9: Public Goods & Externalities

Announcements

Reading Quiz

11. Which of the following was **not** discussed in the articles for today?
   a. “Piggybacking” on services others have purchased.
   b. The impact of agriculture on drinking water in California.
   c. The high cost of water for a public school in Seville, California.
   d. Wi-fi access.
   e. None of the above – all were discussed.

- A public good is defined as a good that is nonexcludable and nonrival.
  – What is something in this room that satisfies these two properties?
  – What is something in this room that satisfies neither of these properties?
Public, Private, Club and Common-Pool Goods

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**Excludable**: The owner of an asset can (at low cost) exclude others from using that asset.

**Rival (a.k.a. divisible)**: Use of an asset by one person significantly diminishes the benefits to others.

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“Hey Neighbor, Stop Piggybacking on My Wireless”
By Michel Marriott, March 5, 2006

For a while, the wireless Internet connection Christine and Randy Brodeur installed last year seemed perfect. They were able to sit in their sunny Los Angeles backyard working on their laptop computers. But they soon began noticing that their high-speed Internet access had become as slow as rush-hour traffic on the 405 freeway.

“I didn’t know whether to blame it on the Santa Ana winds or what,” recalled Mrs. Brodeur, the chief executive of Socket Media, a marketing and public relations agency.

The “what” turned out to be neighbors who had tapped into their system. The additional online traffic nearly choked out the Brodeurs, who paid a $40 monthly fee for their Internet service, slowing their access until it was practically unusable.

For the Brodeurs in Los Angeles, a close reading of their network’s manual helped them to finally encrypt their network. The Brodeurs told their neighbors that the network belonged to them and not to the neighborhood. While apologetic, some neighbors still wanted access to it.

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Wireless Networks
(refer to article)

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1. What type of good was the Brodeur’s internet when they first installed it?
2. What type of good did it become after a short time?
3. What type of good did it become by the end of the story?
4. What type of good is the TAMU wireless connection (on a good day)?
Wireless Networks
(refer to article)

- Are there externalities (both positive and negative) that arise when an owner of a wireless network leaves it unprotected?
- If your neighbor wants to check her e-mail once per day, is it socially efficient to put security settings on a wireless router? (Hint: MB & MC)

Some public goods exercises
If Joe has a neighbor, Judy, who has exactly the same demand curve as Joe, and Joe has already paid for the park, would Judy willingly pay for more?

Would Judy willingly pay for some park land after Joe has already done so?

What is the socially optimal level?
Externalities

Bob has a great business. He sells corn muffins real cheap, just covering the cost of Bob’s labor. His clients are very satisfied. **Is this an economically efficient arrangement? Why or why not?**

Now Bob has started a BBQ restaurant. He sells his meat for the cost of his labor & materials. His clients are very satisfied. **Is this an economically efficient arrangement? Why or why not?**
Consider the problem of agriculture’s impact on drinking water

- For each of the following, identify 2 items for each
  - Private (market) costs of farming
  - Private (market) benefits of farming
  - External costs of farming
  - External benefits of farming
  (this may not be covered in the article)

Class Discussion

Do you guess that it would be socially efficient to diminish pollution from Californian agriculture?

Some externality exercises
What would be the market equilibrium quantity and price?

$2 / unit negative external cost

a) What would be the socially optimal quantity of the good?
b) What would be the market equilibrium quantity?

c) Shade in on the graph the total net benefits to society at the market equilibrium.
d) Shade in the total external costs to society.

Now assume that the good is education. There is no external cost, but each unit produced generates a $1 external benefit—an educated populace makes everyone better off.

A) What would be the market equilibrium quantity?

B) Shade in the welfare cost (if any) to society that results from the market equilibrium.