

ECON 321, Class 19: BP Chapter 20, Network Effects

1. Read Section 20.1. Pay particular attention to indirect and direct network effects.

2. Skim Section 20.2, but pay attention to the part about fulfilled expectations. Here is a simpler version of the model that has two networks on a Hotelling line instead of just one (exercise 20.3 in the print book):

There are two firms located at points 0 and 1 on a Hotelling line. Each offers a network with expected network effect n_i^e . Consumers are located uniformly along the line, and a consumer at point x receives utility

$$60 - \tau x - p_1 + n_1^e \text{ if she buys from network 1} \quad (1)$$

$$60 - \tau(1 - x) - p_2 + n_2^e \text{ if she buys from network 2} \quad (2)$$

Every consumer buys from one network or the other, so that $n_1^e = 1 - n_2^e$. You can assume $\tau > 1$.

The networks play the following game: in stage 1, each network sets a price p_i ; in stage 2, consumers observe the prices and join the network that maximizes their utility. There must be rational expectations in the sense that the number of buyers in stage 2, n_i , must equal the number of expected buyers n_i^e in the utility function. Furthermore, there is a unit mass of consumers, so we have to have $n_1 = \hat{x}$ where \hat{x} is the indifferent consumer.

Each network has a profit function $\pi_i = p_i n_i$. There are no marginal costs. Find the subgame perfect Nash equilibrium prices and profits.