THE FEDERAL TRADE COMMISSION'S HEARINGS ON COMPETITION AND CONSUMER PROTECTION IN THE 21ST CENTURY, PRIVACY, BIG DATA, AND COMPETITION, COMMENT OF THE GLOBAL ANTITRUST INSTITUTE, ANTONIN SCALIA LAW SCHOOL, GEORGE MASON UNIVERSITY

Tad Lipsky
Antonin Scalia Law School,
George Mason University

Joshua D. Wright
Antonin Scalia Law School,
George Mason University

Douglas H. Ginsburg
U.S. Court of Appeals for the D.C. Circuit;
Antonin Scalia Law School, George Mason University

John M. Yun
Antonin Scalia Law School,
George Mason University

The Federal Trade Commission Hearings on Competition and Consumer Protection
in the 21st Century, Privacy, Big Data, and Competition,
Comment of the Global Antitrust Institute,
Antonin Scalia Law School, George Mason University

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This comment is submitted in response to the United States Federal Trade

Commission ("FTC") hearing on Concentration and Competitiveness in the U.S.

Economy as part of the Hearings on Competition and Consumer Protection in the 21st

Century. We submit this comment based upon our extensive experience and expertise

in antitrust law and economics.[1] As an organization committed to promoting sound

economic analysis as the foundation of antitrust enforcement and competition policy,

the Global Antitrust Institute commends the FTC for holding these hearings and for

inviting discussion concerning a range of important topics.

Businesses today have greater access to data than ever before. Firms now have

access to data at high volume, high velocity, and high variety—a phenomenon known

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as "big data."[2] The increasing prevalence of big data creates new questions for antitrust

enforcers. This Comment will discuss how big data should be considered in the context

of antitrust analyses.

Introduction

Big data is often associated with online platforms that collect and use vast

amounts of user data to improve their services and to target advertising, but the

phenomenon is not limited to the digital space. Brick-and-mortar retailers use vast

quantities of data as well. For example, Target once discovered that a teenager was

pregnant before her parents did, based solely on her purchase history.[3] Target uses

such information to personalize advertisements and coupons.

Walmart is even more active. As one of the heaviest users of big data, Walmart

analyzes over 2.5 petabytes of data every hour in its Data Café in Bentonville.[4] In

addition to helping it personalize advertisements, Walmart's data analysis helps it run

pharmacies more efficiently, speeding checkout, managing its supply chain, and

optimizing placement on store shelves.[5]

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[2] *See* Joshua D. Wright & Elyse Dorsey, *Antitrust Analysis of Big Data*, 2 COMPETITION L. & POL'Y DEBATE 35, 36 (2016).

[3] Kashmir Hill, *How Target Figured Out a Teen Girl Was Pregnant Before Her Father Did*, FORBES (Feb. 16, 2012), https://www.forbes.com/sites/kashmirhill/2012/02/16/how-target-figured-out-a-teen-girl-was-pregnant-before-her-father-did/#43eb60de6668.

[4] Bernard Marr, *Really Big Data at Walmart: Real-Time Insights from Their 40+ Petabyte Data Cloud*, FORBES (Jan. 23, 2017), https://www.forbes.com/sites/bernardmarr/2017/01/23/really-big-data-at-walmart-real-time-insights-from-their-40-petabyte-data-cloud/#44ea45156c10.

[5] Kim Souza, *Wal-Mart Works to Use Big Data to Improve Checkout Process, Manage Supply Chain*, TALK BUS. & POL. (Aug. 10, 2017), https://talkbusiness.net/2017/08/wal-mart-works-to-use-big-data-to-improve-checkout-process-manage-supply-chain/.

Background

While the volume and speed of data available to retailers today is dramatic,

businesses have been using customer data to increase efficiency and create value for a

long time. Mid-twentieth century grocery giant A&P used customer data to discern

regional preferences, and to forecast demand in order to reduce food waste.[6] An article

from Harper's Magazine in the late 1980s used the term "big data" to refer to the variety

of customer data lists used to increase the effectiveness of direct mail advertisements.[7]

The author found that direct mail services at the time had access to data from credit-

reporting agencies, magazine subscriptions, catalog purchases, customer

questionnaires, real estate records, and other sources that could sketch a picture of the

likely preferences of millions of individuals.[8]

The sense that advances in data science are leading to an "overwhelming deluge

of information" is not new either.[9] That feeling traces back at least to the "avalanche of

numbers" that occurred in the 1820s and 1830s, when national governments began

accumulating more data than ever before to classify and tabulate their subjects in an

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[6] *See* Timothy J. Muris & Jonathan E. Nuechterlein, *Antitrust in the Internet Era: The Legacy of* United States v. A&P 8 (Geo. Mason L. & Econ. Research Paper No. 18-15, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3186569.

[7] *See* Erik Larson, *What Sort of Car-Rt-Sort Am I? Junk Mail and the Search for Self*, HARPER'S MAG. (July 1989).

[8] *See id.*

[9] David Beer, *How Should We Do a History of Big Data?*, 3 BIG DATA & SOCIETY 1, 2-4 (2016) ("[T]he sense that we are being faced with a deluge of data about people is not new, in fact it has a long history.").

attempt to improve governance.[10] Sociologist David Beer points out that while

"features of the current data movement are in some ways novel," data has been scaling

up for hundreds of years.[11]

Today firms have both more data than ever and increasingly sophisticated

methods for analyzing it. Firms collect and store data from online traffic, credit card

purchases, smart phones and wearables, and numerous other data streams.[12] These

advances benefit consumers by, among other things, allowing firms to improve

products and lower costs, and enabling the growth of the free-to-consumers model

widely employed in the online space.[13] The growth in the importance of data has also

led to concerns that incumbent firms' access to data can create barriers to entry in many

industry.[14]

Is Big Data an Entry Barrier?

The prior discussion leads naturally one to a question whether big data is itself a

barrier to market entry. Before addressing this question, it is important to consider how

economists define "barriers to entry," and how this concept relates to the analysis of

competitive outcomes.

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[10] *See id.*

[11] *See id.*

[12] *See* Joshua D. Wright & Elyse Dorsey, *Antitrust Analysis of Big Data*, 2 COMPETITION L. & POL'Y DEBATE 35, 36 (2016).

[13] *See* D. Daniel Sokol & Roisin Comerford, *Antitrust and Regulating Big Data*, 23 GEO. MASON L. REV. 1129, 1133-40 (2016).

[14] *See id.* at 1147-49 (discussing these concerns and suggesting they "may be grossly overstated").

Bain (1956) defined barriers to entry as structural factors that allow incumbents to persistently price above the competitive level without incurring the threat of entry.[15] Examples include economies of scale that require large capital expenditures, product differentiation, and absolute cost advantages. Stigler (1968) considered barriers to entry as costs that an entrant must incur but incumbents do not.[16] Examples include patents and grandfathered government regulations but not economies of scale to the extent that an entrant has access to the same cost function. The appeal of Stigler's definition is its recognition that incumbents can earn supra-normal profits over the long-term only if they have some persistent advantage over potential rivals. What is missing from both Bain and Stigler, however, is an assessment of welfare. Both Fisher (1979) and von Weizsäcker (1980) filled this void with a normative definition that incorporates social welfare.[17] Fisher found "a barrier to entry exists when entry would be socially beneficial but is somehow prevented."[18] von Weizsäcker stated, "a barrier to entry is a cost of producing which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry and which implies a distortion in the

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[15] *See* JOSEPH BAIN, BARRIERS TO NEW COMPETITION 3 (1956).
[16] *See* GEORGE J. STIGLER, THE ORGANIZATION OF INDUSTRY 67 (1983) ("A barrier to entry may be defined as a cost of producing (at some or every rate of output) which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry.").
[17] Franklin M. Fisher, *Diagnosing Monopoly*, 19 Q. REV. ECON. & BUS. 7 (1979); C.C. von Weizsäcker, *A Welfare Analysis of Barriers to Entry*, 11 THE BELL J. ECON. 399 (1980).
[18] Fisher, *supra* note 12, at 23.

allocation of resources from the social point of view."[19] If economies of scale can

increase overall welfare *and* we associate entry barriers with inefficiencies, then, von

Weizsäcker asks, "in which sense can we speak of a barrier to entry?"[20] According to

Fisher, "the right issue is not whether there are barriers to entry into the production of a

particular mousetrap, but whether there are barriers to entry into innovation in

mousetraps."[21] In other words, it is not the input itself that is the barrier to entry but, if

they exist, hindrances to obtaining and utilizing the inputs, which incumbents do not

face.

The tension in defining barriers to entry is that there are really two ways in

which the term is discussed. As Carlton stated, "Trying to use 'barriers to entry' to refer

to both the factors that influence the time it takes to reach a new equilibrium and to

whether there are excess long-run profits is confusing."[22] Therefore, for the purpose of

competition policy, Carlton recommends that "rather than focusing on whether an

entry barrier exists according to some definition, analysts should explain how the

industry will behave over the next several years … [which] will force them to pay

attention to uncertainty and adjustment costs."[23]

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[19] C.C. von Weizsäcker, *supra* note 12, at 400.
[20] *Id.* at 401.
[21] Fisher, *supra* note 12, at 27.
[22] Dennis W. Carlton, *Barriers to Entry*, 1 ISSUES IN COMPETITION L. & POL'Y 601, 606 (2008).
[23] *Id.* at 615.

Consequently, we find that it is best to avoid suggesting that big data is or is not

a barrier to entry. Rather, it is one potential factor when examining "the timeliness,

likelihood, and sufficiency of entry efforts an entrant might practically employ."[24]

There are clearly impediments that an entrant must overcome in order to compete

effectively. Common examples include regulatory compliance costs, expenditures on

specialized equipment, and hiring skilled labor. Some obstacles are nominal. Some

obstacles are substantial. Attempting to classify these impediments as entry barriers or

not creates the conflation mentioned by Carlton. If this classification exercise is

undertaken, however, it is important to clarify whether the discussion regards either the

time required to reach a new equilibrium or a cost that is preventing socially desirable

entry.

It is also relevant to note that big data is not an exogenous factor that dictates the

number of firms in a market, which in turn determines the degree of competition and

the rate of return. The contrary view is a vestige of the discarded structure-conduct-

performance paradigm. Rather big data is endogenous, as are other dimensions of non-

price competition.[25] For instance, if a firm invests heavily in research and development,

which allows it to introduce a new product or substantially to improve an existing

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[24] U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 9 (2010).
[25] *See* Carlton *supra* note 16, at 604 ("Models that focus on only price competition may fail miserably to correctly predict industry concentration and consumer welfare when there are other product dimensions along which competition occurs. This is likely to be particularly true in industries requiring investment and creation of new products.").

product, we would not normally view this as anticompetitive conduct or even conduct

that ultimately leads to anticompetitive results. Rather, we would consider investment

in innovation to be procompetitive. Similarly, investments in big data can create

competitive distance between a firm and its rivals, including potential entrants, but this

distance is the result of an activity that antitrust laws should encourage, not penalize.[26]

Moreover, the observation that a firm is making large margins gives no indication

whether this reflects supra-competitive pricing if we properly consider the rate of

return required over the whole process, including its investment in big data.[27]

Even if big data represents an important component in the success of an

incumbent, entrants can differentiate their products along other dimensions important

to consumers. For instance, a grocery store entrant might focus more on carrying

locally made produce or products that cater to specific diets. An online firm might

focus more on building network effects or greater integration with complementary

products rather than the use of big data. As Tucker and Wellford state, "The fact that

some established online firms collect a large volume of data from their customers or

other sources does not mean that new entrants must have the same quantity or type of

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[27] Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSPECTIVES 93, 107 (1994) ("[M]erely observing a firm with a position of market dominance does not imply that the firm is earning super-normal profits: the firm's quasi-rents may merely reflect costs incurred earlier to obtain the position of market leadership.").

data in order to enter and compete effectively … [L]ack of asset equivalence should not be a sufficient basis to define a barrier to entry."[28]

Big Data in Perspective

As the previous section indicates, big data does not represent a barrier to entry but rather a factor of production much like any other input. It should therefore be treated as such. While big data may be an important factor of production, it is not an end in and of itself. Just as labor, innovation, capital and entrepreneurial skill differentiate firms, so too does the ability to turn "big data" into something useful.

Hal Varian (2014) discusses how, in order to make good use of the data they have collected, companies must understand causality rather than just correlation.[29] To understand causality, between, say, changes in price and in sales, firms must conduct experiments with control groups.[30] Simply having the data is not enough to understand and make use of the information. For example, he reports that Google conducts roughly 10,000 experiments a year in search and advertisements, which help Google continually to improve its system.[31] Varian also emphasizes that the need for continuous monitoring and experiments is nothing new: Henry Ford and his colleagues

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[28] Darren S. Tucker & Hill B. Wellford, *Big Mistakes Regarding Big Data*, ANTITRUST SOURCE, Dec. 2014, at 1, 7.

[29] Hal Varian, *Beyond Big Data*, 49 BUS. ECON. 27, 29 (Jan. 2014).

[30] *Id.*

[31] *Id.*

were on the factory floor every day in order to perfect the assembly line, the key factor of production in Ford's business.[32]

These examples show that information collected by firms is not a new phenomenon, nor does it give them an inherent advantage simply by obtaining the information. It is how firms use this information, and the additional steps taken, that ultimately makes "big data" a key factor of production. Policy makers should be cognizant of this when making decisions that will treat companies with large amounts of information differently.

Conclusion

Data has attributes that differentiate it from other types of inputs, such as specialized equipment and skilled labor. It is non-rivalrous, which means that data can be used again and again without it losing its value and the collection of data by one firm does not inhibit or raise the cost of collection by other firms. Further, big data can be part of a positive feedback loop where increased quality begets an increase in users which begets further increases in quality. This process is undoubtedly procompetitive and welfare enhancing. Could, on the other hand, big data be used to insulate from entry an incumbent with antitrust market power? Perhaps, but again the issue is not whether it is a barrier to entry but rather what role data plays in that particular industry. If big data alters the competitive process, then we should focus on the testable

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[32] *Id.*

implications that emerge. What we should avoid, however, are shortcuts and

regulation, or unwarranted antitrust intervention, based on the "bigness" of big data,

and inappropriate labels such as "barriers to entry."