Why Tie a Product Consumers Do Not Use

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Opinions are not necessarily those of the Commission

Overview

- When tying itself benefits consumers, tying can be used to limit a Cournot Complements problem.
  - A primary good's monopolist's complementary good limits the price that can be charged a competing complementary good.
  - Limiting the price of the competing complementary good increases the monopolist's profit maximizing price for the primary good.
  - If the act of tying raises the value of the monopolist's complementary good, then tying lowers the further the price of the competing complementary good.
  - This allows the monopolist to increase the price charged for the primary good.

Comment

- Model is supposed to predict the division of surplus between the primary good monopolist and the alternate (competing) complementary good producer.
- But the model has multiple pricing equilibria.
- So exogenous assumption about surplus division is needed yield a unique solution.
- This is unsatisfying because the model should fully specify the surplus division.

- So we need a model that uniquely determines price to eliminate the exogenous assumption.

New Model

- $Q = W – (P_P + P_m)$ - demand for monop's system, no tie
- E - extra each customer will pay for alternate system
- Δ – additional value from tying monop's comp. good
- All marginal costs are zero

- Dominated strategy for A to set $P_A > E + P_m$ no tying
- Dominated strategy for A to set $P_A > E – \Delta$ tying
- Dominant strategy for M to set $P_m = 0$ when not tying

$\Pi_M = P_P(W+E – (P_P + P_A))$

$\Pi_A = P_A(W+E – (P_P + P_A))$ s.t. $P_A < E$ no tying; $P_A < E – \Delta$ tying

New Model

Unconstrained equilibrium no tying

$P_P^* = P_A^* = (W + E)/3$, $P_M^* = 0$ if $(W+E)/3 < E$

Tying changes the equilibrium sometimes

$P_P^* = P_A^* = (W + E)/3$ if $(W+E)/3 < E - \Delta$

$P_P^* = (W + \Delta)/2$, $P_A^* = (E - \Delta)$, if $(W+E)/3 > E - \Delta$

If A's unconstrained equilibrium price less than $E - \Delta$, then tying has no effect on equilibrium prices. Otherwise there is an incentive to tie.

New Model

Constrained equilibrium no tying

$P_P^* = W/2$, $P_A^* = E$, $P_M^* = 0$ if $(W+E)/3 > E$

Tying changes the equilibrium always

$P_P^{**} = (W + \Delta)/2$, $P_A^{**} = (E - \Delta)$

If A's price is constrained by the existence of the monopolist's untied complement, then there is an incentive to tie.

New Model II

- Better Model
  - All customers value monop. system identically.
  - Valuation for A's good distributed from 0 to E.
- Conjectures
  - In no tying subgame has some consumers using monopoly good and others using alternative.
  - There is always an incentive to tie.