



Blocked: Why Some Companies Restrict Data Access to Reduce Competition and How Open APIs Can Help

By Daniel Castro and Michael Steinberg | November 6, 2017

Over the past few years, some scholars, advocates, and policymakers have argued that businesses which possess large quantities of data, such as social media companies, present inherent competition concerns.¹ These concerns are misplaced for a number of reasons, one being that competitors can often obtain similar data from other sources.² But in some industries and markets, a small number of firms have exclusive access to particular datasets, and they exploit their market power to limit access to that data through both technical and administrative means without any legitimate business justification.³ This type of anti-competitive behavior limits innovation and hurts consumers, and when these problematic practices occur, policymakers should intervene.

In the real estate, financial services, and airline industries, some players use their market power to unfairly limit third parties accessing certain data, thereby hurting competition, innovation, and consumers.

Businesses, and their associated industry associations, in the real estate, financial services, and air travel industries, have taken steps to limit third-party access to their data in ways that restrict competition, reduce market transparency, and harm consumers.

In the real estate market, both individual brokerage firms as well as the Multiple Listing Services (MLSs), the regional organizations that maintain exclusive access to property listings on behalf of real estate agents, restrict Internet-based competitors, such as Zillow, Redfin, Open Listings, and HomeSnap, from accessing data about property availability and sellers. For example, MLSs will often prevent these types of companies from using

property data by creating strict data-use policies, denying access to non-brokers, or by keeping the data fragmented and unstandardized. These restrictions have no legitimate business justification, but do undercut the business models of online services that allow consumers to be less reliant on brokers for buying a home and to gain better insights into the homebuying process.

In the banking industry, some traditional financial institutions, such as banks and brokerage firms, prevent financial data aggregators, such as Yodlee and Plaid, from accessing customer account information via financial institutions' online services or application programming interfaces (APIs). Some financial institutions have an incentive to block financial data aggregators from downloading their users' data because these services are used by many fintech companies—businesses using innovative technology to improve financial services—to show consumers ways to reduce the fees they pay for financial services. But without the data, these fintech businesses have a much harder time providing online tools to allow users to more effectively manage their finances.

In the air travel industry, some airlines, such as Delta and Southwest, block certain third-party sites from posting flight availability and pricing information on their sites. Airlines have also targeted both specific online travel agencies (OTAs), such as BookIt.com and OneTravel, and meta-search engines, such as TripAdvisor and Hipmunk, which let consumers easily compare fares across multiple airlines. Again, these actions have no legitimate business justification, and without these online comparison shopping tools, many consumers might pay higher prices for airline tickets.

In all three of these industries, established firms or industry associations are using their exclusive control of a particular dataset—information about property listings, customer financial transactions, and airline tickets, respectively—to limit competition by restricting access to the data by third-parties. Unless policymakers intervene, this behavior is likely to continue to limit innovation and hurt consumers. In some cases, anti-trust authorities should intervene if a company's actions unreasonably restrain competition. In other cases, especially in regulated industries like real estate, banking, and airlines, industries policymakers should take proactive steps to introduce rules that would prevent this type of conduct.

One way to prevent this behavior is to require the data holders in each of these industries to maintain open application programming interfaces (APIs) that provide access to the relevant information. APIs are software functions that allow developers to access data stored in computer systems in a pre-specified, machine-readable format. APIs are routinely used within organizations, but open APIs allow third-party access to information as well. Providing third parties with access to this information serves consumers by

increasing market transparency and by allowing them to make more informed choices.

To promote competition, innovation, and consumer benefits in these three industries, policymakers should take the following steps:

- In real estate, anti-trust regulators at the Department of Justice (DOJ) and the Federal Trade Commission (FTC) should investigate whether MLS actions to block data from online listing companies are collusive and exclusionary, and state policymakers should require brokers to provide open access to their real estate listings;
- In the financial services, the Consumer Finance Protection Bureau (CFPB) should establish guidance for financial institutions to allow third parties to access customer data, securely and with the customer's permission, through open APIs;
- In the air travel industry, the Department of Transportation (DOT) should establish rules requiring airlines to make all ticket pricing information publicly available in a standardized format and prohibit unfair marketing practices that limit distribution of this information to certain companies.

INCREASING MARKET TRANSPARENCY WITH OPEN APIS

Market transparency—public access to information about the price, quality, and availability of goods—is a necessary ingredient for fair and efficient markets. In the ideal theoretical market with perfect competition, consumers would have access to complete information about goods and services, and competition would lower prices and boost quality. When consumers do not have access to this information, markets are less efficient and consumer welfare decreases.

Over the past two decades, the Internet has made it easier for consumers to compare prices in many industries, both online and with brick-and-mortar retailers, by lowering the search cost to find this information. In addition, consumers can go online to more easily obtain information about the quality of products and services.⁴ Companies have not always welcomed these increases in market transparency as they stood to increase competition and lower their margins; some early online sellers even attempted to block third-party price comparison sites.⁵ However, on net, e-commerce has greatly empowered consumers by reducing information asymmetries and increasing market transparency.⁶

Policymakers have made some attempts to increase market transparency in recent years, particularly in markets where consumers face complex choices. For example, in 2011, the Obama administration launched the “Task Force on Smart Disclosure,” an interagency committee under the National Science and Technology Council's Committee on Technology to

study how to make data more readily available and useful to consumers.⁷ The task force produced a study that recommended a number of steps to increase the availability of data provided by the government, such as giving veterans and Medicaid recipients access to their medical records and increasing consumer access to data on product quality, including with regard to hospitals, airlines, and colleges, as well as consumer recall information. It also called for the private sector to disclose more data about its products and give consumers access to their own data, such as through the Green Button Initiative for data on home energy consumption.⁸ As an example of how policymakers can promote market transparency in the private sector, the report cited the Credit CARD Act of 2009, which required credit card issuers to submit copies of their credit card agreements to a public database in a machine-readable format.

Consumers do not necessarily need to receive the data directly to benefit from it. Choice engines—interactive, online tools that use machine-readable data to help consumers make more informed decisions, such as the recommender systems used by Netflix or Amazon to make suggestions to consumers—can enable consumers to rely on large amounts of data to optimize their decisions.⁹ This is particularly useful in complex markets, such as higher education, where the Department of Education created the College Scorecard tool to help students determine where to go to school.¹⁰ However, the private sector cannot develop useful choice engines for consumers unless the necessary data is available.

This does not mean that policymakers should require all companies to provide open APIs to any data simply because it might help a competitor gain a leg up.¹¹ Just as there is nothing inherently anti-competitive about a company having hired a large number of workers, even though these individuals cannot work for a competitor at the same time, there is nothing inherently anti-competitive about a business maintaining exclusive control of some of its data. The details matter. For example, search engine companies should be under no obligation to share their users' search logs with their competitors because they have a legitimate business reason to keep this information private, such as to protect user privacy. Moreover, many search engines provide public access to the key information in these logs through tools such as Google Trends.

However, when there are no legitimate business justifications for restricting data sharing, especially when the result of these restrictions results in a sub-optimal level of market transparency or limitations on consumers accessing their own data, policymakers should consider intervening so as to increase competition and consumer welfare.

REAL ESTATE

Efficiently buying and selling real estate requires access to information, such as details about which properties are available and recent sales of comparable properties. In the late 1800s, real estate brokers in the United States began creating regional membership organizations to gather and share this property information and fairly compensate agents who assist in selling a property.¹² These organizations, known as Multiple Listing Services (MLSs), have spread and now number approximately 750 in the United States, sometimes with overlapping markets.¹³

Each MLS sets its own policies for property listings, such as defining what types of listings are allowed, and what information must be provided. Local real estate brokers, and their agents, are responsible for adding listings to the MLS database.¹⁴ MLSs are also responsible for enforcing these rules among brokers.¹⁵ MLSs tightly control access to their databases by charging fees for membership and restricting membership eligibility to licensed agents and brokers, and they have taken legal action in the past against third parties who have accessed or used MLS data without their authorization.¹⁶

To provide real estate brokers with the ability to display some information about listings on public websites, the National Association of Realtors (NAR), a trade association for those working in the real estate industry, created Internet Data Exchange (IDX) in the early 2000s.¹⁷ The system is based on a policy of reciprocity whereby participating brokers agree to display each other's listings. Participating brokers can either download the data about other brokers' listings and make this information available to consumers via their own website or app, or display other brokers' listings by embedding their local MLS's website listings in a webpage frame, an option that is available only if the local MLS maintains its own website. Each MLS may create its own rules for IDX, such as limiting the number of IDX queries or prohibiting third parties from aggregating data from multiple MLSs.

While IDX allows brokers to post a limited amount of information about listings online, it does not provide a comprehensive interoperable standard for electronic data exchange for the real estate industry. Such a standard is necessary so that technology vendors can create interoperable software and data can move between different systems. To that end, NAR created the Real Estate Standards Organization (RESO) in 2002.¹⁸ Originally formed as a working group within NAR, it is now an independent, non-profit organization focused on creating standards for data exchange in the real estate industry.¹⁹ NAR requires that all MLSs affiliated with the national organization use RESO technical standards for their data and APIs.²⁰ However, not all MLSs have implemented the RESO standards, and those not affiliated with NAR are not obligated to do so.²¹ Indeed, even today,

MLS data has not been fully standardized. RESO's 2016 survey of brokers found a variety of common problems, including inconsistent data fields between different MLSs, licensing issues across markets, and problems with data feeds.²²

Multiple technology companies, such as Zillow, Trulia (now owned by Zillow), Redfin, Open Listings, and HomeSnap, have tried to disrupt the real estate industry by providing consumers direct access to real estate listings, information about real estate professionals, and rebates on the commissions paid by sellers to real estate brokers. In addition to MLS listings, these sites often pull in listing data from for-sale-by-owner listing sites allowing homeowners more flexibility in how they sell their homes.²³ These sites also provide access to additional information that may interest home buyers and sellers, such as walkability scores, crime data, quality of nearby schools, ownership history of the home, and solar energy potential, as well as appraisal tools. However, these companies need accurate and timely data about real estate listings to provide these services. Since Redfin is a brokerage, it can get much of its data directly from the MLS. However, other third parties, including sites that aggregate or sell real estate listings such as ListHub, Point2 (acquired by Move), and RealBird, must negotiate with the MLSs to obtain this information.²⁴ And the MLSs may not agree to share this information with these third parties.²⁵

But even Internet brokers, such as Redfin and ZipRealty, that theoretically should have no barriers to accessing MLS data (since as brokers they are entitled to this information), still face significant challenges in scaling up. The problem is that these companies not only have to be licensed brokers in every state in which they want access to the data, they also must apply for and maintain membership in every single MLS within these states, as well as integrate with the different databases. According to Judd Schoenholtz, the CEO and founder of Open Listings (an Internet broker that refunds to homebuyers half of the commission their agent receives), the cost of adding each MLS amounts to approximately \$20,000 in upfront costs, plus another \$10,000 annually to maintain, not including the membership fees and dues owed for every agent.²⁶ And, as noted previously, there are at least 750 MLSs in the United States, so the total cost nationally would be \$15 million in startup costs and \$7.5 million in recurring costs.

In addition, multiple real estate brokerages, both large and small, have restricted certain third parties from displaying their listing data.²⁷ For example, Edina Realty, one of the largest brokers in Minnesota, North Dakota, and Wisconsin, pulled all of its listings from third-party sites in 2011.²⁸ Although Edina began providing these listings again three years later, it did so only after the third-party sites agreed to special terms, such as how agents appear next to listings.²⁹ And other brokerages, such as

Crye-Leike Realtors in Memphis, Sibcy Cline Realtors in Cincinnati, and Allen Tate Realtors in Charlotte, have pulled their listings from sites like Zillow and Trulia and not reinstated them.³⁰

Some brokerages are upfront about their dislike for third-party real-estate sites. For example, in a blog post in November 2015, the brokerage FC Tucker, which bills itself as “the undisputed real estate leader in central Indiana,” begs the public to stop using Zillow and Trulia, stating that these sites “do provide helpful tools for buyers and sellers.”³¹ They also accuse these sites of having inaccurate information, missing the irony that by not providing access to their listings, they are perpetuating the very problem they say they want to solve.

While other brokers are more circumspect about why they do not want to share data about their listings, their motivations are easy enough to surmise. Third-party sites display ads for local real estate brokers and agents to prospective home buyers, often with useful consumer reviews of their experiences. Since prospective buyers may not have an agent when they begin looking at homes, brokers fear they will lose out on potential clients, including the opportunity to act as both a buyer’s agent and seller’s agent for their listed properties.³² By cutting off third-party sites from listings, the brokerages hope to drive more search traffic to their own sites where they do not show ads for competitors. These restrictions hurt buyers and sellers, including their own clients, since there is less information available about their properties.

This fight over control of real estate data will likely grow in the coming years. NAR, along with large brokerages, have formed a company to give them greater control over real estate data. The company, called Upstream (because the company is figuratively going “upstream” from the MLS to get the original data), will provide brokers and agents a single portal to input real estate information that will then feed into various other real estate information systems.³³ This information will not only include real estate listings, but also historical valuations, owner information, prospects, and agent profiles.³⁴ The ostensible goal of Upstream is to increase the efficiency of data entry and standardize data across the real estate sector; however, if successful, control of a large share of real estate data would be in the hands of one firm controlled by NAR and the large brokerages.

Upstream is direct about how brokers should use its platform to limit which third parties can display their listings. In describing the benefits for brokers, Upstream writes: “They determine which vendors get access. They determine which records and which fields are provided. Finally, they determine how frequently the entitled recipient gets access. They determine this by the recipient (Imprev vs. Zillow vs. MLS vs. Franchisor).”³⁵ In short, Upstream is building a platform that will allow individual brokers and agents to easily block their listings from third-party

websites that increase competition among real estate brokers and agents, including competition from online discount brokers.³⁶ At the same time, at least one Upstream board member insists that the company's new data platform "is not an evil plot."³⁷

But those controlling real estate data do not have a strong history to backup such claims. Real estate agents and brokers have consistently and vociferously resisted competition, including from for-sale-by-owner sites and discount brokers, knowing that if they can limit these incursions that they can collude to price-fix their services at approximately 6 percent of sales price.³⁸ In the 1990s, the DOJ's Antitrust Division began pursuing multiple cases against NAR and the MLSs for anti-competitive actions that discriminate against innovative business models. For example, the DOJ opposed the NAR's creation of rules that inhibit competition from Internet brokers, local MLS's requirements for brokers to have a physical office within the MLS area, and states that passed laws prohibiting brokers from offering rebates to consumers.³⁹

The most significant step came when the DOJ pursued a case against the NAR for unfairly discriminating against online brokers, who were undercutting the traditional brokers' standard 6 percent commission and lowering costs for consumers. The investigation resulted in NAR entering into a 10-year agreement in which the association agreed to rescind its anti-competitive policies preventing online brokers from accessing MLS listing data, and guarantee that online brokers would not be treated differently than traditional ones.⁴⁰ Unfortunately, this agreement expired in 2018 and there are no mechanisms in place to prevent real estate agents and brokers from pursuing these anti-competitive practices again.

Moreover, the DOJ does not appear to have looked closely at the more recent policies and practices surrounding data sharing. Nor have federal or state policymakers explored how proactive data-sharing requirements in the real estate sector might enable greater benefits to consumers. Yet, as the DOJ stated in its assessment of the real estate market: "The marketplace is likely to function more efficiently—and provide greater benefits to consumers—when consumers have direct access to more information about those listings. The important role played by more listing information being made directly available to consumers underscores the benefits of the antitrust actions against collective action to reduce the availability of such information."⁴¹

Given that real estate brokers and agents withhold thousands of listings from third-party sites or make access to their listing information dependent on premium placement for their agents, regulators and policymakers should take a new look at how they can increase competition in the real estate sector so as to benefit consumers.⁴² The DOJ, the Federal Trade Commission (FTC), and state attorneys general should investigate the

activities of NAR, the MLSs, and even emerging players, such as Upstream, to ensure that these organizations do not use their control of real estate listing data to unfairly restrict competition among real estate services. This monitoring is particularly important given that the 10-year settlement expires in 2018 and NAR and its associated MLSs will no longer be bound by the current rules. Moreover, state policymakers should require brokers to provide open access to their real estate listings. Doing so would likely increase competition and efficiency, both of which would boost consumer welfare.

FINANCIAL SERVICES

Financial services companies, such as banks and brokerage firms, maintain a significant amount of data about their customers, including information on spending, investments, and taxes. Much of this information is available to their customers via a bank or brokerage firm's online services; however, many consumers prefer to use third-party tools to manage their accounts for a variety of reasons.⁴³ First, customers can manage multiple bank accounts through a single application, and thereby gaining a single solution to view their finances. In 2015, 46 percent of Americans reported using more than one bank for financial services.⁴⁴ Second, bank customers can use third-party apps to more easily move funds between savings and checking accounts, to avoid overdraft fees, or to take advantage of higher interest rates. Third, customers can use this data to compare financial services based on their own usage patterns and get more personalized financial advice. Fourth, customers can forecast their cash flow (and again avoid overdraft charges). Fifth, consumers and businesses can allow lenders to review their transaction history to assess their credit worthiness.

Unfortunately, some financial institutions have limited third parties from accessing customer data on behalf of their users. In 2015, for example, a number of major U.S. banks briefly blocked financial data aggregators from accessing customer data—during which time customers of these banks were unable to use many third-party tools.⁴⁵ This limitation was quickly removed due to consumer backlash, but it demonstrated the fragile partnership between financial institutions and third-party organizations.⁴⁶ Since then, other banks and financial institutions, including TD Bank and Barclays, have also blocked some third-party apps and services.⁴⁷

Third parties access financial institution data in one of two ways. First, some access the data directly from the websites of financial institutions, a process known as screen scraping.⁴⁸ Using this method, digital apps and services access a financial institution's online services on behalf of a user, using the same interface that the financial institution's customers would use, and automatically collect the information made available to the

customer. This method is cumbersome, as the third party must create and maintain custom code to access data from every financial institution.

Second, some third parties can access financial institution's data through APIs. This option is simpler for third-party developers to use, although its success depends on financial institutions creating open APIs that deliver full and reliable access to customer data. These APIs generally use one of two primary data standards—open financial exchange (OFX) or durable data API (DDA)—available for exchanging data from financial institutions.⁴⁹

Some financial institutions that block third parties from accessing their data argue that they are doing so for security reasons, even though none of the major financial data aggregators have suffered a data breach as of 2016. Moreover, APIs do not present any insurmountable security threats.⁵⁰ Indeed, the most prominent data aggregators, such as Yodlee, Plaid, and Finicity, which supply data to many third-party tools, have robust security programs.⁵¹ Some even undergo reviews by federal regulators, including the Federal Deposit Insurance Corporation (FDIC), the Office of the Comptroller of the Currency (OCC), and the Federal Reserve.⁵²

While earlier versions of the software used by data aggregators required consumers to share their online banking credentials, such as usernames, passwords, and answers to security questions, with the third-party service, the latest versions of these applications can use newer protocols, such as OAuth 2.0, that allow the financial institutions to maintain control of the customer login data and then pass along secure tokens to third parties to allow them access. But even in the older implementations, there is no more security risk in customers sharing online credentials with third-party tools than when these customers share this same information with personal assistants or family members. And, unlike the average personal assistant or family member, these third-party tools use advanced security measures and customer login information to prevent unauthorized use.

While blocking third-party tools does not increase security, it does reduce competition.⁵³ Many of these third-party tools not only help customers better understand their budgets and spending patterns, but they also identify opportunities for their users to reduce their fees for financial services by using alternative products—the reason some financial institutions dislike these services. Moreover, if users are spending more time on these third-party sites and apps, there are fewer opportunities for traditional financial institutions to engage their customers to promote additional services. Indeed, according to a 2017 PricewaterhouseCoopers's survey, 88 percent of financial institutions believe that they are losing revenue to emerging fintech companies.⁵⁴ When fintech companies threaten both banks' margins and, for some, even their long-term viability, it is understandable why some banks are

resisting this disruption, even though it would be incredibly valuable to consumers.

Notwithstanding this, some financial institutions have begun to share data with third parties. They do so to leverage these companies' technologies and services to benefit their customers, while retaining opportunities to study overarching consumer spending patterns and sell their own financial products such as loans and wealth management services.⁵⁵ For example, in early 2017, JPMorgan Chase announced a partnership with Intuit, the company behind Mint, QuickBooks, and TurboTax, to allow Intuit to synchronize bank customers' personal banking data with Intuit apps through an API. The API allows Intuit's developers to create apps and software that are compatible with the bank's systems, and that enables the two companies to securely and seamlessly transfer data. The partnership also has allowed the two companies to establish certain use and data sharing guidelines that protect consumers from unwanted marketers.⁵⁶ Other large banks, including Bank of America, Wells Fargo, and Capital One, have implemented similar agreements to allow third parties, such as tech companies and data aggregators, access to banks' APIs. But with nearly 12,000 banks and credit unions in the United States, there are still many financial institutions that do not effectively share access to customer data.⁵⁷

Although some financial institutions and technology companies have begun developing partnerships, regulators should still intervene. As noted, even though there is broad industry consensus that APIs will drive unprecedented innovation in financial services, many financial institutions resist creating open APIs because they fear that fintech competitors will disrupt and circumvent their relationship with their customers.⁵⁸ Regulators are best positioned to strike the right balance to ensure that open API rules protect the legitimate interests of banks, such as not imposing undue costs, creating unnecessarily complex technical requirements, or exposing financial systems to significant security threats, while also ensuring open APIs are a pathway for the type of technological innovation that will unlock more value for consumers.

Some government regulators have already begun this process. The European Union, the United Kingdom, and the Australian government are all pursuing open banking regulations that would require banks to securely share customer data with authorized third parties (see Boxes 1 and 2). These open banking regulations are designed to increase consumer choice and mobility, innovation, and competition in the financial services industry.

U.S. regulators, such as the Office of the Comptroller of the Currency (OCC) and the Consumer Financial Protection Bureau (CFPB), have recently launched efforts to study personal financial data and fintech issues.⁵⁹ CFPB established "Project Catalyst," an initiative to examine how banks

can leverage innovation and give customers better access to their financial data.⁶⁰ CFPB has argued that consumers will also benefit from data aggregators as they gain a greater understanding of and level of control over their personal banking data, lower prices for financial services, and access to more innovative products and services.⁶¹ Separately, in late 2016, OCC solicited comments on whether to issue special bank charters for fintech companies, which would change the regulatory structure and requirements for these companies.⁶² These special bank charters could help ensure that data aggregators use the same security practices as regular bank systems, and that the same regulations and consumer protections apply to both groups.⁶³

CFPB has authority, granted to it in Section 1033 of Dodd-Frank, to issue rules requiring financial institutions to provide open access to consumer data. The law requires financial institutions to make a consumer's financial information available in "an electronic form usable by consumers."⁶⁴ This requirement extends to all account information, "including information relating to any transaction, series of transactions, or to the account including costs, charges and usage data."⁶⁵ Furthermore, CFPB is authorized to create rules for "standardized formats for information, including through the use of machine readable files."⁶⁶

To ensure consumers can share information with third-parties, CFPB should use its authority under Dodd-Frank to create rules requiring banks to implement open APIs. Such action would be consistent with past statements by CFPB director Richard Cordray that when it comes to financial data, "consumers should be able to access this information and give their permission for third-party companies to access this information as well."⁶⁷ In addition, if CFBP does not take action, Congress should pass a resolution calling for banks and fintech companies to ensure consumers can access their data without restrictions by voluntarily developing open banking standards to enable financial service providers to securely exchange consumer data.⁶⁸ Such a call would push industry to pursue the necessary technological innovation that would allow banks, technology companies, and others to create and maintain digital apps and services that improve the way Americans manage their finances.

Despite the challenges of fully implementing an open banking system, policymakers should act promptly to develop a standardized open banking framework to ensure consumers have access to their financial data and can share it securely with third parties to increase innovation and competition.

Box 1: Open Banking in the European Union

The European Union has recently enacted reforms in the financial services sector as part of its efforts to promote innovation, competition, and efficiency in the European market.⁶⁹ Among other changes, the Second Payment Services Directive (PSD2), requires many types of financial services providers to make customer data available to authorized third parties when the customer has given their explicit consent.⁷⁰ The EU finalized PSD2 at the end of 2015, and EU member states are in the process of drafting the regulations necessary to implement the directive. In addition, the directive requires the European Banking Authority to develop technical standards that will not go into effect until 18 months after they are finalized. Some financial institutions have advocated for these technical standards to ban screen scraping, a practice already outlawed in Poland.⁷¹

Separately, in the United Kingdom, the Competition and Markets Authority (CMA) has initiated regulatory reforms in the financial services sector to address a lack of competition in banking services for consumer and small businesses and accelerate innovation in the sector.⁷² Specifically, CMA is requiring UK banks to develop and implement an open API standard for banking to allow authorized third-parties to access information about bank services, prices, service quality, and customer usage.⁷³ Unlike PSD2 which applies to all payment accounts, such as savings and credit card accounts, CMA's open banking standard applies only to the nine largest providers of personal and business checking accounts in the UK.⁷⁴ In addition, CMA has a more aggressive timeline for deploying the open banking standard.⁷⁵ At the request of HM Treasury, the Open Data Institute, a nonprofit organization in the United Kingdom, organized a working group of public and private-sector stakeholders to develop recommendations for the open banking API standard.⁷⁶ These recommendations led to the creation in September 2016 of an independent organization responsible for working with industry to design the technical specifications of the open banking API.⁷⁷ The stakeholders released the first versions of the open banking API in March 2017 and plan to release the second version, which would enable both read and write access to APIs, in January 2018.⁷⁸

Box 2: Open Banking in Australia

In recent years, both regulators and consumers in Australia have grown frustrated with the country's banks, as they were found to be engaging in a variety of misconduct, such as charging customers for unwanted services, manipulating interest rates, and wrongfully denying insurance coverage.⁷⁹ Not surprisingly, many consumers have a poor opinion of the banks, and are frustrated by the high price and difficulty of switching banks. A 2016 survey from Ernst and Young found that four out of five Australian consumers do not believe their banks will give them unbiased advice or put their interests first.⁸⁰ Even the Australian Banking Association's research has found that a quarter of consumers do not trust their bank, with many believing that the banks are not open and transparent with their fees and terms.⁸¹ And with limited competition among banks—as of 2016, the four major banks in the country controlled 83 percent of the mortgage market—consumers have few recourses.⁸²

In response to these concerns about a lack of competition and innovation in banking, the Australian Parliament's Standing Committee on Economics recommended in November 2016 that the Australian Securities and Investments Commission (ASIC) develop an open banking framework that allows secure data sharing between financial institutions and third parties through APIs by July 2018.⁸³ The goal of the open banking regulators is to alleviate switching costs by promoting data sharing, which would allow customers to easily control and migrate their banking data such as transaction history, account balances, and credit card usage.⁸⁴ Price transparency would also help consumers better evaluate their options when they shop for loans, credit cards, and other financial services.

The Australian Parliament has dedicated AU\$1.2 million of the 2017 – 2018 budget to help the Treasury Department develop and implement the open banking framework and regulatory structure.⁸⁵ The Treasury is working with private-sector stakeholders from the banking and technology sectors on open banking data standards, security requirements, and rules on legal liability.⁸⁶ In addition, regulators have sought to minimize regulatory hurdles by establishing regulatory sandboxes to allow startups to create and test new apps for a limited number of consumers without having to comply with security and bank licensing standards.⁸⁷

AIRLINE INDUSTRY

More than half of consumers use online travel agencies (OTAs), such as Expedia, Priceline, and TripAdvisor, to book air travel.⁸⁸ OTAs simplify the flight booking process so travelers can easily compare prices and travel options. However, most airlines would prefer consumers book flights

directly on their own sites, so that they do not see options for competing carriers and so the airlines do not have to pay any referral fees. Since airlines control access to data on their flight schedules, seat availability, fares, and fees, they can discourage customers from using third-party websites by preventing these sites from accessing some or all of this information, thereby forcing flyers to go to the airlines' websites and reducing competition.⁸⁹ If airlines really wanted consumers to come to their own websites or mobile apps to book airfares, they could provide inducements, like added miles for frequent flyer members who book using the airline's site.

Information technology has had a significant impact on the airline industry over the past two decades, as consumers today are more likely to book airfare themselves rather than use a travel agent. Microsoft created Expedia in 1996, and since then, multiple OTAs, such as Travelocity, Orbitz, and Priceline, have entered the marketplace.⁹⁰ Airlines have also created their own sites to allow consumers to directly book flights. More recently, consumers have begun using meta-search engines, such as Kayak, TripAdvisor, SkyScanner, Fly.com, and Hipmunk, that allow consumers to search the various OTAs and direct booking sites.⁹¹

OTAs and meta-search engines rely on data from airline companies. Airlines generally provide real-time flight prices and availability information through a global distribution system—a network that links travel service providers, such as airlines, hotels, and car rental agencies, with travel agents—operated by companies such as Sabre, Amadeus, and Travelport.⁹² OTAs and meta-search engines then connect directly to companies' booking systems and aggregate the information to let consumers shop and book cheap flights from multiple airlines, without travel agents.

As a group, airlines have an incentive to take steps to limit the success of OTAs since carriers will make higher profits from customers that book directly from their sites and do not see competing flight options.⁹³ They also want to avoid paying commissions to the OTAs and increase brand loyalty. Thus, it is not surprising that various airlines have blocked OTAs.⁹⁴ For example, Southwest Airlines does not let any OTA list their flights, and Delta Airlines limits which websites can access and advertise their booking information.⁹⁵ JetBlue announced in October 2017 that it would no longer allow a number of OTAs sell its flights.⁹⁶ By having customers book flights directly from airline websites, companies can upsell extra benefits such as seat upgrades and in-flight amenities. In one 2015 quarter, Delta made \$50 million from these extra benefits.⁹⁷

When airlines limit competition on these platforms, these actions directly hurts consumers as they end up paying higher prices for airfares.⁹⁸ According to a study led by a Yale economist and commissioned by the Travel Technology Association, an industry group representing OTAs, meta-

search engines, and GDSs, online comparison shopping allows consumers to save up to \$6.7 billion per year through increased consumer choice and competitive pressures. In addition, the study estimated that without these savings, as many as 41 million passengers might choose not to fly.⁹⁹

OTAs not only help consumers by making it easier for them to comparison shop air travel, but they provide a platform that allows smaller airlines to compete with bigger ones.¹⁰⁰ OTAs can leverage their size for more efficient sales and marketing than smaller companies could achieve on their own.¹⁰¹ Moreover, OTAs can help airlines compete more fairly by enabling consumers to better compare competing offers. Some air carriers, such as Spirit Airlines, typically offer low airfares but charge high fees after booking for carry-on bags and seat assignments, which their competitors include in their marketed prices.¹⁰² The total costs can be higher than the price of the competitors, even though the ticket fare is lower.

Over the past decade, the U.S. Department of Transportation (DOT) has created a number of price transparency regulations for both the airlines and the OTAs that have benefitted consumers. In 2007, DOT initiated the first of three rulemakings focused on enhancing airline passenger protections. The final rules eventually required airlines to disclose data about fees for ancillary services, on-time performance of their flights, and baggage mishandling. In addition, the rules require transparency about total ticket prices, inclusive of taxes and fees and any code-sharing arrangements. Finally, the rules prohibit undisclosed display biases, such as promoting one airline above others, by OTAs and other websites.¹⁰³ At each stage, the airline industry has resisted these types of regulations.¹⁰⁴

But still these rules do not go far enough. In April 2016, President Obama issued an executive order that prompted agencies to examine ways to promote competition in the airline ticket marketplace, and in August 2016, Sens. Blumenthal (D-CT), Warren (D-MA), and Markey (D-MA), asked DOT to directly investigate airline price transparency and the data restrictions placed on OTAs.¹⁰⁵ Given the potential harm data restrictions have on the market and the public support for price transparency, DOT issued a request in October 2016 for “information on whether airline restrictions on the distribution or display of airline flight information harm consumers and constitute an unfair and deceptive business practice and/or an unfair method of competition.”¹⁰⁶ DOT also requested information on “whether any entities are blocking access to critical resources needed for competitive entry into the air transportation industry.”¹⁰⁷ The Department of Transportation suspended the comment period for these rules in March 2017 to provide the new administration time to review the issue and potential next steps, and DOT has yet to take them up again as of November 2017.¹⁰⁸

The time for comprehensive action has come. Regulators should adopt reforms that standardize airline information for consumers and provide access to more data. DOT should adopt rules to ensure that airline companies provide complete, machine readable information to OTAs and GDSs regarding all ancillary fees, so that third-party sites can provide accurate information to consumers. If regulators require all carriers to release complete fare, schedule, and fee information, OTAs can provide consumers accurate prices while they shop for airfares, avoiding situations where consumers only learn of additional fees during the booking process. By getting to see their full costs upfront, consumers would be able to better determine if they are getting a competitive price or simply paying extra in fees.¹⁰⁹

Moreover, DOT should require airlines to make all ancillary services, such as extra baggage or early boarding, available for purchase through any third party if they already allow this feature for at least one partner. By requiring transactability, DOT can ensure that consumers can purchase airfares, including any related services, regardless of what site they use to book air travel.

In short, OTAs and meta-search engines can help ensure that travelers are getting competitive prices. Regulators should require airlines to be transparent about their prices and fees, and they should require that OTAs accurately relay that information to consumers. By taking these steps, policymakers can ensure that third parties can continue to access the data necessary to increase competition and price transparency in air travel and empower consumers.

CONCLUSION

While some regulators have expressed a growing interest in regulating anti-trust issues related to data, they have often mistakenly focused on large tech companies, such as Facebook or Google, rather than the entrenched sector-specific businesses that can use their exclusive access to key industry data to restrict competition in their industry.¹¹⁰ Policymakers should correct this oversight. As this report has shown, in the real estate, financial services, and airline industries, some players unfairly limit third parties from using data and these practices are hurting innovators and consumers. In each of these industries, increasing access to data will help consumers and innovators. Policymakers should take steps to ensure data controlled by these entities is also available to improve competition, innovation, and the consumer experience.

Without intervention, these industries will continue to see businesses restrict access to their data, even if this comes at the expense of consumers, because they want to avoid competition enabled by emerging digital services. Real estate brokers benefit from controlling housing

listings, financial institutions benefit from controlling customer account information, and airlines benefit from controlling access to pricing and availability data.

Therefore, policymakers should intervene to increase competition and innovation. In most regulated industries, regulators should create rules to ensure fair and equitable access to data through open APIs. In the financial service industry, the Office of the Comptroller of the Currency (OCC) and the Securities and Exchange Commission (SEC) should establish guidance for financial institutions to allow third parties to access customer data, securely and with the customer's permission. In the transportation sector, the Department of Transportation (DOT) should require airlines to make all ticket pricing information publicly available in a standardized format and prohibit unfair marketing practices that limit distribution of this information to certain companies. In addition, DOT should require airlines to allow third parties to complete transactions for its customers. And, finally, in real estate, state policymakers should require brokers to provide open access to their real estate listings.

In addition, in some cases, regulators should intervene when a company's actions unreasonably restrain competition. For example, the DOJ and the FTC should remain vigilant regarding the NAR and the MLSs once the 10-year settlement concludes in 2018, and these agencies should investigate whether any MLSs' or brokerages' actions to block data from online listing companies are collusive and exclusionary.

By taking these steps, policymakers can limit anti-competitive efforts to restrict data sharing and thereby promote innovation, efficient markets, and consumer welfare.

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