

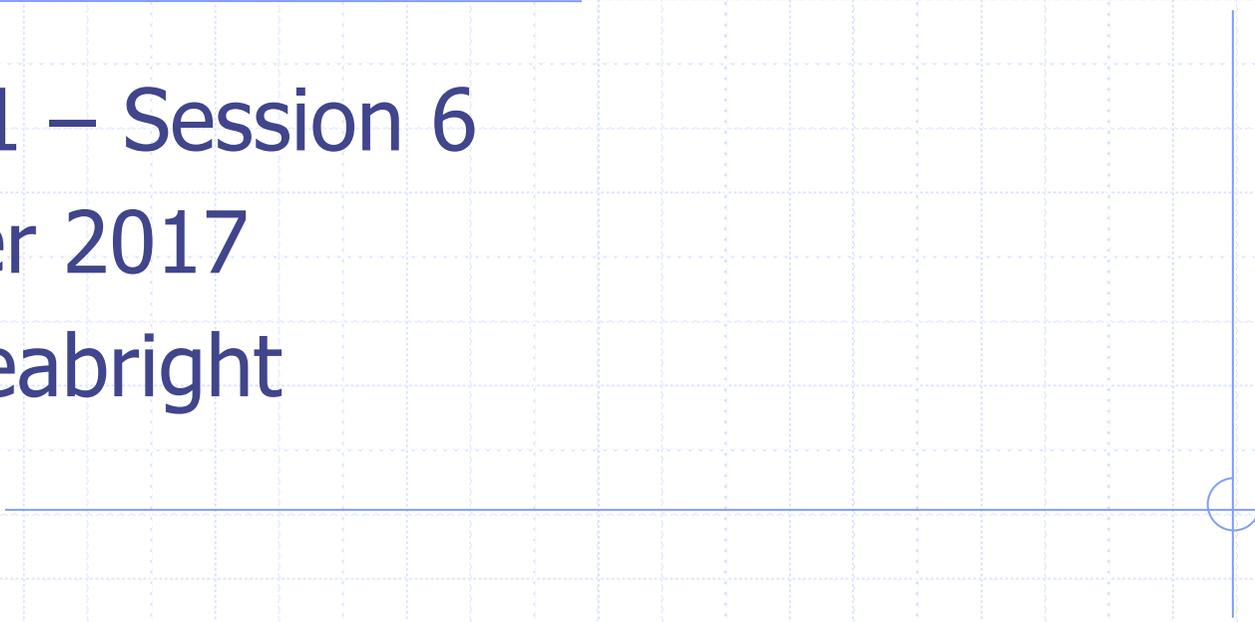


# Understanding Real World Organizations

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# A general problem

- ◆ We will study religious organizations, and we will study gangs and mafias, and insurgent groups such as ISIS
- ◆ Other organizations with similar features include charities, NGOs
- ◆ A common feature is that part of what each such organization offers is ACCESS to other members, as well as selection of the kinds of members who may join (including by imposing demanding terms of membership)
- ◆ Sometimes this has the characteristic of a club good – the members want to meet others just like them
- ◆ Sometimes it has the features of a platform good – for example, funders want to have access to users of funds, and vice versa
- ◆ So here we will consider the more general analysis of platform goods – when one group of users demands access to one or more other types of users
- ◆ The simple version of this problem is studied under the terminology of “two-sided markets”

# Outline

- ◆ Examples of two-sided markets
- ◆ What makes markets two-sided?
- ◆ A monopoly platform
- ◆ Competition between platforms
- ◆ Single and multi-homing
- ◆ The costs and benefits of competition
- ◆ Policy implications
- ◆ How does this analysis help us to ask the right questions about our various organizations, such as churches, gangs, insurgent groups, charities, NGOs?

# A classic example of a 2SM: a (heterosexual) matrimonial agency

- Needs female members so as to be attractive to males  
... but also needs males to be attractive to females
- This is an example of a *network externality*  
the value of the service depends on number of other users
- Some markets have network externalities that are not two-sided
  - ❖ Example: fax machines
  - ❖ The bigger the “club” of users, the greater the value for each user
- Here: focus on network externalities linking different ‘sides’  
→ need to “get both sides on board”
- Sometimes this means charging very different rates
  - ❖ Different ease of attracting the two sides
  - ❖ Different importance of one side for the other side
- E.g., nightclubs offer free entry and free drinks to single women
  - ❖ This is not because the drinks cost less for men
  - ❖ But because women’s presence increases men’s willingness to pay

# Two-sided markets and their clients

- Computer operating systems
  - ❖ Need to attract users
  - ❖ Need to attract applications developers
- Credit card issuers
  - ❖ Merchants
  - ❖ Consumers
- Real estate agencies
  - ❖ People with property to sell
  - ❖ Buyers of property
- Futures and securities exchanges
  - ❖ Portfolio managers
  - ❖ Security issuers
- Auction houses
  - ❖ Sellers
  - ❖ Buyers
- Newspapers and TV stations
  - ❖ Readers
  - ❖ Advertisers, editorial writers, content providers

# What does this imply for pricing?

- Pricing is not necessarily the same on both sides
  - one side may even have free services (or be paid to join)
- Pricing may have to be very low for both sides in initial phase
  - attracting launch customers makes the platform valuable in the future
- A platform that has already attracted a lot of customers may have a big advantage over a rival that has not so many
  - ❖ Depends on how easy it is for customers to use more than one platform
    - not easy for computer operating systems, newspapers, physical auction houses
      - (but easier than it used to be)
    - easier for TV stations, credit cards, real estate agencies, online auction houses
  - ❖ May trigger tougher competition to acquire customer base

# What exactly makes a market two-sided?

## ◆ An intuitive account

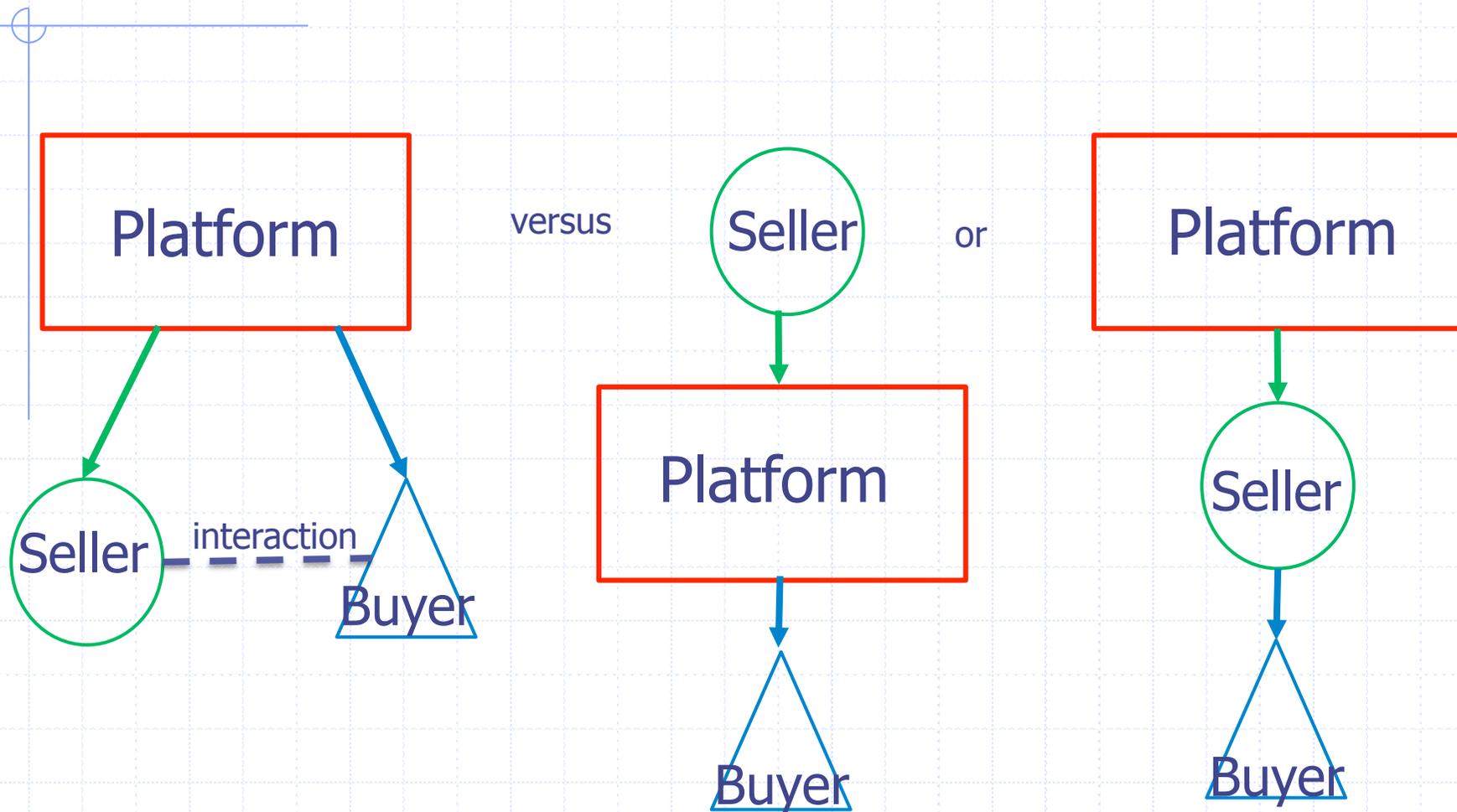
- The intermediary (a *platform*) facilitates interactions between parties on the two sides, which yield benefits and costs to those parties
- Interactions with the platform therefore create *externalities* for other parties, BUT
- The parties' interaction does not allow them to negotiate to internalize fully these externalities (the Coase theorem doesn't hold)

# What exactly makes a market two-sided?

## ◆ A more precise account

- Let  $p_a$  and  $p_b$  be the prices charged to user types  $a$  and  $b$
- Let  $P = p_a + p_b$  be the total price charged by the platform
- Then a market is two-sided if the value generated by the platform (e.g., volume of transactions between parties multiplied by benefits per transaction) depends not only on overall *price level*  $P$  but also on the *price structure*, i.e., on the division of  $P$  into  $p_a$  and  $p_b$

# Compare 2SM and a vertical relationship



# Interactions that are NOT two-sided:

## (1) A purely vertical relation

### ◆ Examples

- Component supplier – manufacturer – customer
- IP owner – licensee – downstream user
- Workers – employers – customers

◆ No externalities from price structure – consumer cares only about quality and price of final product

◆ No direct negotiation between two sides – platform negotiates only with seller

◆ In 2SM, platform may be willing to constrain seller – since it can recoup benefits on buyer's side

# Interactions that are NOT two-sided: (2) if direct negotiations more effective

## ◆ Examples

- Standard markets
- Caveat: old marketplace, department stores, ...

◆ The two sides can negotiate bilaterally to internalize any externalities from any dealings with the other

◆ If any side also interacts with the platform, they can “undo” this by compensating each other accordingly

# Interactions that are NOT two-sided: (3) assembly operations

## ◆ Examples

- Cars: frame, engine, tires, ...
- Most final goods...

## ◆ Platform is better placed to do the mix and match

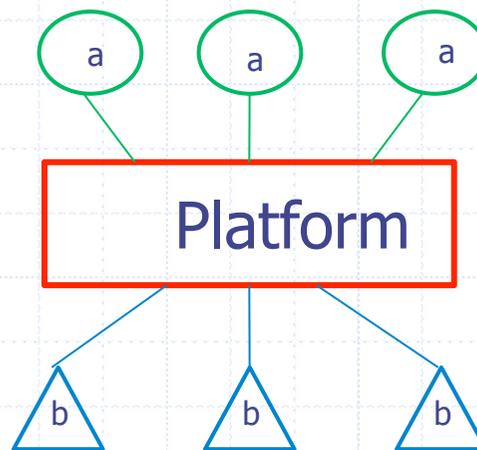
## ◆ A matter of balance

- OS software (full choice of applications)
- Aircraft (choice of engine)
- Cars

# So what does a platform do in a 2SM

- ◆ By setting prices it affects existence and degree of interactions between two sides
  - fixed (subscription fees) and/or per transaction (usage)
- ◆ It can also act as a regulator of competition
  - Apple* regulates conditions of applications development
- ◆ It can be a price regulator
  - payment cards: interchange fee, no surcharge rule..
- ◆ It can be a licensing authority
  - exchanges have solvency requirements
- ◆ It can provide information and enforcement
  - Ebay*

# A Monopoly Platform



- From the point of view of each type of user, the services of the platform are *complementary* to those of other type of user
- This means that interventions by platform are often beneficial (except in special cases of foreclosure risk)

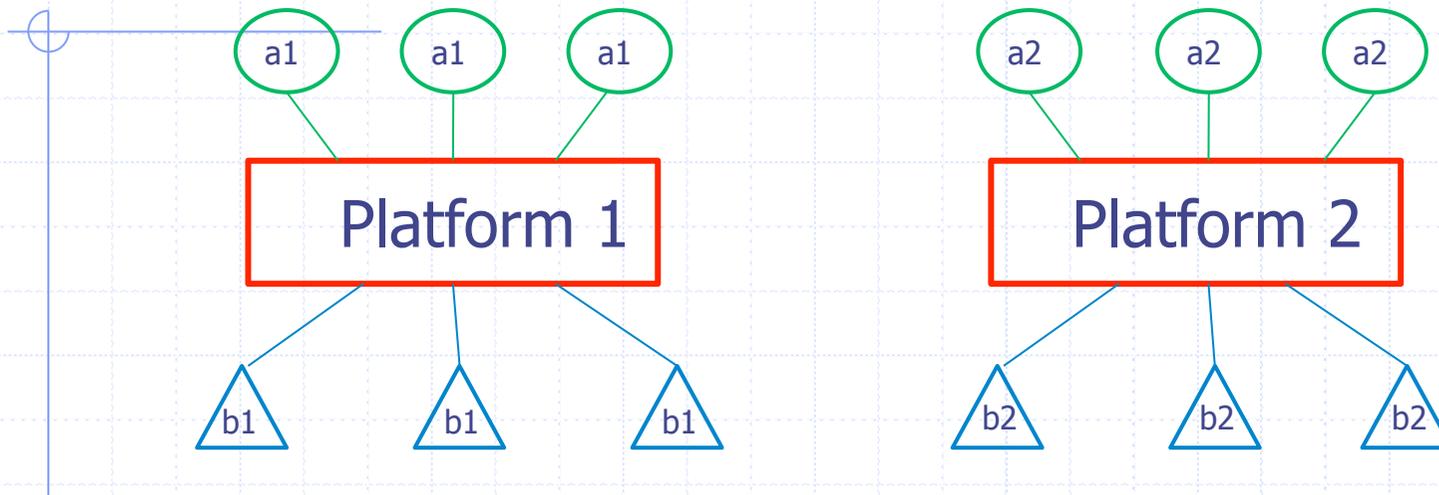
# Substitutable and complementary goods: a reminder

- ◆ Substitutable products and services
  - Competing car or clothing brands, trains and planes..
  - If the price of one rises ....demand for the others increases
  - Coordination between producers typically anti-competitive
- ◆ Complementary products and services
  - Razors and blades, games and consoles
  - If the price of one product rises,  
... the demand for the others falls
  - Coordination between producers typically pro-competitive

# Policy issues

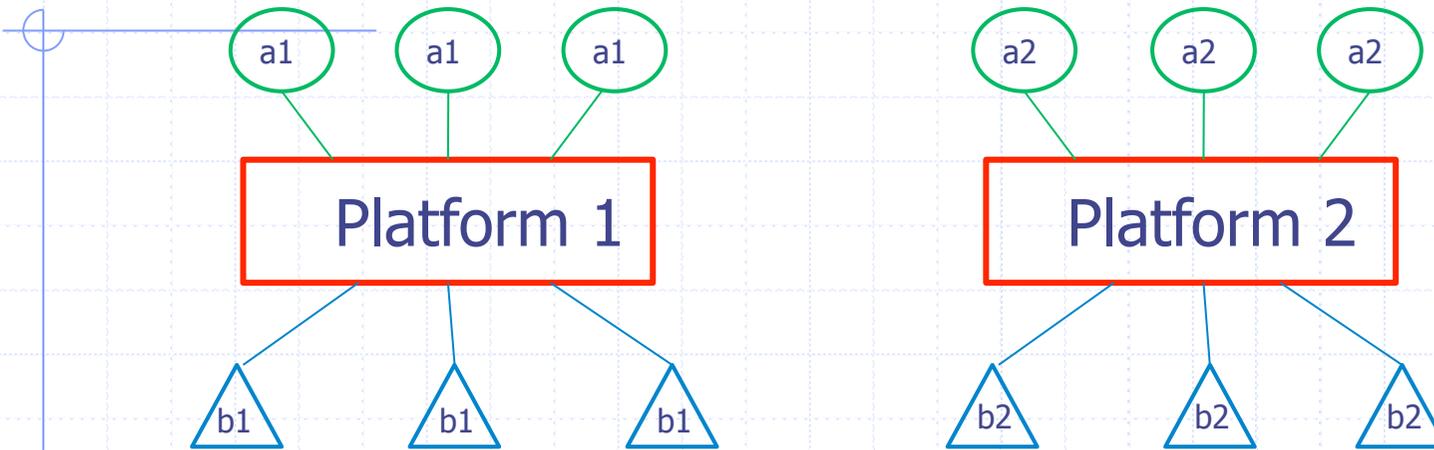
- ◆ Monopoly pricing: as in standard markets
  - Selling an additional unit
    - ... depresses the price at which it can sell the others
  - Excessively high prices, inefficiently low trade volumes
- ◆ Distorted price structure
  - The price structure should account for the surplus that one side brings to the other side
  - Social optimum: consider *all* users on the other side (average effects)
  - Monopolist: considers *marginal* users (size of demand)
- ◆ What type of intervention (regulation)?

# Competing Platforms



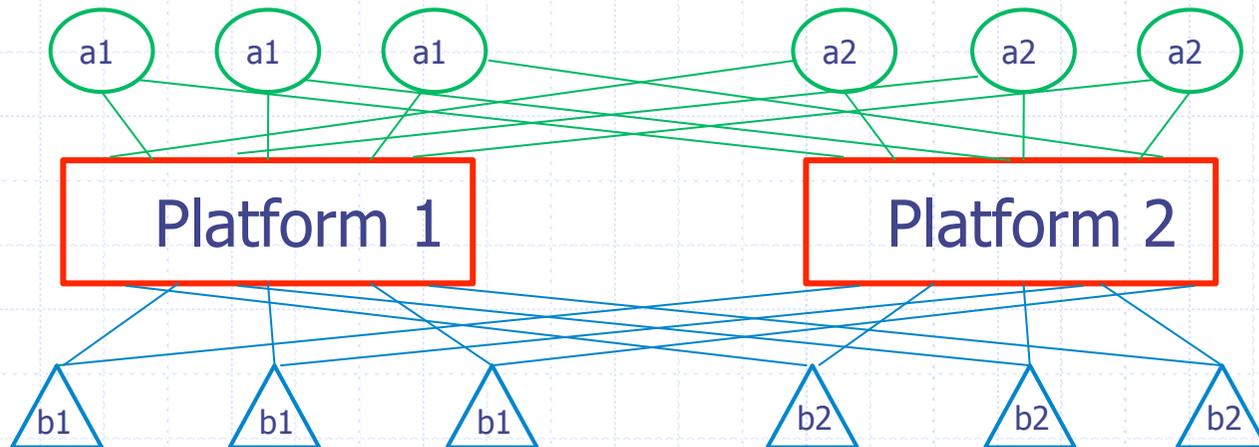
- Are the two platforms substitutes or complements?
- This depends on
  - ❖ Whether there is single- or multi-homing
  - ❖ The extent to which different users on each side are substitutes or complements for each other

# Competing Platforms: Single Homing



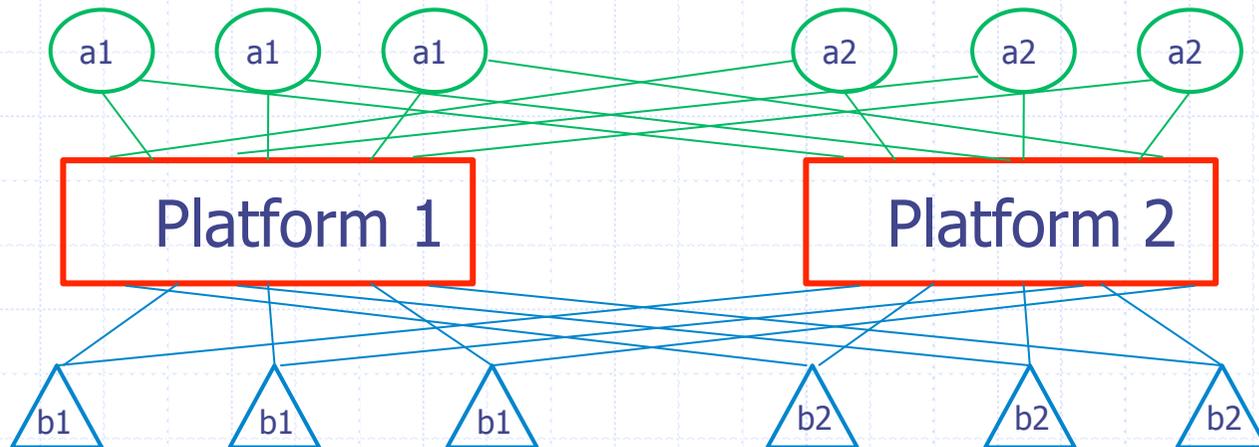
- For both *a* and *b* users, Platform 2 is an imperfect substitute for Platform 1 whatever the relations between *a1* and *a2* types
- But each platform offers a limited access to the other side
- Competition or tipping may prevail, depending on
  - ❖ Initial conditions
  - ❖ Importance of platform differentiation vs networks effects

# Competing Platforms: Multi Homing on Both Sides



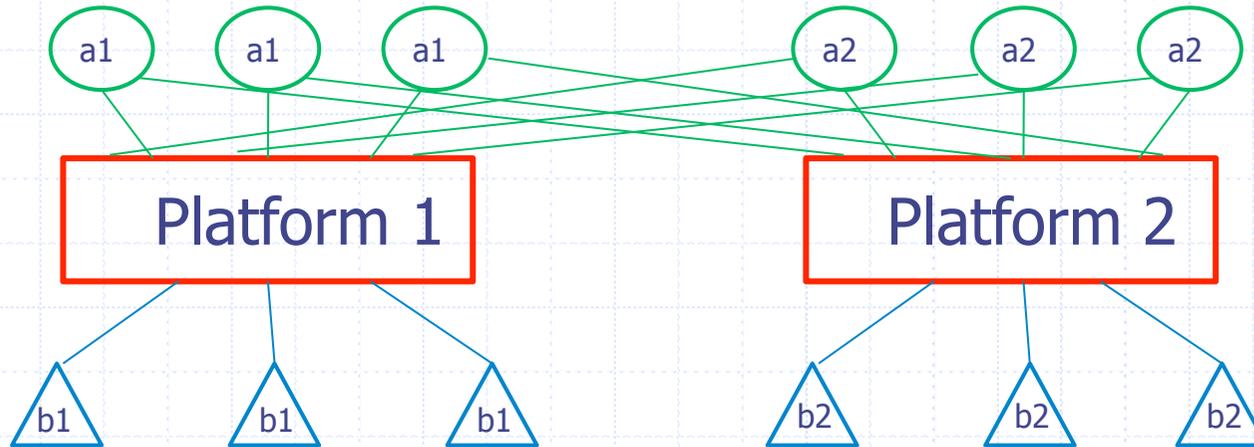
- For both *a* and *b* users, Platform 2 is now a *perfect* substitute for Platform 1 whatever the relations between *a1* and *a2* types
- Networks effects no longer affect competition
- But if the platforms are very close substitutes, multi-homing may be unstable if there are fixed costs – the market may tip!

# Competing Platforms: Multi Homing on Both Sides



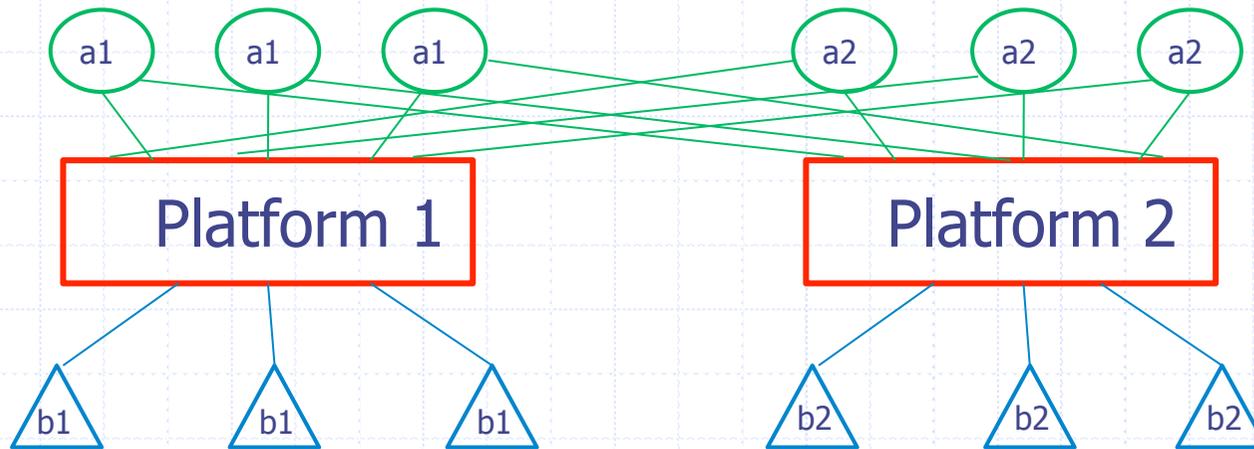
- One possible outcome: initial multi-homing on both sides ‘tips’ into one-sided multi-homing
- Another outcome – platforms differentiate via multi-homing by only some users – e.g. by exclusivity arrangements
- So exclusivity can preserve platform competition!

# Competing Platforms: Multi Homing on One Side



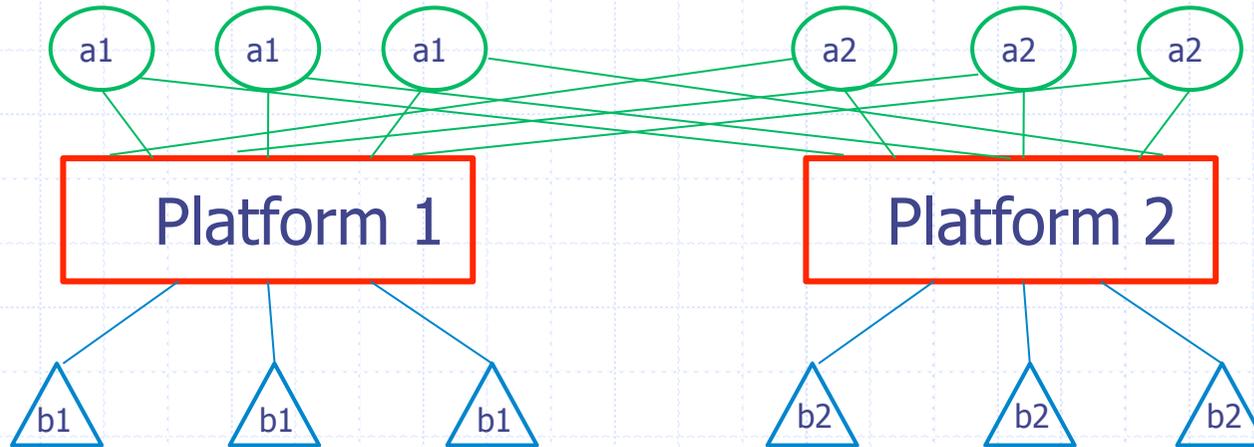
- For  $b$  users, Platform 2 is a substitute for Platform 1 whatever the nature of the relations between  $a1$  and  $a2$  types
- But for  $a$  users, the platforms could still be complements!
- Example: TV channels for content providers and viewers

# Competing Platforms: Multi Homing on One Side



- Note that for *a* users, there is a competitive bottleneck: each platform has monopoly of access to each *b* user
- This can be true even if *b* users single-home only because ... platforms are very close substitutes

# Competing Platforms: Multi Homing on One Side



- Thus we expect that platforms
  - ❖ will extract a lot of rent from *a* users  
(they're offering scarce access to *b* users)
  - ❖ but compete it away in an attempt to attract *b* users  
... unless *b* users are locked in for technological reasons

# Many types of outcomes

- ◆ Platforms can be substitutes (Windows – Linux)
- ◆ They can be complements (Windows – WMP)
- ◆ They can be initial complements that may turn into substitutes (Windows – Navigator?)
- ◆ Factors conducive to single homing
  - Access costs: Cable TV, user learning costs (software)
  - Absence of value-added by platform

# Competition issues

## ◆ Number of platforms

- with single homing, multiplicity degrades quality of service  
not possible to interact with everyone on the other side
- competition however acts as a discipline  
prevents excessive pricing
- but competition is not granted (risk of tipping)

## ◆ Multi-homing

- Increases quality for the other side ("full connectivity")
- Increases platform substitution (limits network effects ) for the other side
- but may also foster tipping

## ◆ Exclusivity

- As in other markets, tradeoff between competition "for" vs "in" the market
- But here some exclusivity can also help maintain competition (limits tipping)

# Let's go back to religious organizations, charities, gangs, insurgent groups..

- ◆ Who are the “users” of the platform in this case?
- ◆ What aspects of the other user groups does each one care about?
  - Numbers
  - Quality
  - Activity
- ◆ What kinds of recruitment and retention strategy do they use
- ◆ Do users single- or multi-home? Why?
- ◆ What are the main sources of their rents?
- ◆ Do multiple business models coexist?