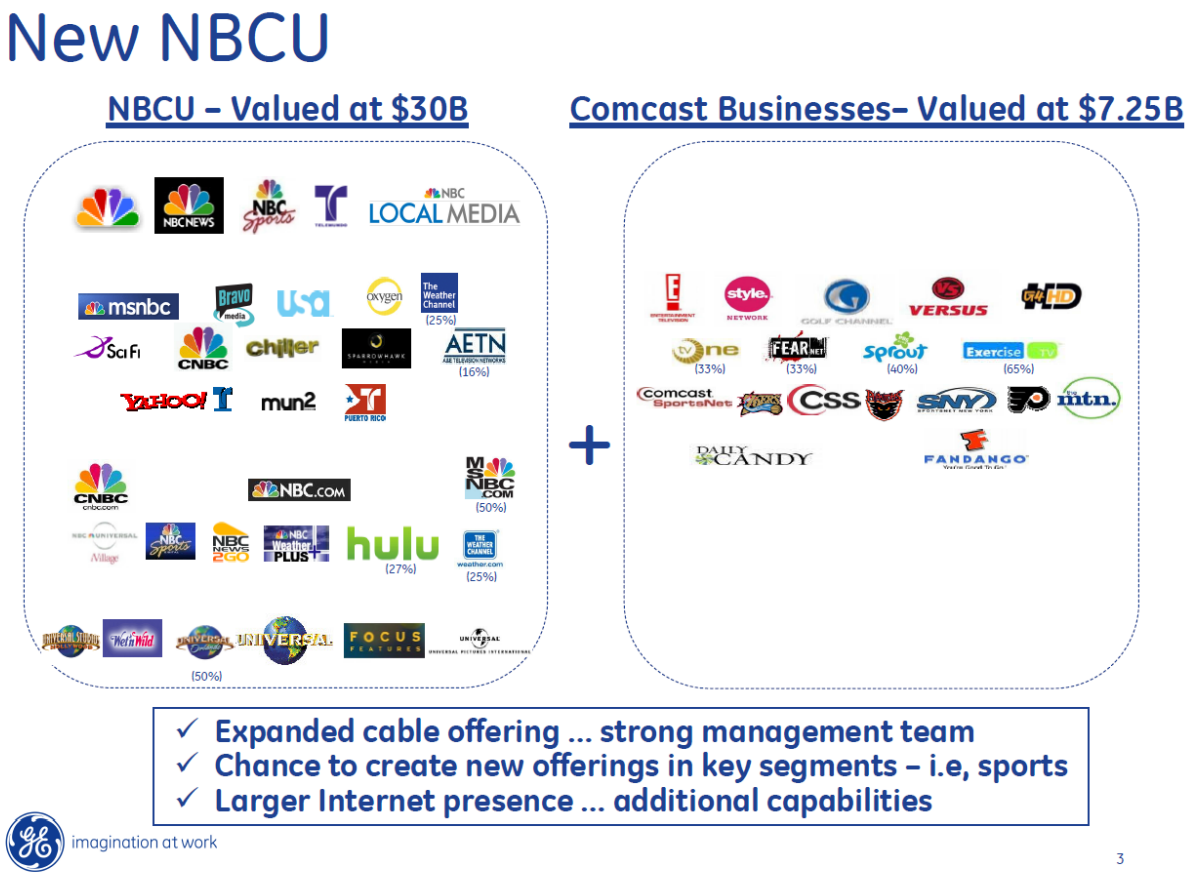


Comcast/NBCUniversal

- The deal
  - Comcast to buy a controlling interest in NBCUniversal from GE
    - Announced December 3, 2009
  - To form a 51%/49% joint venture between Comcast and GE (NBCUniversal LLC)
- Contributions to the JV
  - GE: NBC Universal's businesses (valued at $30 billion), including:
    - The NBC Network (including NBC's 10 owned and operated TV stations)and NBC Sports
    - The NBC cable networks (including USA, Bravo, Syfy, CNBC and MSNBC)
    - Universal Pictures, Focus Films, and Universal Studios (including the film library)
    - The Universal theme parks
    - Hulu (32% ownership) (an "online video distributor" or "OVD")
  - Comcast: Cable network businesses (valued at $7.25 billion), including:
    - Cable networks (including E!, Versus, and the Golf Channel)
    - 10 regional sports networks
    - Certain other digital properties

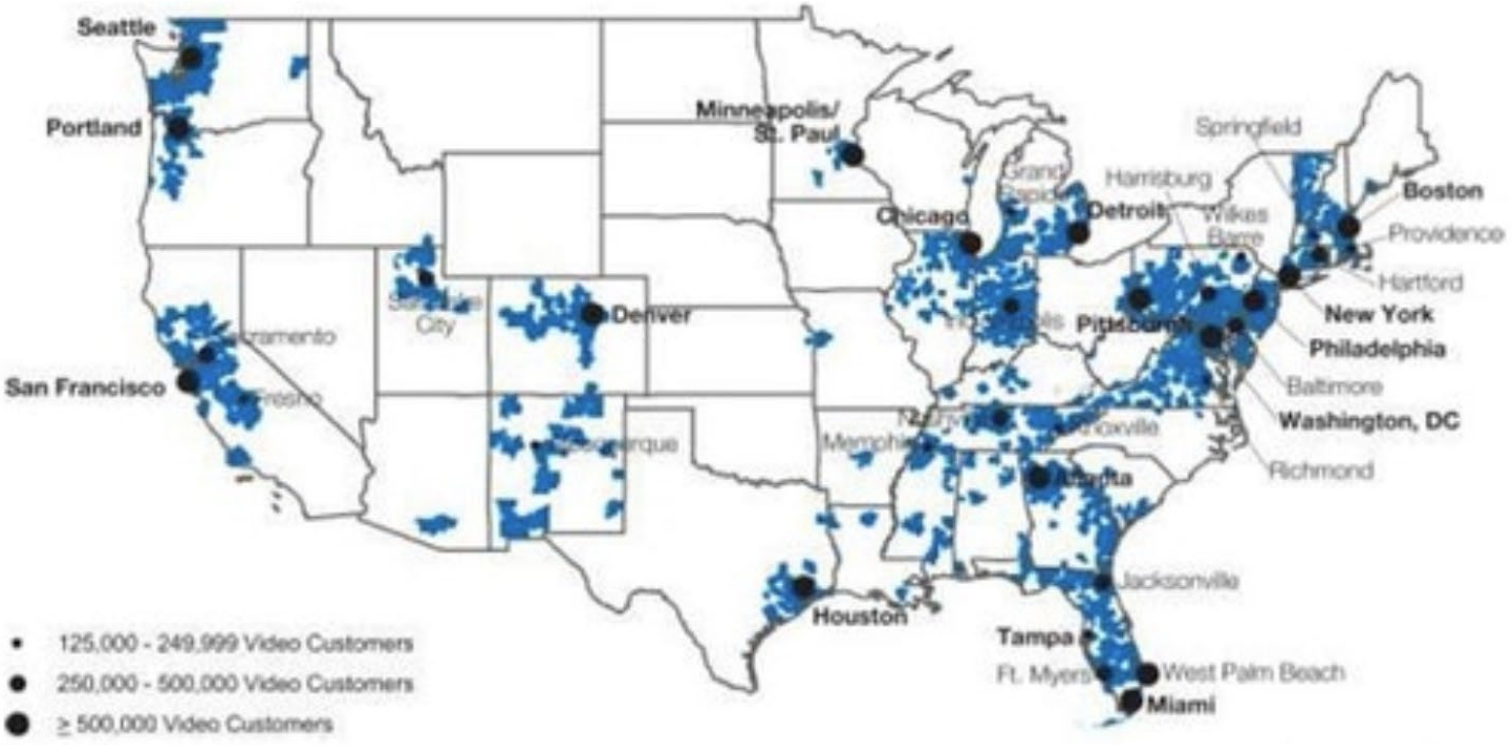
Comcast/NBCUniversal

- New NBCU joint venture



Comcast/NBCUniversal

- Comcast cable service areas (2014)



Comcast/NBCUniversal

- DOJ concerns
  - JV gives Comcast control over NBCU's video programming
    - Comcast could limit competition with its cable systems by refusing to license (or, more likely, licensing at higher prices) NBC's essential programming content to
      - Multichannel Video Programming Distributors (MVPDs),[1] and
      - Online Video Programming Distributors (OVDs)[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
  - JV gives Comcast control over a 32% interest in Hulu
    - Comcast could use its rights to impede Hulu's development as an OVD competitor
  - Likely effects
    - Decreased competition in the development, provision, and sale of video programming distribution services in local geographic markets served by Comcast cable systems
    - Increased prices for video programming distribution services in local geographic markets served by Comcast cable systems
    - Ability to limit content and raise input prices could also reduce the rate of innovation and quality improvement of video programming distributions services

[1] Includes cable overbuilders (primarily RCN), 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.

Comcast/NBCUniversal)

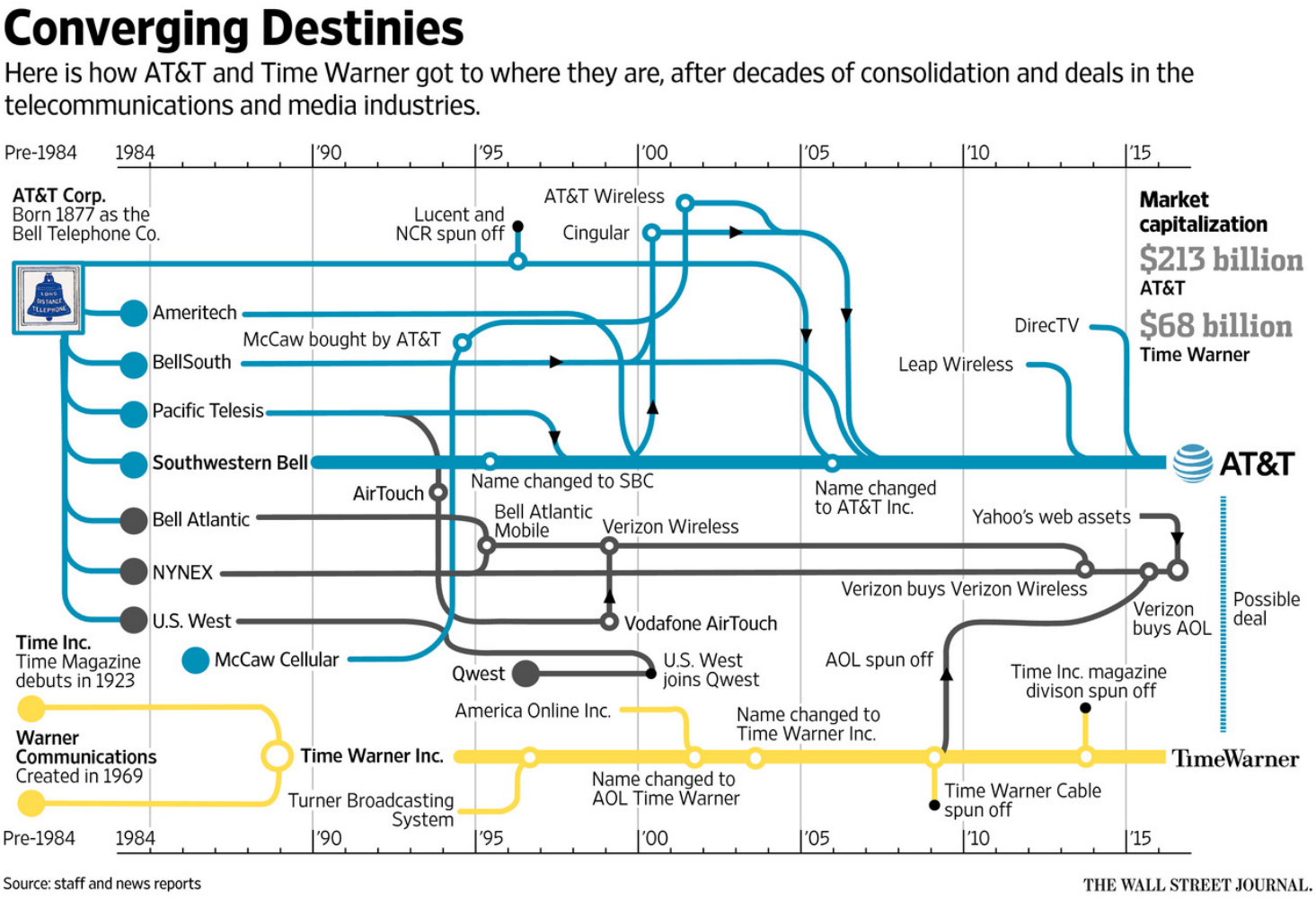
- DOJ consent decree[1]
  - Traditional competitors
    - Coordinated with the FCC—FCC order requires the JV to license NBCU content to Comcast's cable, satellite, and telephone company competitors
    - Not included in DOJ consent decree as redundant
  - Online video distributor competitors
    - Must make available same package of broadcast and cable channels that JV sells to traditional video programming distributors
    - Must offer broadcast, cable, and film content similar to, or better than, 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
    - Commercial arbitration if cannot reach agreement on license terms
    - Prevents restrictive licensing practices and retaliation
    - Comcast prohibited from unreasonably discriminating in the transmission of an OVD's lawful traffic over Comcast ISP
  - Hulu
    - Comcast to relinquish voting and other governance rights in Hulu
    - Comcast precluded from receiving confidential or competitively sensitive information about Hulu's operations

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

AT&T/Time Warner



AT&T/Time Warner



AT&T/Time Warner

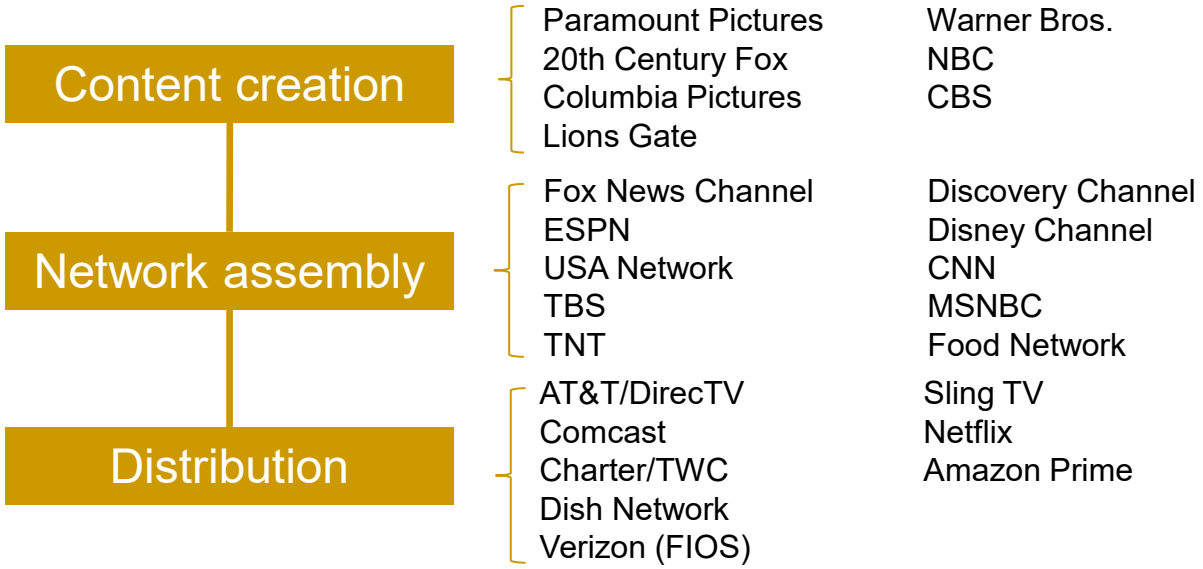
- The deal
  - AT&T/DirecTV to acquire Time Warner for $85.4 billion
    - Announced October 22, 2016
    - Half cash/half stock
    - $500 million antitrust reverse breakup fee

AT&T/Time Warner

- The parties
  - AT&T
    - Revenues: $163 billion (2016)
    - Second largest wireless company (including broadband internet)
    - Third largest home internet provider
    - Large landline telephone service provider
    - Largest Multichannel Video Programming Distributor (MVPD)
      - DirecTV (satellite-based, with 21 million subscribers)—Acquired in 2015
      - U-Verse (AT&T local fiber optic and copper wire, with 4 million subscribers)
      - DirecTV Now (online video, with 800K subscribers)
  - Time Warner
    - Revenues: $29.3 billion
    - Reaches over 90 million households of the nearly 100 million households that subscribe to subscription television
    - Media content business units
      - Turner Broadcasting System (including CNN, TBS, TNT, Cartoon Network, sports programming)
        - Sports programming includes NCAA March Madness, some regular and playoff MLB and NBA games, and PGA Championship
      - Home Box Office (HBO and Cinemax)
      - Warner Bros. Entertainment (film and TV studio)

AT&T/Time Warner

- Business rationale
  - AT&T problem: Little future growth expected in wireless subscribers
  - Transaction permits the combined company to compete against traditional cable companies ("multiple system operators" or MSOs) nationwide and OTT providers in offering a subscription TV bundle
    - Now offers the pipes
    - Combined company will offer the pipes and the content



AT&T/Time Warner

- DOJ complaint
  - *Theory 1*: Foreclosure/raising rivals' costs to subscription TV distribution rivals

> Specifically, as DirecTV has explained, such vertically integrated programmers "can much more credibly threaten to withhold programming from rival [distributors]" and can "use such threats to demand higher prices and more favorable terms." Accordingly, were this merger allowed to proceed, the newly combined firm likely would—just as AT&T/DirecTV has already predicted—use its control of Time Warner's popular programming as a weapon to harm competition. AT&T/DirecTV would hinder its rivals by forcing them to pay hundreds of millions of dollars more per year for Time Warner's networks, and it would use its increased power to slow the industry's transition to new and exciting video distribution models that provide greater choice for consumers. The proposed merger would result in fewer innovative offerings and higher bills for American families.[1]

    - Specifically, would lessen competition in—
      - All Video Distribution local markets
      - Multichannel Video Distribution local submarkets

      by increasing the fees charged to rivals for the Turner networks and impeding their use of HBO[2]

[1] Complaint (Introduction), United States v. AT&T Inc., No. 1:17-cv-02511 (D.D.C. filed Nov. 30, 2017).
[2] *Id.* § V(A)

AT&T/Time Warner

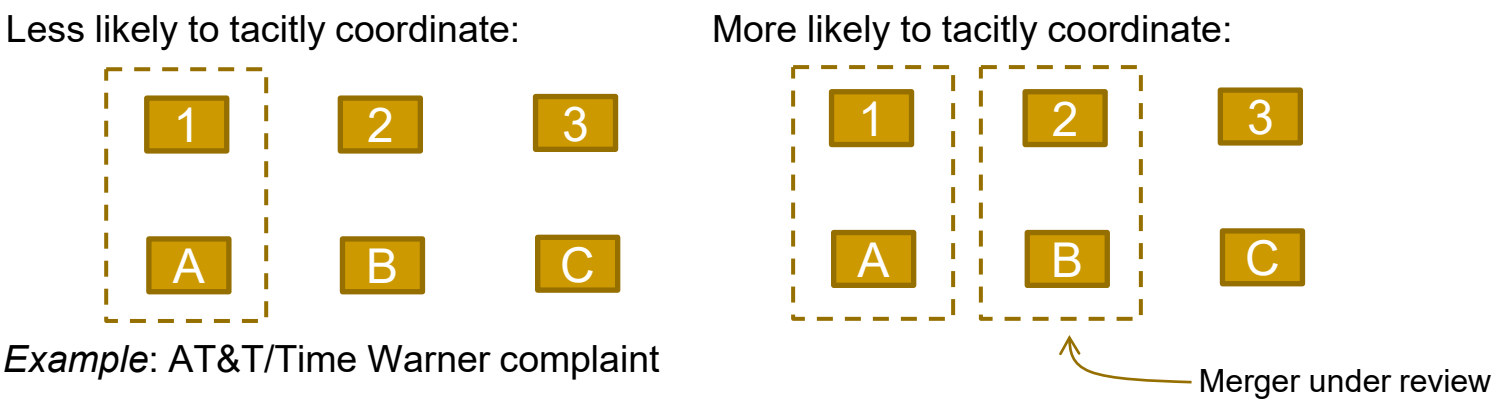
- DOJ complaint
  - *Theory 2*: Impeding entry and growth of disruptive online video distributors (OVDs)
    - A type of "over the top" (OTT) provider that uses the Internet or IP to deliver services that is seriously challenging traditional cable companies
    - *Allegation*: Time Warner's Turner networks are extremely important for many emerging video distributors and are tied for second behind only Disney in their ability to attract customers to emerging platforms

> After the merger, the merged firm would likely use Turner's important programming to hinder these online video distributors—for example, the merged firm would have the incentive and ability to charge more for Turner's popular networks and take other actions to impede entrants that might otherwise threaten the merged firm's high profit, big-bundle, traditional pay-TV model.[1]

[1] Complaint ¶ 9, United States v. AT&T Inc., No. 1:17-cv-02511 (D.D.C. filed Nov. 30, 2017).

AT&T/Time Warner

- DOJ complaint
  - *Theory 3*: Create greater firm homogeneity facilitates tacit coordination
    - As related markets become more structured as vertical silos through vertical integration, firms become more alike (homogeneous), which causes their incentives to align and so facilitates horizontal coordination



    - *Example*: AT&T/Time Warner complaint

> The merger would also make oligopolistic coordination more likely. For example, the merger would align the structures of the two largest traditional video distributors [Comcast/NBCUniversal and AT&T/Time Warner], who would have the incentive and ability to coordinate to impede competition from innovative online rivals and result in higher prices. In short, the merger would help the merged firm's bottom line by extending the life of the old pay-TV model, but harm consumers who are eager for new innovative options.[1]

[1] Complaint ¶ 9, United States v. AT&T Inc., No. 1:17-cv-02511 (D.D.C. filed Nov. 30, 2017).

AT&T/Time Warner

- *Final query*: Was there anyone left in the Antitrust Division who was not on the complaint?

Dated: November 20, 2017

Respectfully submitted,

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AT&T/Time Warner

- Comparing raising rivals' costs with EDM
  - Shapiro's analysis connected two changes in the merged firm's incentives
    - RRC: Downstream recapture could strengthen the bargaining position over rivals' programming fees
    - EDM: Internalizing upstream profits could encourage lower prices to the merged firm's own subscribers
  - Translate both changes into consumer price effects
    - Account for upstream opportunity cost when estimating the effective EDM reduction
    - Estimate retail pass-through and weight price changes by affected subscriber counts
  - The net result depends on the magnitude and evidentiary support of the estimates
  - NB: A profitable strategy, a predicted input-fee increase, and net consumer harm are different propositions
  - The case requires its own evidence

Appendix 1
Raising Rivals' Costs: The Vertical Arithmetic

RRC: The vertical arithmetic

- The setup
  - M supplies R1 and R2 and proposes to acquire R1
  - Compare a specified increase in the wholesale price charged to R2
    - The wholesale price charged to R1 remains fixed in the premerger comparison
    - R1's retail price and other incremental costs remain fixed; capacity is sufficient
    - Each downstream sale requires one input unit; the quantity and diversion forecasts are supplied
- Four entries in the profit calculation
  - Higher margin on retained R2 sales, less profit lost on foregone sales
  - Upstream profit on diverted sales: Counted before and after the merger
  - R1's downstream profit on diverted sales: Counted only after the merger
  - NB: Other lost sales leave M's supply chain; internal payments cancel

RRC: The vertical arithmetic

- Comparing premerger and postmerger incentives
  - Let δ be the specified wholesale increase; q1 the retained R2 sales; L the lost R2 sales; and D the share of lost sales diverted to R1
  - Let mU be M's original per-unit upstream margin and mD be R1's downstream contribution after paying the original wholesale price
- Premerger supplier profit change
  - $\Delta\pi pre = \delta q1 - mU\ L + mU\ DL$
- Postmerger combined profit change
  - $\Delta\pi post = \delta q1 - mU\ L + (mU + mD)DL$
- The merger-induced change in this comparison
  - $\Delta\pi post - \Delta\pi pre = mD\ DL$
  - NB: These expressions compare the same specified increase under the stated assumptions; they do not identify the optimal increase

RRC: The vertical arithmetic

- Sensitivity to downstream diversion
  - Use the battery-pack example. Hold the $2 wholesale increase, 120 lost R2 sales, and margins of $6 upstream and $10 downstream constant

Same specified $2 wholesale increase	**25% diversion**	**10% diversion**
Lost R2 sales	120	120
Sales diverted to R1	30	12
Upstream profit on diverted sales	+$180	+$72
Premerger incremental profit	−$180	−$288
Newly internalized downstream profit	+$300	+$120
Postmerger incremental profit	**+$120**	**−$168**

  - At 10% diversion, downstream recapture is insufficient to make the specified increase profitable
  - This weakens the incentive concern for this strategy; it does not rule out other strategies or establish the merger's overall effect

RRC: The vertical arithmetic

- Interpretation and limits
  - Use contribution margins after all relevant incremental costs
    - Retail price less wholesale price less other downstream incremental costs
  - Count profits across every operation owned by the decision maker
    - Upstream profits on sales diverted to an existing customer belong in the premerger comparison
  - Distinguish three questions
    - Is the specified strategy profitable before or after the merger?
    - How do input-price changes affect retail prices, output, quality, and consumer choice?
    - What evidence supports a substantial lessening of competition?
  - Finding an optimal price requires a demand and pricing model. A supplied quantity response tests only the specified increase
  - NB: A GUPPI measures pricing pressure; dividing it by two is not a general price-prediction rule

- Appendix 2

EDM Numerical Tables and Profits

- OPTIONAL

Efficiencies in vertical mergers

- Elimination of double marginalization: The numbers

Demand: $q = 12 - p_R$

Marginal cost (manufacturer): $c_M = 3$

Marginal cost (retailer): $c_R = 1$

Marginal cost (total): $c_M + c_R = 4$

Competitive	p	q	Revenues	Costs	Profits
	4	8	32	32	0

Merged firm	p	q	Revenues	Costs	Profits
	0	12	0	48	-48
	1	11	11	44	-33
	2	10	20	40	-20
	3	9	27	36	-9
	4	8	32	32	0
	5	7	35	28	7
	6	6	36	24	12
	7	5	35	20	15
	8	4	32	16	16
	9	3	27	12	15
	10	2	20	8	12
	11	1	11	4	7
	12	0	0	0	0

Efficiencies in vertical mergers

- Elimination of double marginalization: The numbers

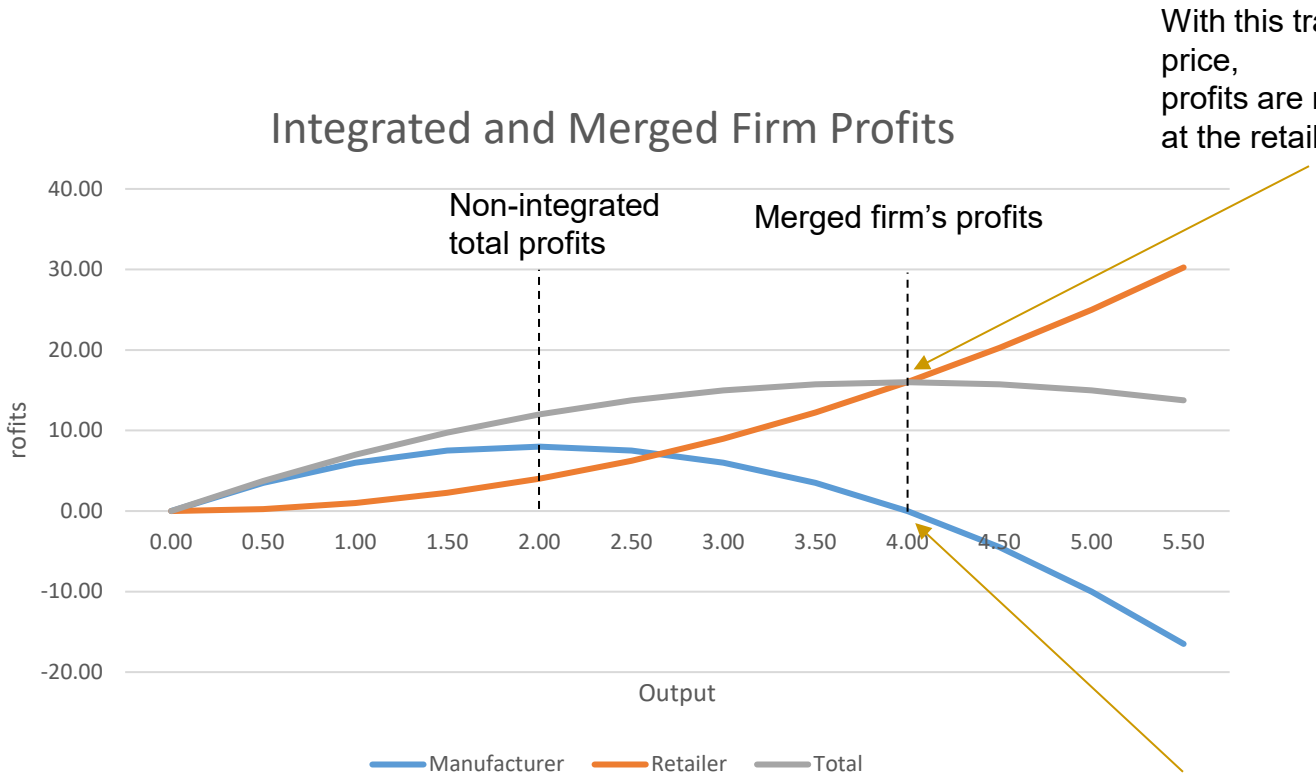
Retailer	pM	pR	mcR-T	qR	Revenues	Costs	Profits
	0	6.50	1	5.50	35.75	5.50	30.25
	1	7.00	2	5.00	35.00	10.00	25.00
	2	7.50	3	4.50	33.75	13.50	20.25
	3	8.00	4	4.00	32.00	16.00	16.00
	4	8.50	5	3.50	29.75	17.50	12.25
	5	9.00	6	3.00	27.00	18.00	9.00
	6	9.50	7	2.50	23.75	17.50	6.25
	7	**10.00**	**8**	**2.00**	**20.00**	**16.00**	**4.00**
	8	10.50	9	1.50	15.75	13.50	2.25
	9	11.00	10	1.00	11.00	10.00	1.00
	10	11.50	11	0.50	5.75	5.50	0.25
	11	12.00	12	0.00	0.00	0.00	0.00
	12	12.50	13	0.00	0.00	0.00	0.00

M anticipates the retailer's response to its wholesale price

Manufacturer	pM	mcM-T	qR	Revenues	Costs	Profits	Total Profits	
	0	3	5.50	0	16.50	-16.50	13.75	
	1	3	5.00	5	15.00	-10.00	15.00	
	2	3	4.50	9	13.50	-4.50	15.75	
	3	3	**4.00**	**12**	**12.00**	**0.00**	**16.00**	Merged firm
	4	3	3.50	14	10.50	3.50	15.75	
	5	3	3.00	15	9.00	6.00	15.00	
	6	3	2.50	15	7.50	7.50	13.75	
	7	**3**	**2.00**	**14**	**6.00**	**8.00**	**12.00**	Separate firms
	8	3	1.50	12	4.50	7.50	9.75	
	9	3	1.00	9	3.00	6.00	7.00	
	10	3	0.50	5	1.50	3.50	3.75	
	11	3	0.00	0	0.00	0.00	0.00	
	12	3	0.00	0.00	0.00	0.00	0.00	

Efficiencies in vertical mergers

- Elimination of double marginalization: The numbers



Appendix 3

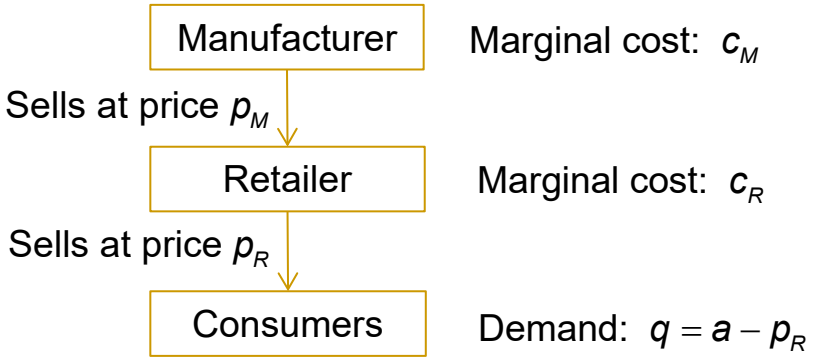
Elimination of Double Marginalization

OPTIONAL

Elimination of double marginalization

- Eliminating "double marginalization"
  - This is a major claim of efficiencies in vertical mergers
  - Paradigm example:
    - Conditions
      - Firms M and R are adjacent firms in the chain of distribution, both of which have some market power (i.e., face downward-sloping demand curves).
      - Assume without loss of generality, that Firm M is a manufacturer and Firm R simply resells M's product without modification and that c_M and c_R are the (constant) marginal costs of production and resale, respectively, for manufacturer M and reseller R.
      - In equilibrium, manufacturer M sells quantity q to reseller R at price p_M, which in turn sells the same quantity q to consumers at price p_R (i.e., there is no overproduction or inventory holding).
    - Assume that consumer demand is linear and normalize p so that:

$$q = a - p_R.$$



Elimination of double marginalization

- Eliminating "double marginalization"
  - *The retailer's problem*: The profit function and first order condition for the retailer R are:

$$\begin{aligned}
\underset{p_R}{\text{Max}}\ \pi_R &= p_R q - (p_M + c_R) q \\
&= \left(p_R - (p_M + c_R)\right)(a - p_R) \\
\frac{\partial \pi_R}{\partial p_R} &= -\left(p_R - (p_M + c_R)\right) + (a - p_R) \\
&= -2p_R + a + (p_M + c_R) = 0
\end{aligned}$$

Firm R's marginal cost is its unit input cost p_M plus its unit distribution cost c_R

so that $p_R = \dfrac{a + (p_M + c_R)}{2}$

$$q = \frac{a - (p_M + c_R)}{2}$$

$$\pi_R = \left(p_R - (p_M + c_R)\right)\left(\frac{a - (p_M + c_R)}{2}\right)$$

Elimination of double marginalization

- Eliminating "double marginalization"
  - *The manufacturer's problem*: Now consider the profit function and first order condition for the manufacturer M, which understands how retailer R will price the resale and can take this into account when maximizing its own profits:

$$\underset{p_M}{\text{Max}}\ \pi_M = p_M q - c_M q$$

$$= (p_M - c_M)\left(\frac{a-(p_M + c_R)}{2}\right)$$

$$\frac{\partial \pi_M}{\partial p_M} = -\frac{(p_M - c_M)}{2} + \left(\frac{a-(p_M + c_R)}{2}\right)$$

$$= \frac{-2p_M + a + (c_M - c_R)}{2} = 0$$

Since retailer R holds no inventory, the demand q for M's product by R is equal to the demand q for R's products by consumers

so that $p_M = \dfrac{a + (c_M - c_R)}{2}$

$$q = \frac{a-(p_M + c_R)}{2} = \frac{a - \left(\dfrac{a + (c_M - c_R)}{2} + c_R\right)}{2} = \frac{a-(c_M + c_R)}{4}$$

$$\pi_M = (p_M - c_M)q = (p_M - c_M)\left(\frac{a-(c_M + c_R)}{4}\right)$$

Elimination of double marginalization

- Eliminating “double marginalization”
  - Total profits of the manufacturer and retailer:

$$\pi_M + \pi_R = (p_M - c_M)q + (p_R - (p_M + c_R))q$$
$$= (p_R - (c_M + c_R))\left(\frac{a - (c_M + c_R)}{4}\right)$$

Elimination of double marginalization

- Eliminating "double marginalization"
  - *The merged firm's problem*: Assume that M and R merge. Keep in mind that the merged firm is a monopolist at both the manufacturer and retailer level. Now consider the profit function and first order condition for the combined firm:

$$\begin{aligned}\underset{p}{\text{Max}}\ \pi &= pq - (c_M + c_R)q \\ &= (p - (c_M + c_R))(a - p) \\ \frac{\partial \pi}{\partial p} &= a - 2p + (c_M + c_R) = 0\end{aligned}$$

$$\text{so that } p = \frac{a + (c_M + c_R)}{2}$$

$$q = \frac{a - (c_M + c_R)}{2}$$

$$\pi = (p - (c_M + c_R))q = (p - (c_M + c_R))\left(\frac{a - (c_M + c_R)}{2}\right)$$

Elimination of double marginalization

- Eliminating "double marginalization"
  - Comparing the non-integrated and merged firm solutions

	Non-Integrated Firm	Merged Firm
Price to consumers	$\frac{a+(p_M+c_R)}{2}$	$\frac{a+(c_M+c_R)}{2}$
Quantity produced	$\frac{a-(p_M+c_R)}{2}$	$\frac{a-(c_M+c_R)}{2}$
Total profits	$(p_R-(c_M+c_R))\left(\frac{a-(c_M+c_R)}{4}\right)$	$(p-(c_M+c_R))\left(\frac{a-(c_M+c_R)}{2}\right)$

  - If $p_M > c_M$ (which it will be so long a $q > 0$), then the merged firm has lower prices to consumers, higher output, and higher profits than the two firms operating independently.
  - In this single-retailer model, a transfer price equal to upstream marginal cost implements the joint optimum. Recording profit at the retailer level is an accounting convention