Markets and Organizations

TSE M1 – Session 7

November 2012

Paul Seabright

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
- Some antitrust cases in 2SM

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

3

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

4

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

5

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)

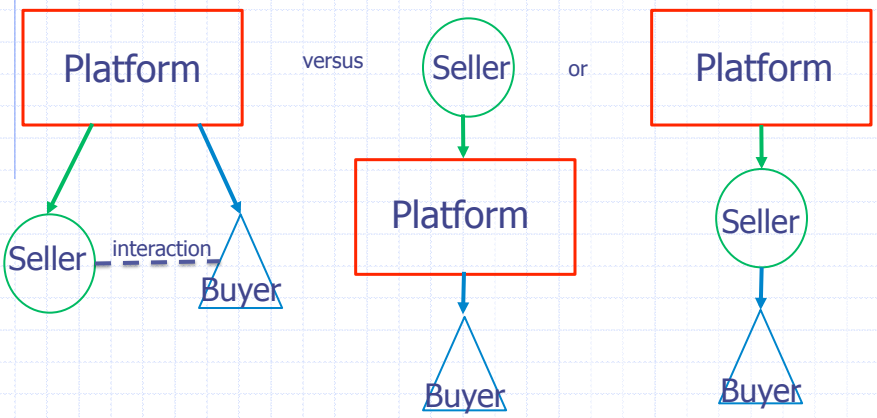
6

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

7

Compare 2SM and a vertical relationship



8

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

9

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

10

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

11

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

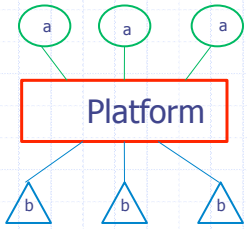
  payment cards: interchange fee, no surcharge rule..
- It can be a licensing authority

  exchanges have solvency requirements
- It can provide information and enforcement

  Ebay

12

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)

13

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

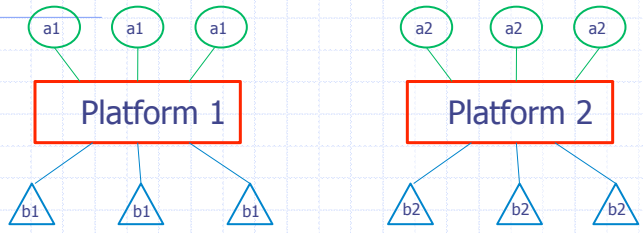
14

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)?

15

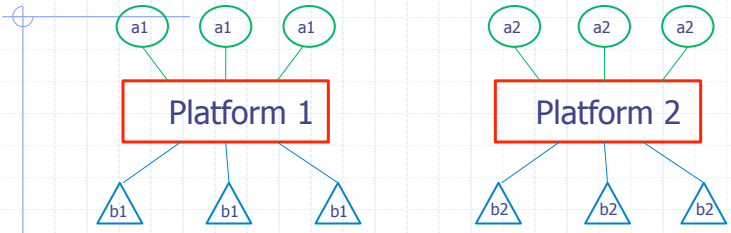
Competing Platforms



- 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

16

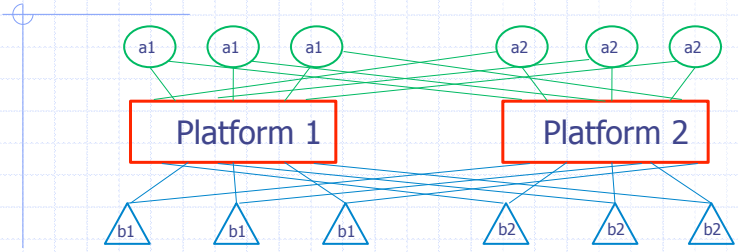
Competing Platforms: Single Homing



- 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

17

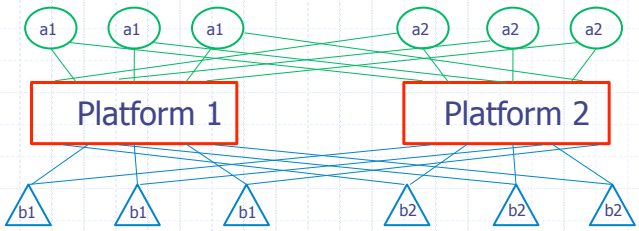
Competing Platforms: Multi Homing on Both Sides



- 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!

18

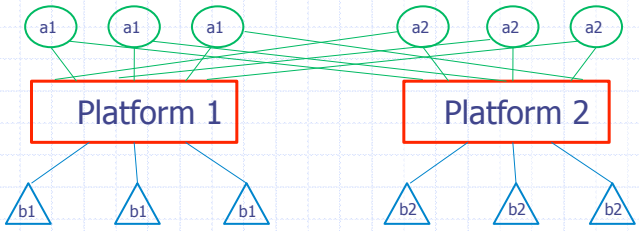
Competing Platforms: Multi Homing on Both Sides



- 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!

19

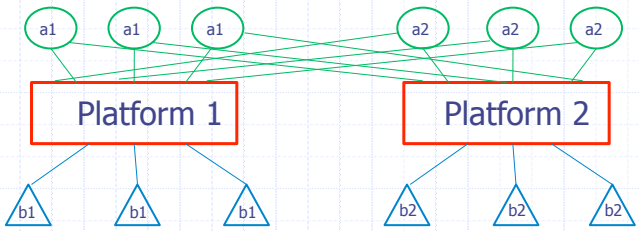
Competing Platforms: Multi Homing on One Side



- 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

20

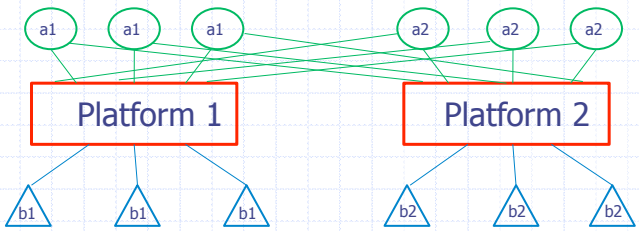
Competing Platforms: Multi Homing on One Side



- 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

21

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

22

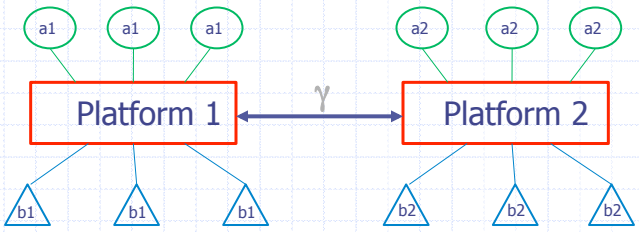
Many types of outcomes

- 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

23

Interconnection /interoperability

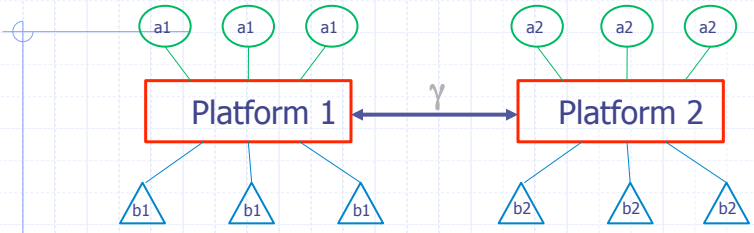
- Suppose there is an interconnection of strength γ ($0 \leq \gamma \leq 1$)



- As γ increases, Platform 2 provides
  - an means of access to *b2*
  - but also an (increasingly close) substitute means of access to *b1*
- Interoperability is similar to partial bilateral multi-homing

24

Interconnection /interoperability (II)



Increasing γ from 'no interconnection' to 'full interoperability'

- Enhances quality of service (broader acces)
- Increases competition (better substitution)
  - Less role for network and customer base effects
  - Platform operators may have too little incentives to interconnect
- But may also lead to tipping

25

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)

26

Illustrative antitrust cases using 2SM

- Travelport-Worldspan
- Google-Doubleclick
- Microsoft-Yahoo
- MasterCard

27

Travelport- Worldspan

- Market is Global Distribution Systems for travel agents and airlines (or TSPs)
- Merged entity would become second largest of three very asymmetric operators in EEA (market was national on TA side)
- Airlines typically multi-home but travel agents single-home – different GDS's are close substitutes
- Typical "competitive bottleneck" – airlines pay high charges but TAs pay little or get inducements

28

Travelport- Worldspan (II)

- Commission cleared deal in Phase II
  - Found merged entity would not have been able to extract additional rents from airlines
  - Especially since airlines' bargaining position was improving
- How significant are recent industry changes?
  - Differentiation via airlines' fare revelation strategy
  - Bypass of platform via direct booking
- Is differentiation good or bad for users overall?

29

Google-Doubleclick

- Google is a publisher of search ads, and offers a platform (AdSense) for buyers and sellers of both search and contextual advertising
- Doubleclick supplies ad serving technology (mainly for display ads), an input into activity of platform
- Part of the merger was vertical – would Google have an incentive to foreclose rival platforms from using Doubleclick technology, and would the presence of indirect network externalities strengthen this effect?

30

Google-Doubleclick (II)

- Multi-homing on publisher side, and relatively low entry barriers, made Commission think this unlikely
- Alternative risk: leveraging Google's search dominance into ad serving – why?
- 2SM aspect was therefore mainly about role of indirect network externalities in affecting familiar foreclosure incentives – do platforms have stronger or weaker foreclosure incentives than vertically related firms?

31

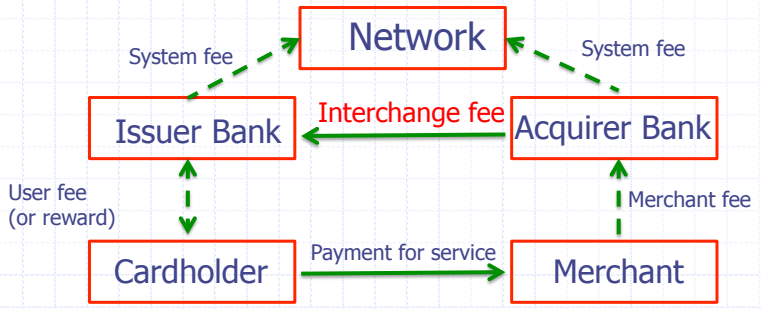
Microsoft-Yahoo

- Microsoft and Yahoo both active as platforms in search and online search advertising
- Microsoft data suggest many users single home but that many advertisers multi-home
- Parties have very small market shares and Commission thought they would compete more effectively against Google together than separately
- Interesting question: what is the role of indirect networks effects – are they strong, are they beneficial, and could they be harmful otherwise?

32

MasterCard

- MasterCard runs a "four-party" system, which differs from a classic 2SM:



33

MasterCard (II)

Key features:

- Issuer and acquirer banks are intermediaries between the platform and the final users
- The platform is collectively managed by its member banks – the interchange fee is decided collectively by those banks (and therefore falls under Art 101)
- The interchange fee is in principle a constraint on the price *structure* not the overall price level
- The idea of the fee is to give issuers incentives to sign up cardmembers who create positive externalities for merchants

34

MasterCard (III)

- Notice that if there were only one acquirer-issuer bank, there would not need to be an interchange fee – the single bank would internalize the externalities of its efforts to sign up members
- Similarly, if there were only 1 acquirer and 1 issuer, bargaining between them over a bilateral IF would likely internalize the externality
- So: why can't bargaining do the same when there are many acquirers and many issuers?
- What are the benefits and costs (to the parties, and to society) of a collectively decided Multilateral IF?

35

MasterCard (IV)

- MasterCard argued that collective MIF setting would lead to an efficient level
- Commission rejected the arguments, and issued an infringement decision in 2007
- But it did not find against MIFs in principle – it said MasterCard had not demonstrated efficiency benefits from its particular MIF
- Question: do the same presumptions of harm apply to collective decisions about price structure as about price level? Should they?
- What is the relevance of evidence on pass-through?

36

Markets and Organizations

TSE M1 – Session 7
November 2012
Paul Seabright