

# Big Data, Algorithms, and Artificial Intelligence

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# Topics

- Can the current “competition toolbox” handle big data?
- Can the “competition toolbox” handle artificial intelligence?
- How common are AI and algorithms?  
Do they increase risk of collusion?
- Where does privacy fit in?

# The “Competition Toolbox”



- **Define the product or service market**
  - A “market” consists of products that may be easily substituted for each other
  - To define a market, authorities apply the “hypothetical monopolist” test
- **Identify market participants and entry barriers**
  - Who currently supplies the product? To whom?
  - How easily can other providers enter?
- **Analyze effect of conduct on competition**
  - Is there a restriction of other market participants?
  - What are the restriction’s effects on competition as a whole?
  - What are the business justifications?

# Using the “toolbox” on big data [1]

- When data is bought or sold, or is a key asset in a merger, competition authorities treat it like any other product
- Example: CoreLogic/DataQuick merger (US FTC 2014)
  - Databases of real property information in the US
- Is the data a product? Yes.
  - Customers are insurers, tax assessors, and others who use the data
  - Data itself is traded: customers receive direct access to this data
- Is the data a barrier to entry? Yes.
  - This data is not publicly available, and would require a team of property experts many years to generate
- Is a remedy feasible? Yes.
  - Required parties to license the database to a competitor, RealtyTrac

# Using the “toolbox” on big data [2]

- When data is not bought or sold, it does not play a key role in a competition authority’s analysis
- Example: ad-supported social media services
  - Vast amount of data on their customers (names, posts, photos, “likes”)
  - Data is used to select the most relevant ads to display to customers
- Is the data a product? No.
  - Data is not traded: advertisers do not receive direct access to the data
  - “Input,” not an “output” – data is used only internally to improve quality
- Is the data a barrier to entry? No.
  - Data is obtained easily from customers
  - Customers “multi-home” – give their data to multiple firms
- Is a remedy feasible? No.
  - Authorities would not want to force customers to give their private social media data to other firms

# Using the “toolbox” on AI and algorithms

High interest currently among academics, press ...

- Where do Artificial Intelligence and algorithms fit in competition analysis?
  - Usually they are only inputs, used to improve quality or pricing
  - Not a barrier to entry – technology is widely available
- What if everyone uses the same AI?
  - One concern would be that if everyone uses the same AI and algorithms, their products and pricing might become identical
  - “Artificially inflate prices ... machines could effectively conspire, even without their owners’ knowledge” – *Bloomberg BNA*
  - See June 2017 OECD roundtable on "Algorithms and Collusion"
  - But is widespread “machine collusion” realistic?

# But AI and algorithms are not “new”

- Machine learning, algorithms have been used for years
  - Airline pricing and creation of multi-tier fares
  - Grocery store pricing and promotions
  - Wal-Mart and other retailers
- Speech by Acting Chair of the US FTC, Maureen Ohlhausen
  - These are “familiar issues that are well within the existing canon. An algorithm is a tool, and like any other tool, it can be put to either useful purposes or nefarious ends.”
  - “[T]here are many, many reasons why this kind of informal pricing interdependency frequently fails or breaks down in the real world. For example, when the products are highly differentiated, or the market participants have different cost structures, or transactions are relatively infrequent, it is very difficult to maintain stable, interdependent pricing just by watching the behavior of your rivals. ”

# Antitrust enforcers already consider privacy – but only where firms compete upon privacy

- In addition to considering loss of non-price competition generally, the U.S. agencies specifically consider loss of privacy competition in merger reviews
- In Google/DoubleClick (2007), the FTC considered whether the “transaction could adversely affect non-price attributes of competition, such as consumer privacy.” (But FTC concluded there was no adverse effect)
- Recently, several FTC officials have stated that they are paying particular attention to privacy competition in merger reviews
- FTC Chairwoman Ramirez: the Google/DoubleClick merger is a “harbinger” of how it will evaluate mergers involving big data. (MLEX, Mar. 26, 2015)
- Debbie Feinstein, Director of the FTC Bureau of Competition: “Privacy could be a form of nonprice competition important to customers that could be actionable if two ... companies competed on privacy commitments” and merged (Law360, Feb. 26, 2015)
- FTC Commissioner Julie Brill: “I look forward to a world where competition on privacy becomes so robust that this dimension of competition becomes baked into antitrust analysis.” (Speech, June 2, 2014)

# Otherwise, privacy is not in the “Toolbox”

- Difficult to quantify compared to price, sales units, etc.
- Consumers have mixed views about the optimum level
- Authorities’ views
  - “I don’t think we need to look to competition enforcement to fix privacy problems.”
    - Margrethe Vestager, European Commission
  - “[I]t is important ... if we identify issues, they are truly competition issues, rather than what might amount to just a privacy question.”
    - Edith Ramirez, US FTC
  - “The FTC continues to examine competition and consumer protection issues separately”
    - Deborah Feinstein, US FTC