Identifying Two-Sided Markets

Lapo Filistrucchi
TILEC and CentER, Tilburg University &
University of Florence

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Based on

How Many Markets are Two-Sided? - CPI Antitrust Chronicle, 2010

Indentifying Two-Sided Markets (joint with D. Geradin and E.van Damme) , mimeo

Market Definition: Theory and Practice (joint with P.Affeldt and E.van Damme), mimeo

Key questions I plan to address

What is a two-sided market?

How to identify two-sided markets?

How many markets need to be defined?

Which sectors are two-sided?

A Two-Sided Market - I

A market where firms act as platforms and sell two different products to two different groups of buyers

taking into account that demand from one group of buyers depends on demand from the other group of buyers (so that these are not externalities for the firm)

while buyers of the two groups do not take this indirect network effects into account (so that these are in fact externalities for buyers)

(see Evans, 2005)

So that a two-sided platform

- is a particular two-product firm

- is different from a firm selling complement products

A Two-Sided Market - II

An additional condition is that customers on one side should not be able to pass through completely to customers on the other side an increase in the price they are asked by the platform.

In a two-sided market one can distinguish

a) the price level (roughly the sum of the two prices)

b) the price structure (roughly the ratio of the two prices)

The non-neutrality of the price structure (for firms profits and for welfare) is a sufficient condition for the existence of a two-sided market

(see Rochet and Tirole(2006))

Two-Sided Markets – A Bit of History

Two-sidedness long known for TV – Corden(1953), Reddaway(1963) and Rosse (1967)

Same feature in other markets recognized as of 2000…

Caillaud and Jullien (2001, 2003) – indirect network effects

Parker and van Alstyne (2005) – two-sided network effects

Rochet and Tirole (2002, 2003, 2006) and Armstrong (2006) – two-sided markets

Evans (2003) – markets with two-sided platforms

A Two-sided market: clarifications- I

Not all firms are two-sided platforms just because firms buy inputs on one market and sell output on another

The reason is:

-they do not offer a service to input producers

Intermediaries do offer a service to input producers.

But not necessarily they are two-sided platforms since:

-consumers do not care in general about the number of input producers that sell through the intermediary

-input producers do not care how many consumers buy from the intermediary once they are paid by the intermediary

Clearly it depends on the type of contract between the producer and the intermediary

So that:

a platform is two-sided not (only) by nature but (also) by contract

A two-sided market: clarifications - II

To some extent a firm can choose its organizational mode:

-“merchant vs platform” mode (Hagiu, 2007)

A supermarket however is a two-sided platform to the extent that:

- its clients care about the variety of products on display

and/or

-it is able to make the producers pay (though a discount?) to have their product on the right shelf (then it offers a service to them…); then the wine producer will care about how many clients the supermarket has when he/she agrees to the discount …

So that:

- two-sidedness is often an empirical issue

Finally, as two-sidedness is affected by the degree of pass through,

- two-sidedness might be a matter of degree

Two Types of Two-Sided Market

1) Two-Sided Transaction Market:

There is a transaction between end-users and it is observable to the platform

e.g. payment cards, auction houses

2) Two-Sided Non-Transaction Market:

There is no transaction between end-users

e.g. newspapers, TV

Note that

A non-transaction market is an extreme case of two-sided market

At the other extreme there is a one-sided market

Assessment of the Two-Sided Nature of the Market -I

Main elelements of the definition:

1) firms sell two different products or services to two different groups of buyers

2) demand from at least one of the two groups of buyers depends on demand from the other group of buyers (indirect network effect)

3) firms take into account the link between the two demands

4) customers on one-side can not (perfectly) pass through to customers on the other side an increase in the price they pay to the firm

Then:

2) implies that two-sidedness is an empirical issue

4) implies two-sidedness is a matter of degree

Assessment of the Two-Sided Nature of the Market-II

Whether two products or services and two groups of customers easy to check

Whether there is a transaction between customers on the two-sides of the market also easy to check

That firms takes into account the indirect network effects, if present, can be assumed

So one mainly needs to check:

1) whether there is at least one indirect network effect

2) what is its sign (if one, always positive)

3) how strong it is

Assessment of the Two-Sided Nature of the Market-III

We therefore propose:

<u>The qualitative approach</u>

-The deductive approach

-The interview approach

<u>The quantitative approach</u>

-The stated preferences approach

-The revealed preferences approach

Assessment of the Two-Sided Nature of the Market-IV

The qualitative approach

quick, easy, good for first screening (phase 1?), only info on sign of network effect

-The deductive approach

ask yourself

"why does an advertiser put an ad on a newspaper?"

"would an advertiser put an ad in a newspaper if it had no readers?"

Not always possible ("do people like or dislike ads?")

-The interview approach

ask people

"are you annoyed by advertising? do you find it interesting?"

"would you and your direct competitors be better off if payment cards did not exist?" (a bit different…)

Assessment of the Two-Sided Nature of the Market-V

The quantitative approach

long, difficult, good for more in depth analysis, also size of network effect

-The stated preferences approach

run a survey or conjoint analysis

" what would you do if the payment card company raised fees by 5% (assuming the number of cardhodlers remained unchanged)?"

" what would you do if the number of cardholders dropped by 5% (assuming the fees remained the same9?"

or use conjoint analysis to answer the same questions

sometimes people do not state their true preferences or do a different thing when the situation becomes real

also not possible to control for unobservables

Assessment
of the Two-Sided Nature of the Market-VI

<u>The quantitative approach</u>

-The revealed preferences approach

use econometric analysis:

collect data, specify a demand model and estimate demand

consumer level data better than aggregate market level data

very time consuming, allows to control for unobservables if time series available

often argued that too much discretion, but rules exist

Assessment of the Two-Sided Nature of the Market-VII

<u>The role of pass-through</u>

If non-transaction market and indirect network effect, then two-sided

If transaction market also discuss possibility of pass-through: the higher the pass through, the lower two-sidedness.

Pass through depends on transaction costs, menu costs, market power etc. (e.g. what's the cost for a shop of asking a higher price to those paying by card?)

Which markets are two-sided?

From the empirical literature:

Rysman(2004) – yellow pages US
De Smet and Van Cayseele – yellow pages NL
Kaiser and Wright (2006), Kaiser and Song (2008), Sokollu(2011), Song (2011) – magazines DE
Rysman(2007) - payment cards US
Argentesi and Filistrucchi (2007) – daily newspapers IT
Dubois,Hernandez-Perez andIvaldi (2007) – academic journals Framce
Wilbur(2008) – tv US
Garrido (2009) – tv Chile
Fan(2010) – daily newspapers US
Jeziorski (2011) – radio US
Van Dalen (2011) – radio NL
Ivaldi, Sokollu and Toru(2011) – airports US
…
Competition policy and regulation cases:
Flower auction houses – NL
Yellow pages -NL

How many markets?

Market definition as the identification of the set of products/firms that compete with a given product/firm

Observing that

- **In a non-transaction market , a product can be on one side of the market but not on the other (example…)**
- **In a transaction market, a product is either on both sides of the market or on none (example…)**

Then

- **In a non-transaction market, two interrelated markets need to be defined**
- **In a transaction market, only one market needs to be defined**

Market definition in practice

In general:

- **two-sidedness not always accounted for (more and more so however)**
- **indirect network effects rarely measured (though more so recently)**
- **pass-though almost never discussed**
- **correctly, often one market when transaction market**
- **a bit of all, when non-transaction market (e.g.media)**
- **tendency to forget one side of the market when that side does not pay**

Market definition in TV cases

European Commission's approach:

- CLT/Disney/Super RTL (1995)
  - Defined market for advertising in television broadcasting
  - Defined no market for viewers (viewers do not pay in FTA TV)
  - Failed to recognize effect of advertising on viewers
- BSkyB/Kirch Pay TV (2000)
  - Defined only one market for Pay-TV
  - No distinction between advertiser and viewer side
  - Distinction between FTA and Pay-TV based on business model

Market definition in TV cases

- News Corporation/Premiere (2008)
  - Defined only market for provision of Pay-TV services to end-users
  - Defined no advertising market
  - Distinction between FTA and Pay-TV still based on business model
- News Corporation/BSkyB (2010)
  - Defined market for Pay-TV on viewer side
  - No conclusion on whether Pay-TV and FTA are in same or different relevant markets on advertiser side
  - Concluded that there likely is market for all TV advertising
  - Failure to recognize indirect network effects between viewers and advertisers

Market definition in TV cases

UK Competition Commission's approach:

- BSkyB/ITV (2007)
  - Recognition of two-sided nature of market
  - Defined a market for all TV (FTA & Pay-TV) on viewer side, which included Video on Demand services
  - Defined a market for television advertising

Bundeskartellamt's approach:

- Springer/ProSieben/Sat1 (2006)
  - Defined no viewer market as viewers of FTA services do not pay
  - Defined all-TV advertising market

Conclusions - I

Whether a market is two-sided is mainly an empirical issue

Theory gives however an indication of what is necessary for two-sidedness

Even if a market is two-sided, two-sidedness may matter only to some degree

Empirical studies already provide guidance to this regard for certain markets

Also some competition policy and regulation cases do (only those with a good empirical analysis)

Conclusions - II

In a non-transaction market, two interrelated markets are present

In a transaction market only one market needs to be defined

In any case both sides of the market should be considered when identifying the market (and assessing barriers to entry)

This approach appears to have been followed by those Competition Authorities which are more advanced in the understanding of the theory of two-sided markets (EU, NMa …)

Yet many authorities still tend to define markets based on the business model adopted by platforms and tend to forget one side of the market when that side does not pay

The challenge for identifying in which sectors two-sidedness matters is the presence of the two markets (which might belong to two different sectors)