KANSAS STATE UNIVERSITY

Economic Analysis for Business
(Economics 815)

Professor D. Weisman
Spring 2009

Take-Home Essay Question 2

Instructions: This is the second take-home essay question for this class and it is worth 50 points. The essay must be typed, either double-spaced or one and one-half spaced, and use a font size no smaller than 12 pt. While there is no definitive page constraint, you are encouraged to practice economy of presentation. You need not type any graphical analysis used in support of your answer, but such graphs should be constructed with precision. Your name, student number and class time should appear in the upper right-hand corner of your essay. You may work with your classmates in developing the ideas necessary to answer this question, but the write-up itself should be your own work. These instructions should be followed precisely.

The Department of Justice (DOJ) is charged with overseeing mergers in the United States to determine if they are in the *public interest.* A merger is considered in the *public interest* if consumers' surplus does not fall as a result of the merger. The DOJ is currently considering the merits of a merger between AT&T and Verizon. Currently, AT&T and Verizon compete against one another in the long distance market, which is perfectly competitive. The market demand for long distance telephone service is given by $Q = 32 - 2P + s$, where Q is quantity demanded, P is price, and $s > 0$ is an index of service quality. The production function for long distance telephone service is given by $Q = \min\{2K, L\}$. AT&T claims that it will realize greater efficiencies if it is allowed to merge with Verizon. This implies that the production function for long-distance telephone service post-merger is given by $Q = x \min\{2K, L\}$, where $x > 1$. Suppose that $r = 4$ and $w = 3$, and the pre-merger service quality index is $s = 4$.

a)(20) Suppose that the market for long distance telephone service is a Cournot duopoly, post-merger. Each firm produces according to $Q = x \min\{2K, L\}$, where $x = 5/4$. Assume that $s = 4$, post-merger. How much better/worse off would consumers be as a result of this merger?

b)(15) Suppose that the market for long distance telephone service is a monopoly following the merger and that $x = 5/4$. For what values of s would the DOJ approve this merger?

c)(15) Derive the cost function for AT&T/Verizon post-merger for any value of x. Suppose that the market for long distance telephone service is a Cournot oligopoly comprised of five identical firms, post-merger. In addition, suppose that the DOJ believes that the service quality index (s) will double following the merger. For what values of x would the DOJ approve this merger?