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Technology Markets

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Market Definition: Guideposts or Lamp Posts?

- **Lamp Posts**
 - Lead antitrust inquiry to sectors where competitive effects are apparent, not necessarily where competitive effects are likely

- **Guideposts**
 - Serve to focus the analysis and identify likely competitive effects



Markets for Technology v. Technology Markets

- Goods markets are sufficient for antitrust analysis in many high technology industries
- Technology markets are useful when rights to a technology are licensed, rather than embodied in a product



Technology Markets: IP Guidelines

Technology markets consist of the intellectual property that is licensed (the “licensed technology”) and its close substitutes—that is, the technologies or goods that are close enough substitutes significantly to constrain the exercise of market power with respect to the intellectual property that is licensed. When rights to intellectual property are marketed separately from the products in which they are used, the Agencies may rely on technology markets to analyze the competitive effects of a licensing arrangement.

(footnotes omitted)



Technology Markets

Upstream analysis for inputs

e.g. licensing of technology to manufacture float glass, blend clean gasoline, design fast computer memory chips, perform laser eye surgery, incorporate genetically modified traits in agricultural seeds



Geographic Market

Technology markets typically have wide geographic scope because potential licensees can negotiate with licensors at distant locations



Technology Fees – Indicators of Market Power?

- Marginal cost of licensing is typically low
 - Suggests market power
- Relevant question is ability to increase *or maintain* technology fees significantly above marginal costs for an extended time



Technology Fees – Indicators of Market Power?

- A related relevant question is whether competition would result in a significantly lower technology fee if it were not excluded
- Focus on ability of additional competition to lower the technology fee gets around the Cellophane fallacy and connects market definition to analysis of competitive effects
 - A profit-maximizing firm has no incentive to raise or lower its technology fee



High Technology Fees v. High Consumer Prices

- Antitrust analysis for technology inputs is not qualitatively different from analysis of other upstream goods or services
- Demand for an input is derived from the demand for the final good or service



High Technology Fees v. High Consumer Prices

- Hicks-Marshall law of derived demand: elasticity of derived demand is proportional to the cost share of the input
- Implies relatively inelastic demand for inputs
 - Greater ability to affect input price
 - But input price has only indirect effect on final consumer price



Where to Analyze Market Power?

- Upstream analysis may overstate ability to affect consumer prices
- But far enough downstream, every product or service is a competitive alternative
- Analysis should take place where a firm has the ability and incentive to raise or maintain a price paid for an input or a final good



Example: Genetically Modified Seeds

- Genetically modified traits express desired characteristics for seeds: e.g., insect resistance in corn
- Do conventional seeds compete with licenses for seed traits?



Example: Genetically Modified Seeds

- Some competition with conventional crops, but agricultural markets are embracing genetically modified seeds
 - Soybeans 80+%, Corn 50+%
- Incentives to maintain high trait prices are best analyzed in markets for traits