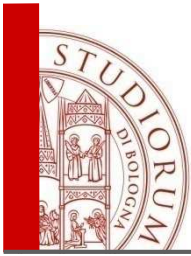# Session on "Competition in Advertising Markets"

# Measuring scale economies in search
by Preston McAfee

Discussion by Elena Argentesi

6th Lear Conference – Rome, 26 June 2015

The paper

- Objective: measure economies of scale in search
    1. Rare query trend analysis
    2. Direct and indirect view count analysis
    3. Click position analysis

- Crucial issue in search platform markets:
    – "search engines are enormous matching programs" → data is a crucial input
    – Data from past searches used to update and improve the search algorithm and therefore the quality of search results → scale matters!
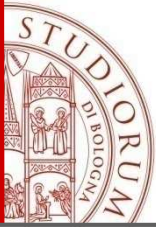
Rare query trend analysis

- Measure the *increase in CTR* for rare queries
- CTR growth larger for Google than for Bing

<u>Remarks</u>:

- Definition of "rare" query: these are not wrong queries, but rather **new** queries (dynamic effect)

- The gap between Google and Bing might be even larger for rare/new queries. Common queries more likely to be navigational; quality of search more crucial for rare/new queries.

- Not sure this effect can be analyzed with this data (limited sample for Google)
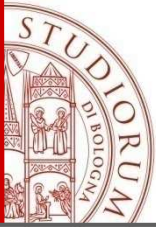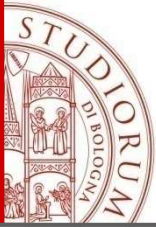
Direct and indirect view count analysis

- Effects of direct and indirect data on Bing quality ("*success CTR*")

- More data on new queries → more indirect data → more success CTR

Remark:

- The relationship between direct and indirect queries might also work in the opposite direction: data on indirect queries can improve the quality of response to new queries

Click position analysis

- Effect of direct view count on *click position*
- More data → better ranking → better (higher-position) URLs pushed to the top

Remarks:

- Endogeneity bias: position affects #clicks (Ursu, 2015; Baye et al., 2014a; Glick et al., 2014)
- Baye et al., 2014b: prominence of position and prominence of reputation are both important determinants of organic traffic
- What about indirect clicks?
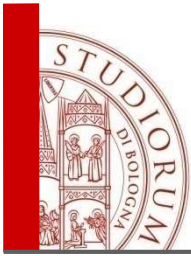
Implications

- Economies of scale, but no direct info on costs
- *Indirect network effects* are the main source of scale economies:

  more people use a search engine → more data → better quality of results

- Indirect network effects stronger for new/rare queries
- Homogeneous products → monopoly outcome
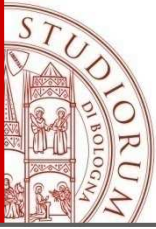
The role of online advertising

- Search engines as a two-sided market: What is the role played by **online advertising** in this picture?

- Scale matters also for advertising:

Large user base → More data ⟹ Higher ad revenues ⟹ Large user base
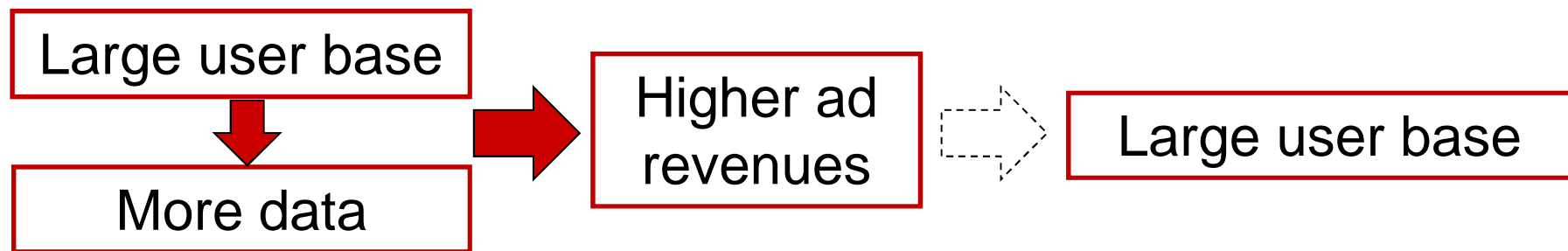
- Data are also valuable for advertising purposes (allow better matching and targeting)

- Higher ad revenues → more resources for product improvement → further increase in user base

- Similar to *circulation spiral* in media literature

The role of online advertising

- Crucial to estimate *inter-market network effects*, and in particular consumer attitude towards online ads

- In general, consumers might be less averse to targeted ads (Goldfarb and Tucker, 2011: tradeoff targeting/intrusiveness)

- Evidence on **search ads**:
  - Mostly informative, useful to attract new users (Blake et al., 2015)
  - Positive interdependence between paid and organic search (Yang and Ghose, 2010)

- Search ads might also contribute to the quality of search results → reinforcing effect (especially for new products?)

- Are ads on rare queries more valuable? Jerath et al., 2012: less popular keywords are searched by higher-involvement consumers

Open issues

- Value of data goes beyond search: info on consumers for advertising/direct marketing/profiling

- Long-run effects still under-investigated (especially for online advertising)

- Implications of multi-homing
  - by advertisers (Athey, Calvano & Gans, 2014)
  - by consumers (?)