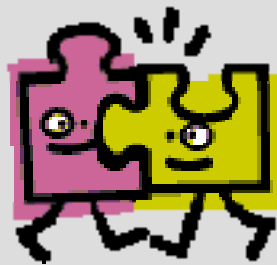


Managerial Economics & Business Strategy

Chapter 13

Advanced Topics in Business Strategy



Overview

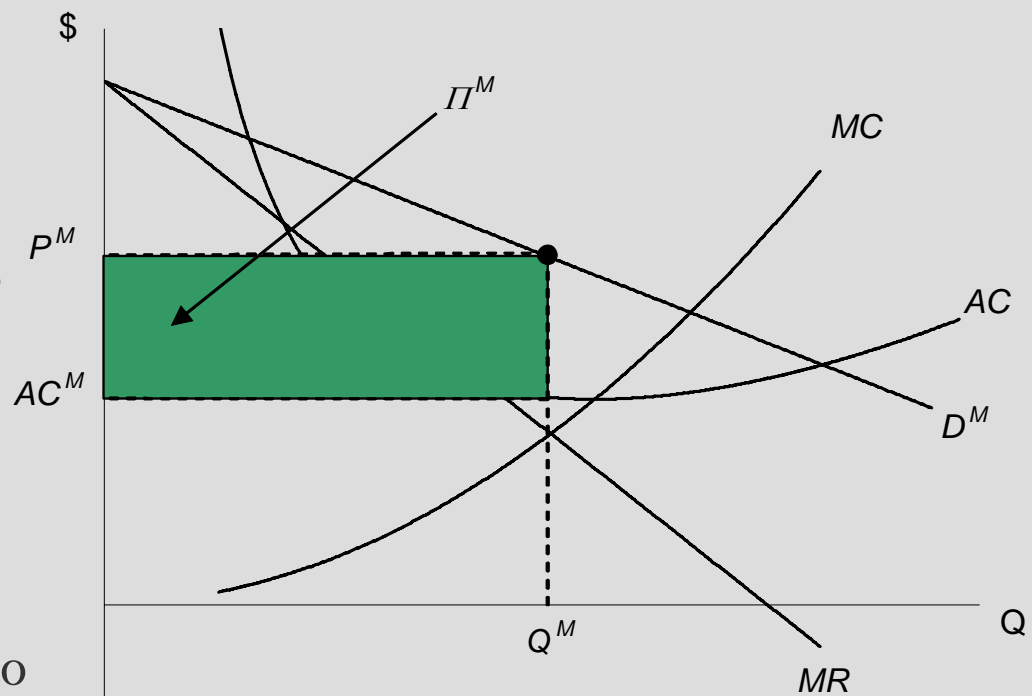
- I. Limit Pricing to Prevent Entry
- II. Predatory Pricing to Lessen Competition
- III. Raising Rivals' Costs to Lessen Competition
- IV. Price Discrimination as a Strategic Tool
- V. Changing the Timing of Decisions
- VI. Penetration Pricing to Overcome Network Effects

Limit Pricing

- Strategy where an incumbent (existing firm) prices below the monopoly price in order to keep potential entrants out of the market.
- Goal is to lessen competition by eliminating potential competitors' incentives to enter the market.

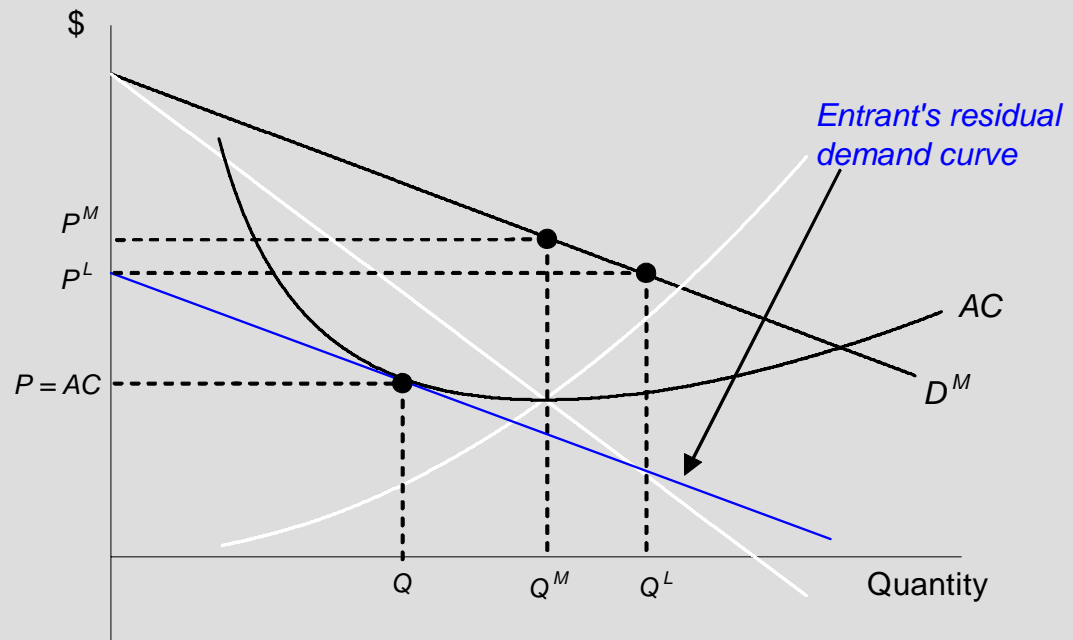
Monopoly Profits

- This monopolist is earning positive economic profits.
- These profits may induce other firms to enter the market.
- Questions:
 - Can the monopolist prevent entry?
 - If so, is it profitable to do so?



Limit Pricing

- Incumbent produces Q^L instead of monopoly output (Q^M).
- Resulting price, P^L , is lower than monopoly price (P^M).
- Residual demand curve is the market demand (D^M) minus Q^L .
- Entry is not profitable because entrant's residual demand lies below AC.
- Optimal limit pricing results in a residual demand such that, if the entrant entered and produced Q units, its profits would be zero.



Potential Problems with Limit Pricing

- It isn't generally profitable for the incumbent to maintain an output of Q^L once entry occurs.
- Rational entrants will realize this and enter.
- Solution: Incumbent must link its pre-entry price to the post-entry profits of the potential entrant.
- Possible links:
 - Commitments by incumbents.
 - Learning curve effects.
 - Incomplete information.
 - Reputation effects.

Potential Problems with Limit Pricing (Continued)

- Even if a link can be forged, it may not be profitable to limit price! Limit pricing is profitable only if the present value of the benefits of limit pricing exceed the up front costs:

$$\frac{(\pi^L - \pi^D)}{i} > \pi^M - \pi^L.$$

Predatory Pricing

- Strategy of pricing below marginal cost to drive competitors out of business, then raising price to enjoy the higher profits resulting from lessened competition.
- Goal is to lessen competition by eliminating existing competitors.

Potential Problems with Predatory Pricing

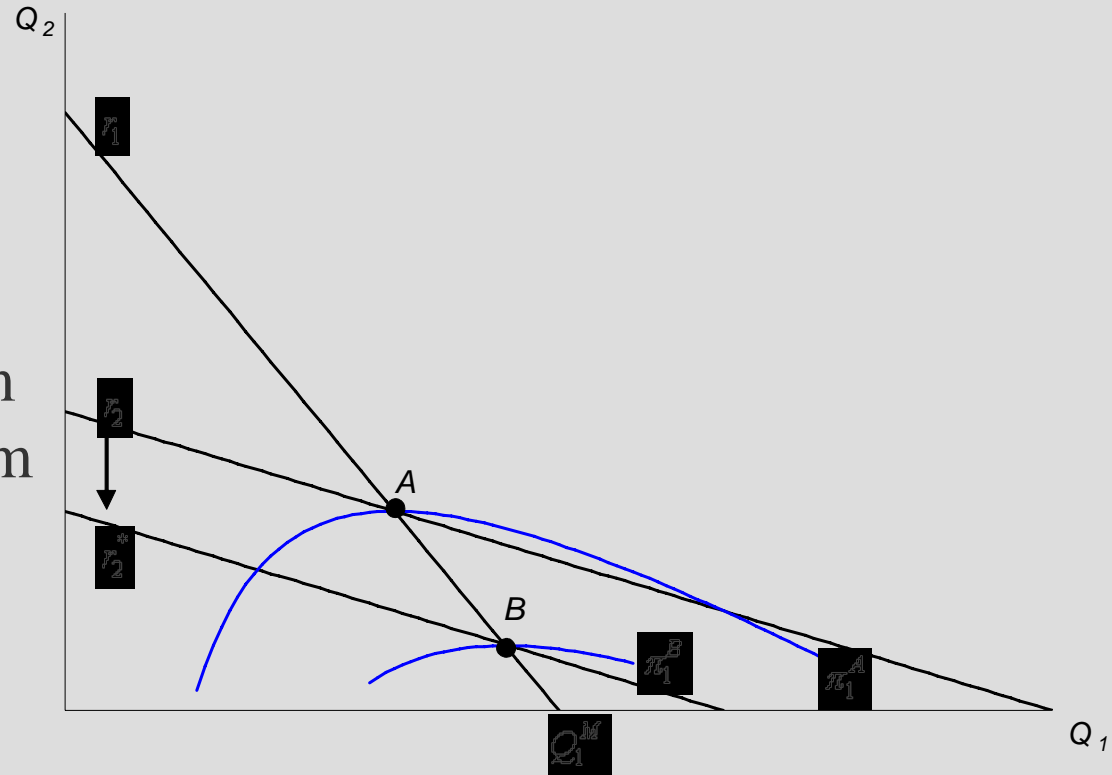
- Counter strategies:
 - Stop production.
 - Purchase from the predator at the reduced price and stockpile until predatory pricing is over.
- Rivals can sue under the Sherman Act
 - But it is often difficult for rivals to prove their case.
- Upfront losses incurred to drive out rivals may exceed the present value of future monopoly profits.
- Predator must have deeper pockets than prey.

Raising Rivals' Costs

- Strategy where a firm increases the marginal or fixed costs of rivals to distort their incentives.
- Not always profitable, but may be profitable as the following example shows.

Raising a Rival's Marginal Cost

- Cournot duopoly.
- Initial equilibrium at point A.
- Firm 1 raises the marginal cost of Firm 2, moving equilibrium to point B.
- Firm 1 gains market share and profits.



Other Strategies to Raise Rivals' Costs

- Raise fixed costs in the industry.
- If vertically integrated, increase input prices in the upstream market.
 - **Vertical Foreclosure:** Integrated firm charges rivals prohibitive price for an essential input.
 - **The Price-Cost Squeeze:** Integrated firm raises input price and holds the final product price constant.

Price Discrimination as a Strategic Tool

- Price discrimination permits a firm to “target” price cuts to those consumers or markets that will inflict the most damage to the rival (in the case of predatory pricing) or potential entrants (in the case of limit pricing).
- Meanwhile, it can continue to charge the monopoly price to its other customers.
- Thus, price discrimination may enhance the value of other pricing strategies.

Changing the Timing of Decisions or the Order of Moves

- Sometimes profits can be enhanced by changing the timing of decisions or the order of moves.
 - When there is a first-mover advantage, it pays to commit to a decision first.
 - When there is a second-mover advantage, it pays to let the other player move first.

Examples of Games with First and Second-Mover Advantages

- Example 1: Player naming the smaller natural number gets \$10, the other players get nothing.
 - First-mover always earns \$10.
- Example 2: Player naming the larger natural number gets \$10, the other players get nothing.
 - Last-mover always earns \$10
- Practical Examples?

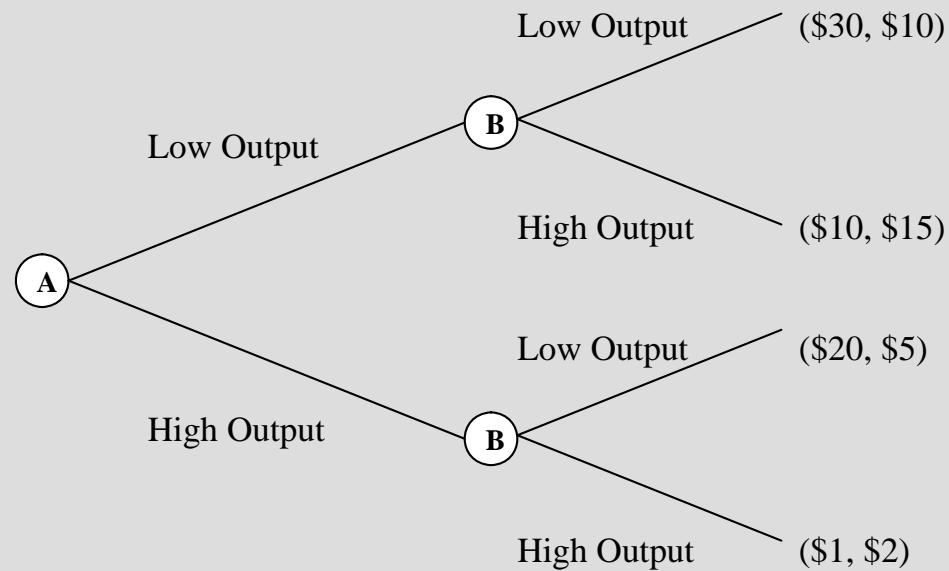
If Firms A and B Make Production Decisions Simultaneously

		Firm B	
		Low Output	High Output
Firm A	Low Output	\$30, \$10	\$10, \$15
	High Output	\$20, \$5	\$1, \$2

- Firm A earns \$10 by playing its dominant strategy, which is “Low Output.”

But if A Moves First:

- Firm A can earn \$20 by producing a high output!
- Requires
 - Commitment to a high output.
 - Player B observes A's commitment prior to making its own production decision.

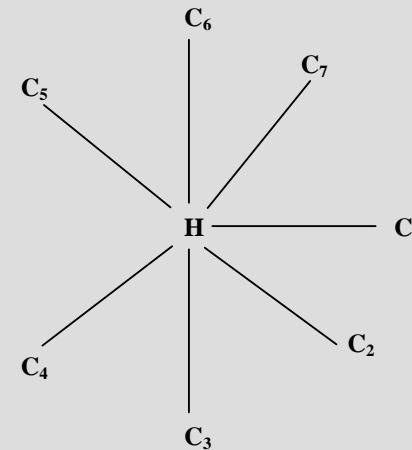


Networks

- A network consists of links that connect different points in geographic or economic space.
- **One-way Network** – Services flow in only one direction.
 - Examples: water, electricity.
- **Two-way Network** – Value to each user depends directly on how many other people use the network.
 - Examples: telephone, e-mail.

Example: A Two-Way Star Network Linking 7 Users

- Point H is the *hub*.
- Points C_1 through C_7 are *nodes* representing users.
- Total number of connection services is $n(n - 1) = 7(7-1) = 42$.



Network Externalities

- **Direct Network Externality** – The direct value enjoyed by the user of a network because other people also use the network.
- **Indirect Network Externality** – The indirect value enjoyed by the user of a network because of complementarities between the size of the network and the availability of complementary products or services.
- **Negative Externalities** such as congestion and bottlenecks can also arise as a network grows.

Penetration Pricing to Overcome Network Effects

- Problem: Network externalities typically make it difficult for a new network to replace or compete with an existing network.
- Solution: Penetration Pricing
 - The new network can charge an initial price that is very low, give the product away, or even pay consumers to try the new product to gain users.
 - Once a critical mass of users switch to the new network, prices can be increased.

The New Network Game Without Penetration Pricing

		Table 13-2 A Network Game	
		User 2	
User 1	Network Provider	H1	H2
	H1	\$10, \$10	\$0, \$0
	H2	\$0, \$0	\$20, \$20

- Coordination Problem
 - Neither user has an incentive to unilaterally switch to H₂, even though both users would benefit if they simultaneously switched.
 - With many users, it is difficult to coordinate a move to the better equilibrium.
 - Users may stay locked in at the red equilibrium instead of moving to green one.

The New Network Game With Penetration Pricing

		Table 13-3 The Network Game with Penetration Pricing	
		User 2	
User 1	Network Provider	H ₁	H ₁ & H ₂
	H ₁	\$10, \$10	\$10, \$11
	H ₁ & H ₂	\$11, \$10	\$21, \$21

- Network provider H₂ *pays* consumers \$1 to try its network; consumers have nothing to lose in trying both networks. The green cell is the equilibrium.
- Users will eventually realize that H₂ is better than H₁ and that other users have access to this new network.
- Users will eventually quit using H₁, at which point provider H₂ can eliminate \$1 payment and start charging for network access.

Conclusion

- A number of strategies may enhance profits:
 - Limit pricing.
 - Predatory pricing.
 - Raising rivals' costs.
 - Exercising first- or second-mover advantages.
 - Penetration pricing.
- These strategies are not always the best ones, though, and care must be taken when using any of the above strategies.