

Market Definition in the Digital Age

*“PROS AND CONS OF MARKET DEFINITION”
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Outline

- **Characteristics that **complicate market definition in digital settings**, and **appropriate conceptual framework** for defining these markets**
- **Default of **defining markets by relying on technical characteristics is not appropriate****
- **What economic **evidence/analysis can be brought to bear** to define these markets?**
- **Pros and cons of market definition in these settings: **do we do away with it?****

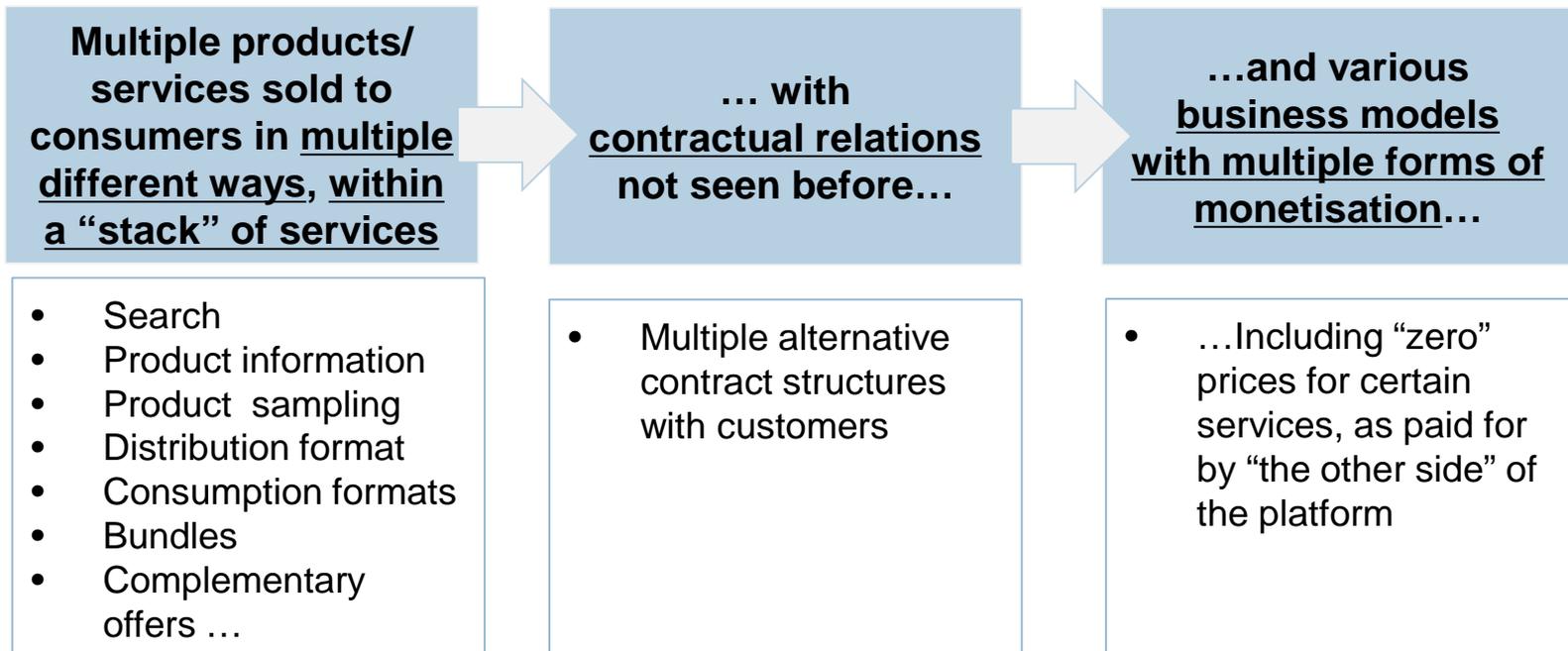
1. Challenges in defining markets and assessing competitive constraints



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Understanding channels of competition



Measuring substitution is harder, so typical fall-back on narrow separate markets based on the *function* the user performs on the platform

...search / compare / social networking / buy...

Harder to think about *substitution in these structures...*

Challenge 1: Substitution in a world with zero prices

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Challenge 2: Substitution between competing business models

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Challenge 3: Two-sidedness & competition for platform engagement

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Challenge 1: Substitution in a world with zero prices

Multi-sided business models tend to adopt **asymmetric pricing strategies**: lower price on the “more elastic” side to draw in more users that can be monetised on the other side. Combined with practical restrictions to charge *negative* prices, this means **user-side prices have a tendency to “bunch” at zero**.

Search engines, social networks, price comparison sites all have zero prices on user side

Challenges to applying a SSNIP test when there is **no variation in price**: how does one measure *substitution to relative price changes*? How to avoid the *Cellophane Fallacy*?

An equivalent test could be formulated in terms of **quality**: can a hypothetical monopolist impose a **Small but Significant Non-transitory Decline in Quality**?

SSNDQ test

Example: would a monopolist in search find it profitable to change to induce changes to the search engine results page (SERP) that increase monetisation of the page at the expense of showing information less relevant to the users query. Or will that be defeated by consumers switching?

The SSNDQ thought experiment is clear, but....

Implementation is fraught with difficulties:

- Avoiding the **Cellophane fallacy** requires a benchmark for the *competitive level of quality* – difficult when static concentration is high e.g. due to network effects
- **How “small is small but significant” in quality?** What is a 5-10% decrease?
- Quality is complicated and **not easily measured**: may be possible to come up with some metric for loss of relevance in search, but what about operating systems, social networks...?
- No **clean variation** in quality over time. Price shocks and consumers’ reactions are key in SSNIP tests, but quality shocks? Rarely discrete changes and, when they are, often confounded (e.g. OS updates at same time as hardware changes)

Challenge 2: Substitution between competing business models

Digital products do not neatly “replace” one another. Consumers’ goals may be achieved through combinations of services which differ in their *technical characteristics, vertical structure and monetisation strategy...*

Analysis cannot restrict attention ex ante only to competition “within a format” or at each “level” of this stack of services

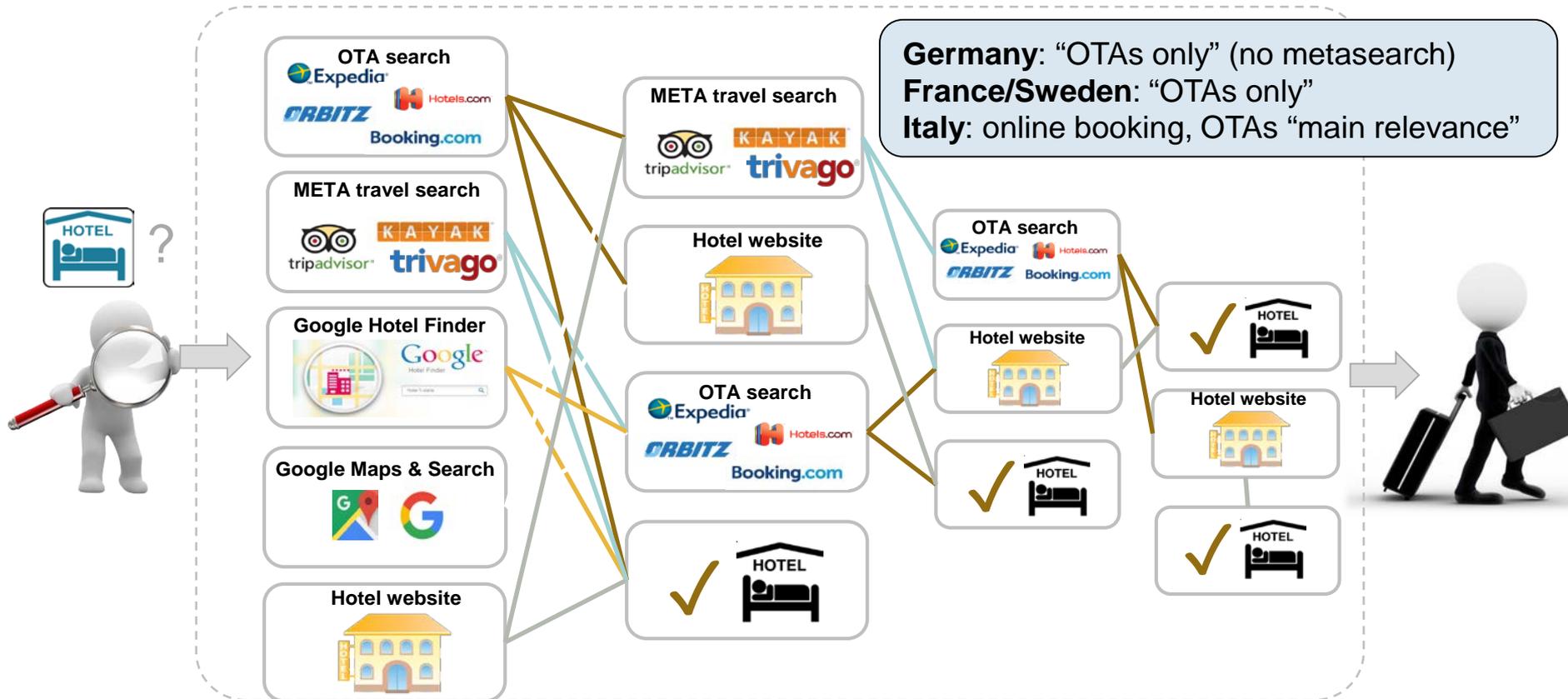
Even a monopolist on a single component of the stack is constrained by the alternatives if consumers have very different ways to achieve the same goal

(But very broad definitions are not the solution either! *)

** e.g. Google have pointed to fact that a large proportion of consumers shopping online begin their search at Amazon, not Google. This does not tell us anything about the substitution patterns of those who do use Google and hence the competitive constraints Google faces*

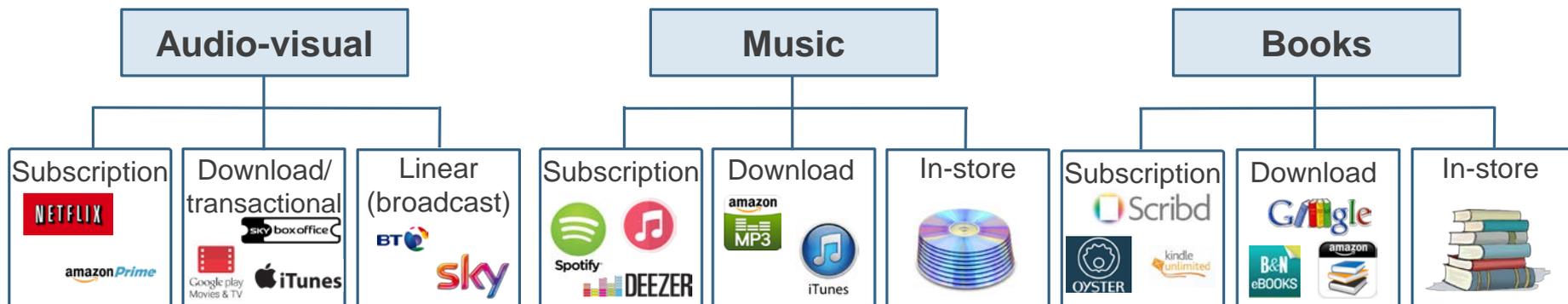
Example: separate market for OTAs?

“Online travel agents” = *searching + comparing + booking on the same site*. Is it a market?



Cannot assume integrated offer unconstrained by “dis-integrated” offers:
consumers implicitly multi-home and this changes the competitive interaction

Examples: music, books, audio-visual content...



“Different markets” for **download vs subscription** services?

Subscription is priced to compete with download, but again: hard to do “substitution analysis” around price responses

- **Price structures difficult to compare.** Highly non-linear pricing, embedded in complex structures.
- **Zero prices for some products**
- **Price variation is not often there to do the analysis properly**

How to approach this? (Ideally)

Intricate pattern of substitution – and complementarities!

Might want to **create a taxonomy of potential “routes” for consumers: “navigation” through this overall process** is the “product” that consumers are interested in

Then attempt to **trace the substitution patterns in response to a quality reduction at each level of the stack, and form a view on whether a hypothetical monopolist at this level would have enough power to justify a separate market.**

While this is not a straightforward task, **the alternative to grappling with this conceptual framework is likely to be excessively narrow markets...**

Challenge 3: Two-sidedness & competition for platform engagement

Ad-funded Platforms set low/zero prices for users with aim to **attract “eyeballs” of interest to advertisers and package them into tradable demographics**

So even if different platforms “do different things” for consumers, they all want to **generate interest and increase engagement on consumer side to get advertising**

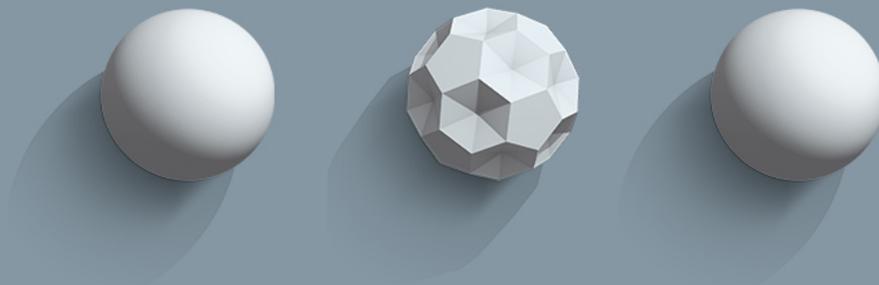


Competition for advertising. As long as consumers multi-home, even very different services (e.g. Youtube and Facebook) are in competition for advertisers

But is there also broader competition for “attention”? Advertiser-side competition may understate competitive interaction if even v different sites are competing with one-another for consumer attention/engagement. (*David Evans: “presumption that attention seekers compete with each other, at least to some degree, across even broadly defined products and service categories”*)

Don’t go overboard: but still need to understand new type of substitutability that is generated by the interaction of product and platform substitutability

2. The “wrong” default: falling back on functional definitions of markets



Functional definitions are simple to apply but misleading

Complexity in applying substitutability-based approaches means **the default becomes a “functionality-based” approach:** pointing to differences in the set of functions offered and business models as “evidence” for separate markets

Example: “horizontal” search engines, e.g. Google and Bing, “crawl” the whole internet for information – while “vertical” search engines, e.g. Tripadvisor, Kelkoo or Yelp, use different approaches to gathering the information they display to users (structured datasets on specific topics).



Example: meta search services like Trivago don't offer final purchase functionality so OTAs are deemed distinct because they are the only service which provides a single destination to search, compare and book.



**=> Functional differences are a source of differentiation
but do not in themselves show lack of substitutability**

Is app-based ride sharing a separate market?

Ordering via app
Drivers as contractors
Aggregator rather than integrated model



Is ride sharing a separate market to traditional taxis and public transport?

A functionality-based approach to ride sharing will likely lead to a narrow market definition

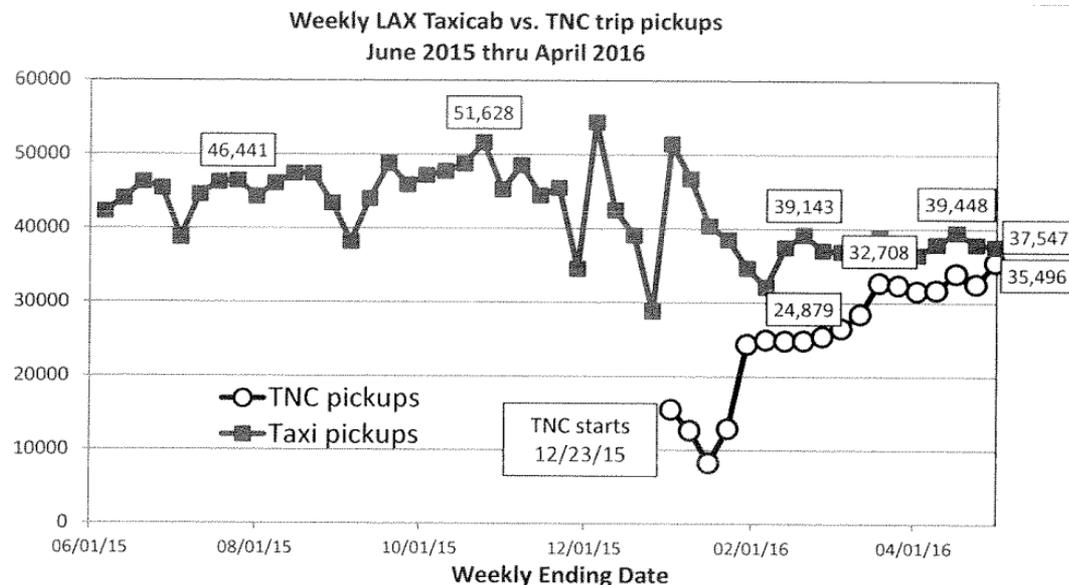
But, this is a case where our price-based “toolkit” is available and empirical evidence points to broader substitution patterns

- **Introduction of London’s all-night subway service led to far fewer Uber trips from central stations**
- Material reduction in the volume of Uber trips beginning at central locations is consistent with **consumers substituting from Uber to public transport when the latter is more easily available**
- Consistent with other evidence (e.g. surveys)



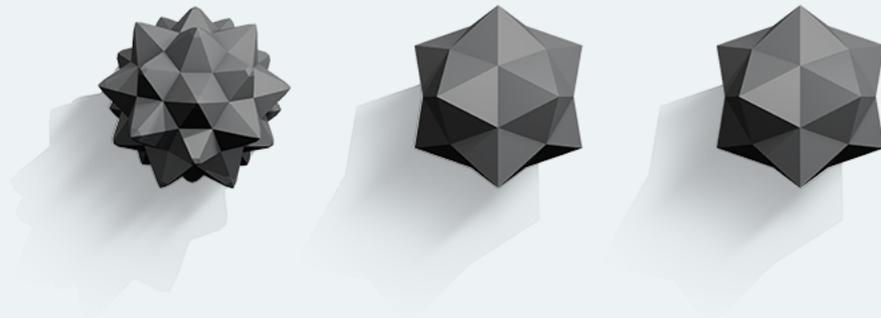
App-based ride sharing (2)

When ridesharing services were launched at Los Angeles's LAX Airport, ridesharing trip volumes **increased post entry by substantially more than any reduction in traditional taxi pick-ups**



No contemporaneous changes in volume of flight or passenger arrivals over the period. Hence **the growth in ridesharing relative to the decline in traditional taxis must reflect consumers switching from other transport modes**

3. What type of evidence can be brought to bear?



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Possible types of evidence to assess substitution...

Use of experimental changes in quality

- Hard to identify “clean” changes in quality and measure their implications, plus “reverse causality” problem
- Sometimes possible to introduce deliberate and measurable distortions e.g. in search results shown to users, and gauge impact on consumer behaviour

Indirect quantitative evidence of market power

- Do consumers tend to be “set in their ways”, using only a single “route” to find relevant information rather than habitually using a range of services?
- Do consumers display habit-forming behaviours so the ability to serve one category of query confers an ability to divert traffic in relation to other queries?

Survey evidence based on proxied quality changes

- Questions on reaction to concrete changes in functionality, or the value users place on certain characteristics

4. “Pros and Cons” : should we give it up?



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Should we persist with market definition in the digital age, or abandon it in favour of a more holistic approach?

Pros

Need for legal certainty: requiring a finding of dominance on a specifically-defined market is an important screen

Discipline to consider constraints systematically

Cons

At best a distraction and at worst a straightjacket (analogy: see contortions of welfare assessment in payment cards)

Constrains and biases formulation of theories of harm: focus on defining separate markets *because* this is perceived as a sine qua non for preferred theories of harm – e.g. *leveraging*

Rather than focussing on arcane questions of what is “in our out” better use of time and resources likely to be assessing actual extent of market power and effects

Example: Android case and the role of Apple

Theory of harm: Google uses market power granted by its app store (Google Play) to make its installation contingent on also setting Google Search as default – making it more difficult for others to enter

BUT Is Google Play dominant?

*Complication: next largest app store (Apple's) uses a different business model: not licensed to OEMs but part of Apple's "walled garden", access with iPhone
=> **INDIRECT CONSTRAINT***



Does it matter? Binary question of whether Apple is “in or out” of the market is tangential: ultimate issue is whether Google has enough power to extract concessions from OEMs that result in anticompetitive foreclosure

Evidence one would bring to bear is similar, but focussing on TOH seems in many cases more productive....

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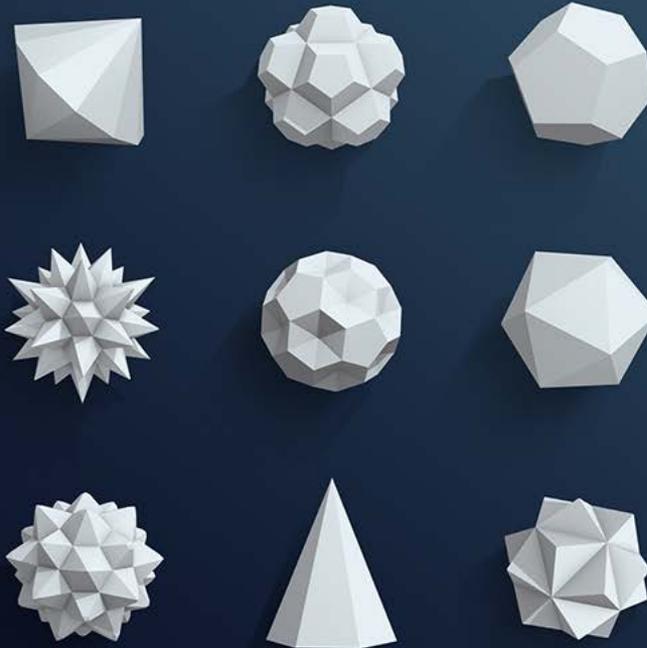
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