Price Discrimination and Vertical Integration

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Who is ALCOA?

Alcoa is the world leader in the production and management of primary aluminum, fabricated aluminum and alumina combined, through its active and growing participation in all major aspects of the industry.

Alcoa serves the aerospace, automotive, packaging, building and construction, commercial transportation and industrial markets, bringing design, engineering, production and other capabilities of Alcoa's businesses to customers.

In addition to aluminum products and components including flat-rolled products, hard alloy extrusions, and forgings, Alcoa also markets Alcoa® wheels, fastening systems, precision and investment castings, and building systems.

The Company has 97,000 employees in 34 countries and has been named one of the top most sustainable corporations in the world at the World Economic Forum in Davos, Switzerland. (Source: Alcoa Website)

History

- **Aluminum Company of America** (Alcoa) dominated the market for aluminum during the first half of the 20th century
- **1912**: Alcoa found guilty of using contracts to eliminate competition and entering into non-aggressiveness pact with foreign competitors.
- **1940:** A case against Alcoa is dismissed
- **1945**: Appellate court rules Alcoa guilty of antitrust violations.
- Alcoa controlled 91% of the primary market. In the 1940 case, including the secondary market and excluding the aluminum used by Alcoa **gave Alcoa 33% market share, not enough to be a monopoly**. Judge Hand reversed that decision in 1945.

Some Definitions

-Vertical Integration: When a single firm participates in more than one successive stage of the production process *[example: American Apparel (fashion retailer) dyeing, finishing, designing, sewing, cutting, marketing, advertising and distribution of the company's product]*

-Arbitrage: When a consumer purchases a good with the intent to immediately resell in another market at a higher price and enjoy the profit

-Ingot: A chunk of metal (convenient for shaping, remelting, or refining)

Uses of Aluminum Ingots

Iron and Steel Industry

* Reducing Agent

Aircraft Industry

*Airplane parts

-Electric Cable

-Cooking Utensils

-Automobile Parts

Price Discrimination

The practice of charging different people different prices for the same goods or services. Goal: To capture more CS

1. **First degree price discrimination:** occurs when identical goods are sold at different prices to each individual consumer.

❖ Example: people will pay different prices for cars with identical features, and the salesperson must attempt to gauge the maximum price at which the car can be sold.

2. Second-degree price discrimination: involves charging different prices for different quantities. Larger quantities are available at a lower unit price.

- More common than first degree price discrimination
- Sellers are not able to differentiate between different types of consumers

❖Example: Retail stores- A reduced price may be offered if you buy two t-shirts instead of just one. Helps rid merchandise faster and generate more revenue.

Price Discrimination

3. Third-degree price discrimination: Third degree price discrimination can be achieved when the market can be segmented and when the segments have different elasticities of demand. In all cases it attempts to derive the most sales from each segmented "group" of consumers.

- capable of differentiating between consumer classes

❖Example: Soft drink from Safeways vs Movie Theatre, consumers with more inelastic Demand pay a higher Price.

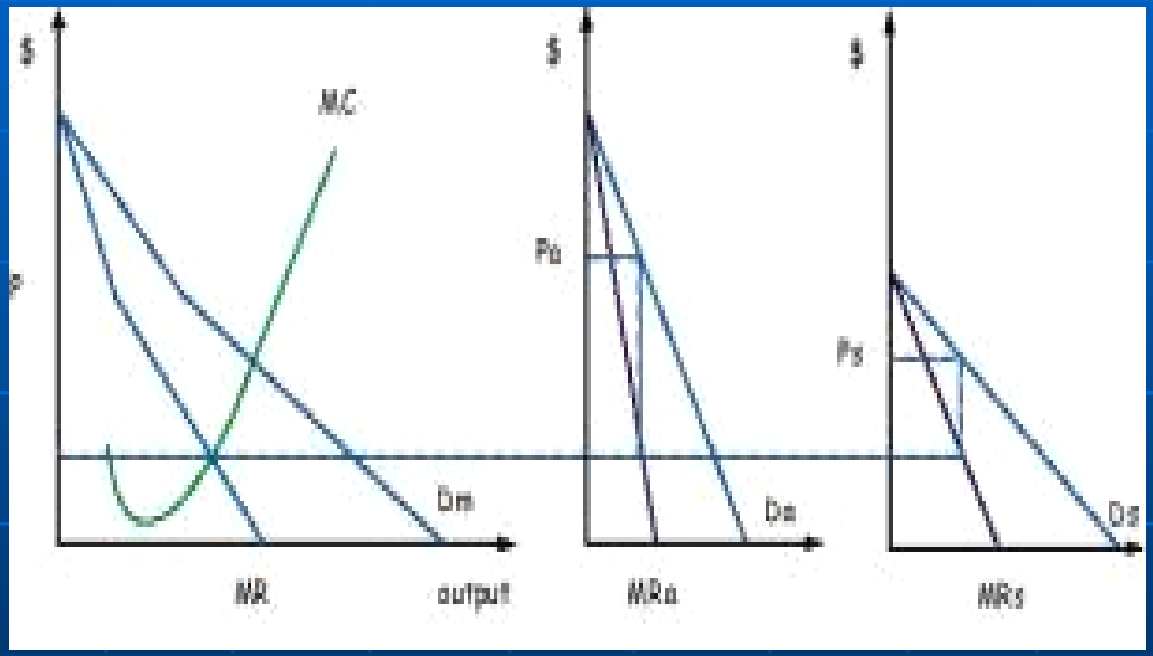
❖Example: Student and Senior discounts, Employee discounts

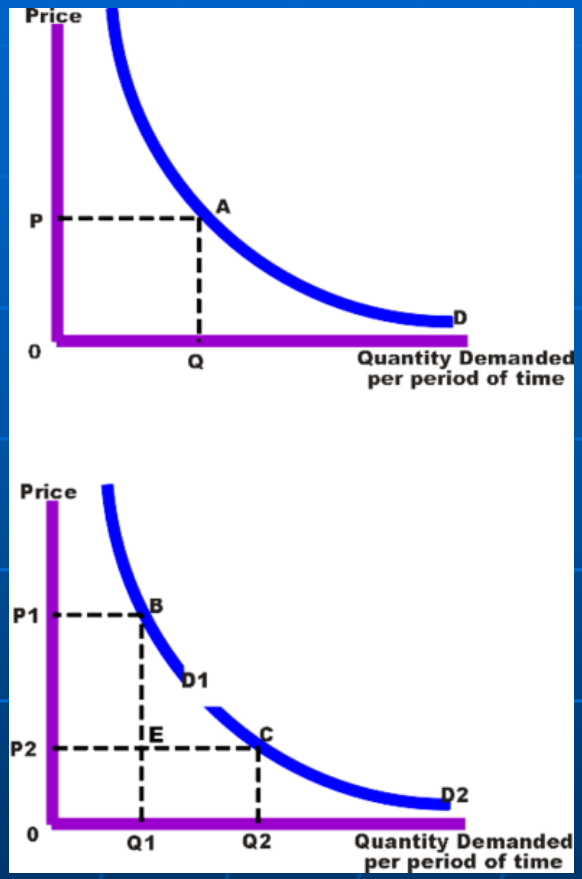
With Third-degree price discrimination, Suppliers capture more market surplus than would be possible without price discrimination.

Price Discrimination

In the top diagram, a single price (P) is available to all customers. Revenue: P, A,Q, O.

Consumer Surplus is the area above line segment P, A but below the demand curve (D).





Above: Third Degree- Each segment is considered as a separate market with its own demand curve

ALCOA uses 3rd Degree Price Discrimination:

They sorted consumers into Aircraft and Electric cable groups, each with their own price per unit

Essentially, the more prices that are introduced, the greater the sum of the revenue areas, and the more of the consumer surplus is captured by the producer.

Price Discrimination to Maximize Profit

Electric Cable Market

- In the electric cable market they wanted to sell at a LOWER price, because the industry had many substitutes, namely copper.

Aircraft Market

- ALCOA wanted to sell at a HIGHER price to the Aircraft industry because their demand is INELASTIC with few substitutes

Comparison

Price Discrimination	Common Price
$p_a = 60$	$p_a = 50$
$q_a = 40$	$q_a = 50$
$CS_a = 800$	$CS_a = 1250$
$p_e = 40$	$p_e = 50$
$q_e = 20$	$q_e = 10$
$CS_e = 200$	$CS_e = 50$
$\pi = 2000$	$\pi = 1800$

Question: Does 3rd degree PD always lead to a less efficient outcome (relative to nondiscriminatory monopoly)?

The Problem

- ALCOA, as a leading manufacturer of aluminum was in danger of being ‘undersold’ in the secondary market and could therefore not apply price discrimination techniques

PROBLEM: Arbitrage & Recycling

Companies could buy from ALCOA at a cheaper price and sell back to the Aircraft industry at a higher price, this takes ALCOA’s potential customers. Alcoa cannot directly price discriminate because the ingots can easily be resold.

Solution

Vertical integration with the aircraft company or the cable company to avoid being undersold.

- Aircraft-

If ALCOA integrates into aircraft and sells ingots to cable (at a low price), the cable firms can resell the ingots to aircraft makers and thus steal part of ALCOA's market.

- Cable-

If ALCOA integrates into cable and sells ingots to aircraft (at a high price), such resale (as occurs in integrating into aircraft).

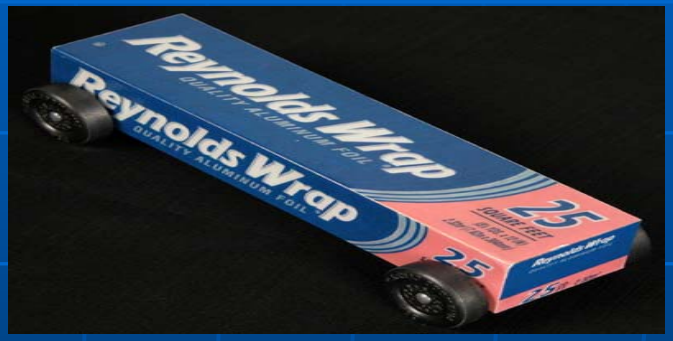
Solution

ALCOA should choose to vertically integrate with the *cable companies* so arbitrage can be prevented.

- enables ALCOA to charge high prices to aircraft
- avoids the problem of recycling and reselling.
- makes sense to integrate into an industry with ELASTIC demand.

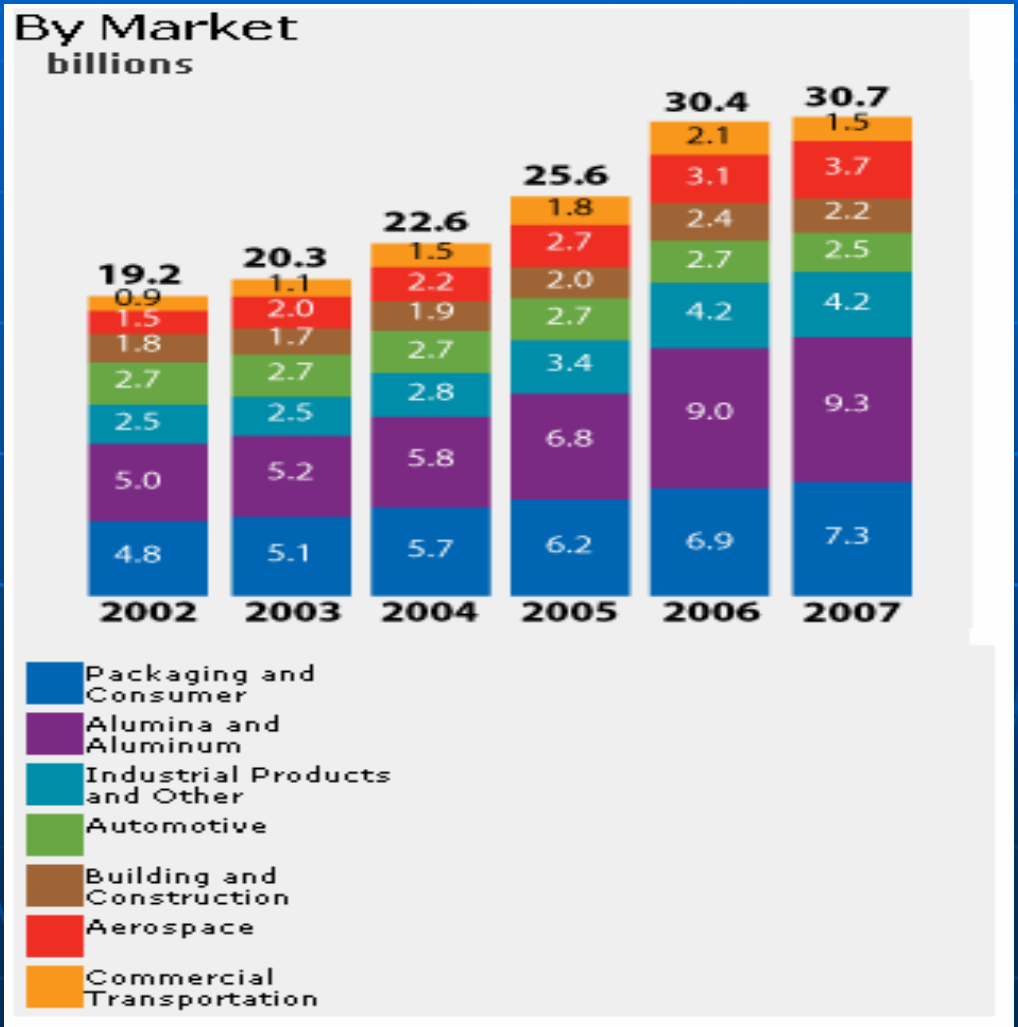
ALCOA's Other Products

- "In addition to aluminum products and components, Alcoa also makes and markets consumer brands including
- Reynolds Wrap®
- Alcoa® wheels
- Baco® household wraps
- Among its other businesses are closures, fastening systems, precision castings, and electrical distribution systems for cars and trucks." Source: Alcoa website



Quantity Variation of Products Manufactured by ALCOA

(in billions)



More Recent Vertical Integration

March 3rd 2008:

Alcoa (NYSE:AA) announced today that it has combined its Wheel Products business with its Auto and Truck Structures business to form a new business unit, called Wheel and Transportation Products

The new business unit, headquartered in Cleveland, will serve the commercial vehicle, automotive, and defense markets with products used in a range of applications including forged aluminum wheels, aluminum space frames, specialized vacuum die cast products, niche products such as Dura-Bright® and Dura-Flange® wheels and M-Series™ medium truck wheel, as well as a variety of other aluminum components for these market

Source: Alcoa website (News & Releases)

Recent News from Alcoa

February 12, 2009
From NEW YORK--(BUSINESS WIRE)--Alcoa (NYSE:AA)
Alcoa has formed a strategic cooperation agreement with the People's Government of Henan Province in China to jointly establish world class projects for the fabricated and primary aluminum industry. The agreement was signed yesterday at Alcoa's New York headquarters by Alcoa President and CEO Klaus Kleinfeld and Governor Guo Gengmao of Henan. Henan is located in central China and is the country's largest producer of non ferrous metals.
"The goals that Henan Province has for developing a modern metals industry: integration, efficiency, energy management, and sustainability – these are challenges that Alcoa has faced and met over the years, in partnerships with communities across the world," said Kleinfeld.

March 9, 2009:
From NEW YORK--(BUSINESS WIRE)--Alcoa (NYSE:AA)
Currently it is one of the most admired metals company; they have the best reputation in the entire metal industry. Alcoa also took top position in innovation, social responsibility, and quality of products and services within the entire industry.
•)

Some controversy

- Feb. 29th 2008:

- **Alcoa Is Sued for Fraud, Bribery by Bahrain Firm**
- Alcoa was sued by a metals company controlled by the Persian Gulf nation of Bahrain for at least $1 billion on claims of fraud and bribery of officials overseas.
- Aluminium Bahrain, or Alba, sued Alcoa in federal court in Pittsburgh on Wednesday, claiming it was overcharged for 15 years for alumina, an ingredient used to make aluminum. Alba, the 10th-largest aluminum producer, claims Alcoa bribed unidentified Bahraini government and company officials to get business. Alcoa is the world's largest producer of alumina and third-largest aluminum producer.
- Bank records and invoices show that more than $2 billion in the Bahraini firm's payments for alumina passed from Bahrain to tiny companies in Singapore, Switzerland and the Isle of Guernsey. The suit filed by the firm in the U.S. alleged that some of the money found its way back to Bahraini "senior government officials" involved in granting the contracts. It is highly unusual for a country to use U.S. courts to accuse an American company of bribery, WSJ reports.

Conclusions

- ALCOA case followed patterns of 3rd degree price discrimination
- ALCOA decided to vertically intregrate into an industry with ELASTIC demand
- Did not violate antitrust laws, considered more to be a “highly competitive firm”- Alan Greenspan