

Econ 121, spring 2006
Professor Joseph Farrell
Last problem set this semester
Due at beginning of class, Tuesday May 9.

1. In the early 1990s, Silicon Graphics, Inc. (SGI) was a near-monopolist on computers to do 3-dimensional movie special effects. The software for creating those special effects on SGI computers was supplied by multiple software firms. SGI proposed to buy those software firms.
 - a. Assume that the “industry” of providing software for this purpose was perfectly competitive with constant returns to scale, that SGI was buying all the software firms, that no new ones would enter, and that costs would not change as a result of the acquisitions. What effect would you expect the acquisitions to have on the total price that users had to pay for the system consisting of SGI hardware plus associated software? Explain using ICE, the theory of vertical integration, and/or other insights from class or the textbook.
 - b. Keeping most of the same assumptions but now recognizing that the SGI-compatible software “industry” had big fixed costs of program development, very low marginal costs, and just two main firms (Wavefront and Alias), what would those arguments suggest about the net impact on consumers?
 - c. [FYI (not a question): The FTC approved the mergers but required that Wavefront and Alias must “port” their software to nascent potential competitors of SGI such as HP.]
2. Carlton and Perloff chapter 20, problem 2 (page 735).
3. Suppose that everyone believes that if a certain patent were fully litigated, it would be equally likely to be found valid or not. A potential user of the technology allegedly covered by the patent values using that technology at V .
 - a. Suppose that the user and the patent-holder negotiate a license. Explain why, ignoring costs of litigating the patent, the user will not pay more than $V/2$ for a license.
 - b. Explain how that may change if either
 - i. If the user uses the technology without a license, the patent-holder sues for infringement, and the patent is upheld, then the user has to pay damages $D > V$.
 - ii. There are multiple users, who compete with one another in a product market downstream.