Thoughts on Broadband Competition and Product Bundles

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Massive Literature on Tying/Bundling

- Various motives for tying/bundling
  - Price discrimination
  - Exclusion
  - Product differentiation
  - Rent extraction of value created by a complement
- Tying and/or bundling *can* be pro-consumer and pro-welfare

Mapping market into models

- 1 or 2 providers of Internet access
- Competitive providers/substitutes for phone service.
  - VOIP services/mobile.
- 1 or 2 providers of TV services, substitutes for TV services, but not every customer demands TV services.
- All items are either independent or complements– synergies in co-production.

Ex:1-Way Essential Complements

- Chen and Nalebuff (2009)
- Two goods, A is *essential* and B is *dependent*
  - Consumers can enjoy A without B, but can enjoy B only if they buy A.
- Example:
  - Cable Modem Service and IP telephony

Background Intuition: 1WEC

- Simple Case, A and B from different firms
  - All consumers value A at 1 and B at 0.1
  - Assume zero cost to produce either A or B

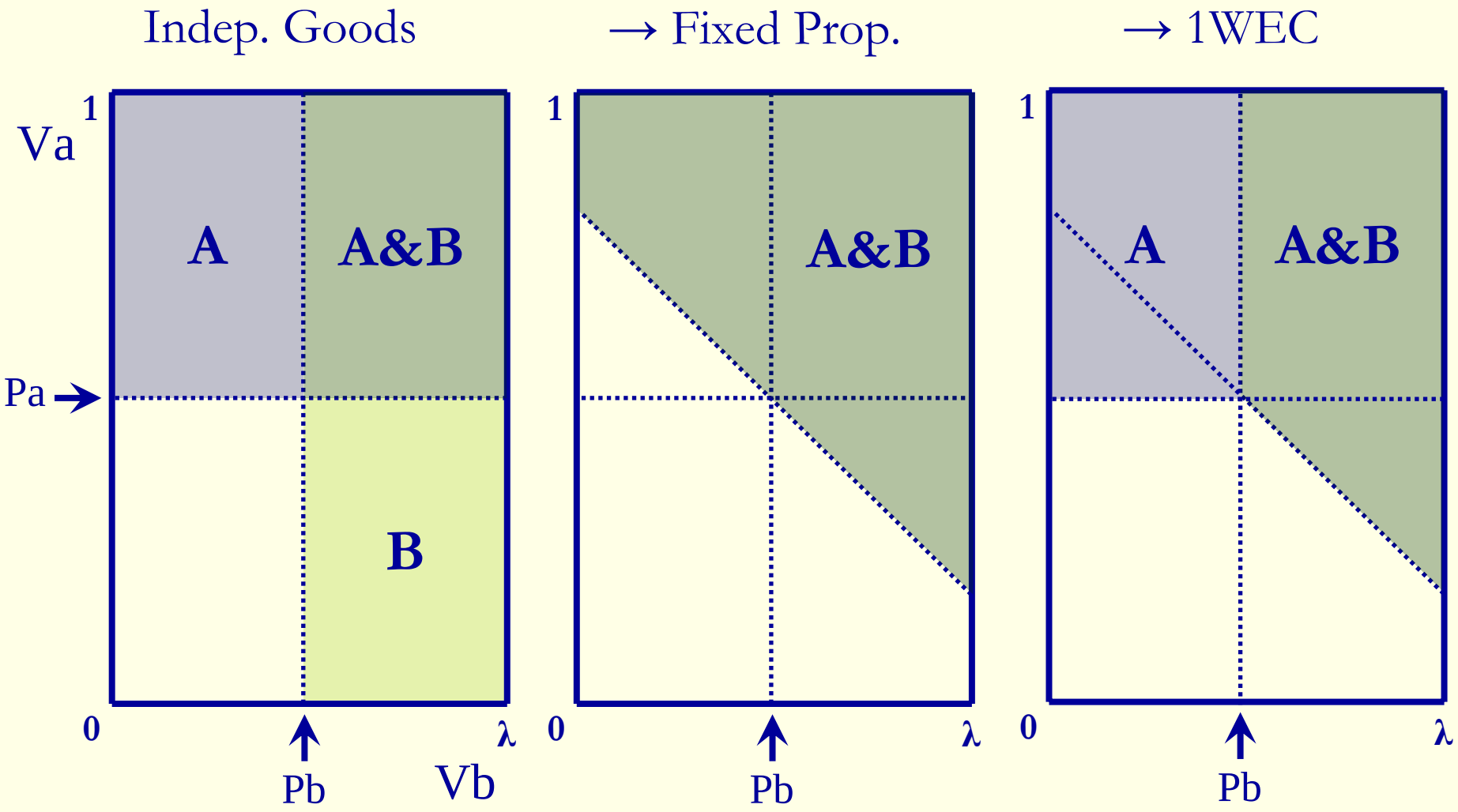
  Result: division of pie is indeterminate
  - Any pair of prices that add up to 1.1 with Pb $\leq$ 0.1 is a Nash Equilibrium.

- Case 2, Add heterogeneity to A consumers
  - Value of A is uniform on [0, 1] and value of B is 0.1

  Result: a unique Nash Equilibrium
  - A charges 1/2, B charges 0.1

  Note that B gets **all** the value it creates
  - This is true for all values for B up to 1/2

Basic Setting: 1WEC



In this model

- Monopolist would capture all of the rents through the "essential" product.
- Monopolist has incentive to charge low price for B good, driving out rival B's. (But in this model, consumers don't mind).

Gaps between model and reality

- Can get phone service w/o Internet from ILEC.
- Differentiated duopoly not monopoly
- If products are differentiated, it is possible for a higher quality competitor good to be driven out by a lower quality good sold by the A incumbent.
- Modeled a double play, not a triple play.

What data would we need to look at these issues?

- Ideally, P&Q for all bundles.
  - Maybe AR for customers who take 1,2,3 products.

Some questions:

- Given the prices charged for bundles and non-bundles, how much would consumers have to value competing VOIP service to buy it?
- What customer types effectively face a monopoly?
  - Want phone but not internet, want internet but not phone, etc.

Suggestive statistics-cable share of broadband access

Lines in US

46% residential

2% business

Revenues in Canada

55% residential

20% business