Network Effects and Switching Costs in Online Search

Michael L. Katz*

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University of California
Berkeley
Haas School of Business

Introduction

- A network effect arises when the value of a good or service to a given user rises as the number of other users of that good or service rises.
- Network effects can give rise to positive feedback: more users attract more users.
- Although positive feedback is driven by increasing consumer benefits, it can raise concerns about viability and strength of competition.

Why do we care if there are network effects in search?

- Absent product differentiation, positive feedback can lead to one supplier’s dominating the market.
- User coordination failure can lock in a dominant network’s position
  - No one wants to be the only one on network even if it is potentially superior.
  - Switching costs can make a user especially reluctant to move to a new network unless he or she is confident that other consumers will do so as well.
- Important to note that a high market share does not imply tipping and lock in have occurred.

Things are not so scary after all.

- Market Characteristics
  - Networks effects are weak or nonexistent for many users of online search.
  - Switching and multi-homing costs are low for both searchers and advertisers.
  - There is scope for platform differentiation and innovation.
- Implications for Market Behavior
  - If a superior search engine emerges, a searcher can benefit from moving even if no other searchers do so: no danger of lock in due to a coordination failure.
  - Multi-homing and easy switching facilitate entry and make the coexistence of multiple competitors more likely, as does product differentiation.

Some Definitions

- *Direct Network Effects:* different members of a group, say group *A*, enjoy interacting with one another through a network.
- *Indirect Network Effects:* the greater the number of members of group *A* on a network, the more members of group *B* will be attracted to the network, which increases the value to members of group *A*.
- *Inter-group, or Cross-Platform Network Effects:* focus on how the presence of members of group *A* attracts members of group *B*, and vice versa.

Some More Definitions

- *Congestion:* the presence of additional members of group *A* on a network reduces the value of the network to members of group *A*.
  - Especially likely a two-sided market, where members of group *A* may compete with one another for the attention and patronage of members of group *B*.
  - Heterosexual singles bars.
- *Repulsion:* the presence of members of group *A* may repel members of group *B* even though the presence of members of group *B* attracts members of *A*.
  - The case for at least some advertiser-supported media.
- *Switching Costs:* expenditures that a buyer making repeated purchases of a particular good or service has to incur in order to change from one supplier to another.

A Look at Searchers

- Network effects appear to be weak.
  - Sponsored results often not directly relevant (*e.g.,* a health-related question).
  - There can be repulsion.
  - Unsponsored results are a substitute for sponsored results.
  - Positive feedback from click and query data subject to diminishing returns.
- Switching costs are low.
  - There is a lack of learning by searchers or other complementary assets that could create lock in.
  - I am unaware of any evidence that searchers consider the loss of search personalization to be a significant cost of switching search engines.

A Look at Searchers

- Multi-homing costs are low.
  - There are no access fees or quantity discounts, and there is no search-platform-specific hardware or software that must be purchased.
  - Not surprisingly, a single searcher often makes use of multiple search engines (*e.g.,* Google, Bing, Facebook, LinkedIn, Expedia, Orbitz, Amazon, and iTunes).
- Costs of comparing online search platforms are low.
  - It is easy and riskless to try a new search engine and to compare the results with existing search engines.

A Look at Advertisers

- There are inter-group network effects.
  - Advertisers want to be where searchers are.
- There is congestion among advertisers.
  - Product-market rivalry.
  - Limited spaces available for sponsored search results.

A Look at Advertisers

- Google's per-click pricing facilitates multi-homing.
  - An advertiser pays a per-click amount that is independent of whether the advertiser divides its campaign across multiple search platforms or patronizes solely Google.
- Google's use of standardized interfaces reduces both switching costs and multi-homing costs.
  - Some web sites advise advertisers to use Google editing tools to create their online campaigns even if they intend to run these campaigns solely on competitors' online search platforms.
  - Some dispute regarding data export.

A Look at Advertisers

- Competitors have incentives to reduce switching and multi-homing costs.
  - Offer compatible interfaces, tools that make it easy to import an advertising campaign, and per-click pricing.
- Advertisers face low costs of comparing search platforms.
  - Risks associated with trying a new advertising vehicle are reduced by the possibility of multi-homing.
- Advertisers can and do engage in multi-homing.
  - Many search advertisers—especially big ones—use multiple search platforms (as well as a variety of other media and non-search online advertising).

An Entry (or Expansion) Path

Crazy IPO.

Large advertisers
multi-home.

Searchers unilaterally
sample new platform.

Platform innovates.