Why Internet Platforms Don't Need Special Regulation

BY JOSEPH V. KENNEDY | OCTOBER 2015

Avoiding improper regulation of Internet multisided markets is important because they are capable of creating an enormous amount of value in society, including in societies where the platform is only used, not produced.

The Internet has had a major, beneficial impact on everyday life, and an important source of these benefits has been the rise of multisided Internet platforms such as eBay, Uber, TaskRabbit, and Airbnb.[1] The role and influence of these platforms has led to calls for greater regulation, especially in Europe. But many of these calls overlook how platforms work, the value they create, and the constraints they face. Because platforms remain subject to normal competitive forces, their structure alone should not give regulators untoward concern. Regulators already have the ability to address clear cases of anticompetitive or anticonsumer behavior. Beyond that, the legitimate concerns of government are limited.

INTRODUCTION

The Internet has had a major impact on everyday life, both in developed countries and, increasingly, in the rest of the world. This influence has been overwhelmingly positive, giving people easier access to more information, lowering the transactions costs of doing business, and giving people access to high quality storage and computing power from almost anywhere in the world.

A major source of these benefits has been the rise of Internet platforms such as Facebook, Uber, and Amazon. Internet platforms create value largely by bringing people (or companies) together and reducing the transaction costs for valuable activity. In some cases these platforms allow users to do things that were either impossible or prohibitive to do before. Facebook makes it possible for anyone to create their own digital profile, upload

pictures and messages, and keep in touch with family and friends. Google and Bing make it incredibly easy to find even the most esoteric information on the Web. Both social networks and search engines give large and small businesses new platforms for advertising their services. App stores give smartphone users easy access to a multitude of apps while giving developers a centralized place to access potential customers. Etsy, Uber, and Airbnb allow buyers and sellers of goods or services to find each other easily, agree on mutually acceptable terms for completing a transaction, and efficiently deal with the difficult issues of payment, quality, and reputation.

Together these platforms make possible an enormous volume of economic activity. One indication can be seen in the rapid rise of their market values. Uber, for example, has recently been valued at $50 billion, even though it is relatively new, has at least one major competitor, and has few tangible assets.

While Internet platforms are new, market platforms are not. But the former are playing a unique role in the marketplace by bringing users together and reducing one of the most important barriers to economic activity: transaction costs. Because Internet platforms are different from traditional businesses, they often do not fit well into the normal regulatory system. Regulators therefore need to have a good understanding not only of platforms generally, but also the role that specific platforms play in the market, including the source of the value they create, their relationship to customers and competitors, and the alternatives to them.

Because it reduces communication costs, scales easily, and is increasingly available anywhere all the time, the Internet has enabled the rapid rise of companies whose business model is to provide a platform that lets others create value. Often operating with relatively few staff and fixed costs (other than software code), these companies have been able to expand quickly, extending their services to millions of people and acquiring large market valuations, in part because there are real network effects that lead to scale.

The rapid increase in both usage and value for some companies has produced a number of calls for greater regulation. The motivations behind these outcries vary, but include fears of market power, exploitation of workers, concerns about data security and privacy, opposition from incumbent suppliers, and general fears of lagging national or regional competitiveness in the digital economy. By and large these calls for new regulatory action are misplaced. In fact, by showing how efficiently specific markets can work, Internet platforms often point out the need for reduced regulation of existing industries, such as taxis, lodging, and product marketing, so that they can do a better job responding to the demand that platforms create.

Finally, while Internet platforms are just as capable of anticompetitive behavior and bad business practices as any other company, the traditional powers available to injured parties and government regulators can handle virtually all actual (as opposed to possible) harms. There is therefore little need at this point for new laws or regulatory actions aimed solely at platforms per se.

THE ROLE OF MULTISIDED MARKET PLATFORMS

Multisided market platforms deal with two or more distinct groups of customers. While the distinction can be somewhat fuzzy, unlike traditional businesses, the value that they create does not lie mainly in the physical good or service that they provide to either party. Instead, it lies in the marketplace that they create for bringing like-minded people together. Although Walmart, for example, helps both its suppliers and customers do business, both groups view themselves as primarily dealing with Walmart rather than with each other. The counter-party in all of their transactions is Walmart. In contrast, consumers who shop on Amazon can deal directly not only with Amazon, but with a large number of other producers, with Amazon facilitating the transaction.

One paper on two-sided markets cites the town market and the village matchmaker as early examples of platforms.[2] Both created value by reducing one of the most important impediments to the completion of mutually beneficial economic agreements: transaction costs. However, the Internet has produced much more powerful forms such as eBay and Tinder.

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Economist Ronald Coase won the Nobel Prize for showing that, in the absence of transaction costs, people will always enter into whatever economic transactions maximize their joint welfare.[3] Property laws can influence the distribution of the gains from trade, but without transaction costs the ownership of goods and services will always end up in the hands of whoever values them the most.

The problem is that transaction costs are all around us and often are very large. The common types of transaction costs facing a seller of wheat include searching for someone willing to buy wheat, negotiating a fair price and terms of delivery, and enforcing the agreement in case of any dispute. If these costs are greater than the mutual value created by an economic transaction, the transaction will not take place. And even if the costs are lower than the value, high transaction costs mean higher prices or reduced output.

An example will help illustrate this. Let's say you inherit a chest of drawers from your aunt. While you loved your aunt, you are not so fond of her taste in furniture. Let's assume the chest is only worth $100 to you and you would like to sell it. If the market value of the chest is $5,000, you have a good chance of finding a buyer on your own. Depending upon the number of buyers, your knowledge of the chest's worth to them, and your negotiating prowess, you might get more or less of the $4,900 in economic value being created by transferring ownership from someone who values it at $100 to someone who values it at $5,000.

What if there is no clear market value, but the person who values it the most would only pay $250? You could still create $150 in value ($250-$100) by selling it to him. But now the cost of finding that person, negotiating with him, and arranging payment might easily exceed that value. In this case, the transaction probably will not take place, and the chest could sit in your basement for the next 20 years.

This problem could be solved by an antiques dealer who gives both buyers and sellers of furniture a cheaper alternative to finding each other. The seller knows where to go to sell

the chest for more than $100, and the buyer knows where to go to look for furniture. Because of specialization and economies of scale, the cost of matching the seller with someone who values the chest highly is dramatically reduced. If the main goal is to create value by transferring ownership to someone who values the furniture more, then clearly the presence of the antique dealer is valuable. The distribution of the $150 surplus between the seller, the buyer, and the dealer is relatively unimportant.

There are three things to note about the antiques dealer. First, he is creating value even though he does not make anything tangible or provide a direct service other than connecting two people. Second, he is unlikely to perform this service unless he makes a sufficient profit from doing so. Third, the value he creates may far exceed the amount of the gain that goes to him. This is especially likely to be true if there are a lot of dealers around and only a few buyers or sellers.

It is easy to underestimate the value that middlemen create. In the case of the antiques dealer, if we knew the price at which the dealer bought and sold the chest and his cost in doing so, we could calculate the value each party derived from the transaction. But this is only because we made up the values to begin with. In the more typical case, we might have little idea of the value of the transaction to each party. Assume we only know that the dealer bought the chest for $150 and sold it for $200. We might conclude that only $50 in value was created. But the value to both the buyer and the seller also depend on how much the chest is worth to them. If the seller thought it was worthless and the buyer would have gladly paid $1,500 for it, then $1,500 in value has been created, of which the dealer only got $50. Moreover, we need to subtract the dealer's opportunity cost from his profit. If he could have made $40 doing something else, then his profit is only $10, or 1/150th of the total value. Of course, each party will try to capture as much of the value as possible. But again, we should be less concerned with how the value is distributed than with whether it is created in the first place.

But there is an alternative to the antiques dealer. Someone could create a market platform where antique buyers know they will meet sellers and sellers know they will meet buyers. The two parties could then arrange the sale themselves, without a middleman. In the Internet age, this platform could electronically connect buyers and sellers from around the globe. Sellers would meet many more buyers, and buyers would have a much larger selection of furniture to choose from. Such a platform would directly compete with the antiques dealer, possibly displacing him altogether. The only real limit now would be the cost of transporting the antique from the seller to buyer.

The main value of the platform is in providing a common place for other market participants to go and easily conduct their transactions. Growers and consumers know to go to the farmers' market to sell and buy fresh produce. Adults know to go to the matchmaker for help in finding a suitable mate. Just as important, the amount of value created depends in part on establishing the right number of each type of market participant.

Often, platforms that are too small find it difficult to attract new customers because the chance of finding a suitable exchange partner is relatively low. But platforms that are too

large can suffer as congestion increases both the cost of finding a partner and the aggravation associated with the search, especially if search algorithms do not adequately enable users to find what they need.

Similarly, platforms that attract a mismatch of partners can suffer. Consumers go to shopping malls to buy things. If most of the stores have moved out, there is little point in going. For the same reason, one of the primary attributes stores look for in a shopping mall is how much foot traffic they can expect to receive. When two-sided markets try to attract additional customers, they are not only pursuing their own interests, they are also furthering the interests of those who either already use the platform or anticipate being on the other side of a transaction.

The main value of platforms is in providing a common place for other market participants to go and easily conduct their transactions.

These traits imply two important facts about multisided platforms. One is that platforms often benefit from network effects. The value to each participant depends on the number and quality of other participants. For this reason, the addition of new members creates a positive externality by making the network more valuable to other members. In many cases, the addition of a new seller can even benefit other sellers. On the one hand, the new seller will compete with existing sellers. However, the seller's presence may attract more buyers. In addition, the added competition may reduce prices, attracting still more buyers.

The second fact is that the value that individual buyers and sellers bring to the market may differ. There is a reason why owners pay Paris Hilton $1 million to patronize their club.[4] Some people are more valuable in attracting additional patrons than others. But the value for buyers and sellers may also diverge. A platform may deliver more value for buyers than it does for sellers, either because the latter create more value or are less numerous. In this case it does not make much sense to charge both parties the same price for participating in the platform. In fact, in some cases the platform may need to subsidize the cost for some people to join. One common example is the popularity of ladies'-night specials. Bars presumably attract enough single men looking for mates. But a bar's ability to attract males also depends on its ability to attract an appropriate number of females, who may not fully value the opportunity. Bars solve this problem by price discrimination, charging women less and men more.

THE BENEFITS OF INTERNET PLATFORMS

In recent years a great deal of regulatory attention has focused on the role that several prominent Internet platforms play in the market. Multisided Internet platforms facilitate a large variety of activities in the economy, including the selling of goods, advertising, transportation, dining, lodging, and connections between people. While they bear similarities to traditional platforms, they also have some important differences.

One of the most important differences is that their use of the Internet as a platform allows them to grow very quickly. The ability to lease cheap processing power and storage capacity in the cloud removes a lot of the fixed costs of starting a new business. The use of the Internet as a medium provides cheap advertising and dramatically facilitates geographical expansion. Finally, the fact that many Internet platforms concentrate on putting willing buyers and sellers together, rather than on directly providing consumers with the goods or

services that they ultimately want, relieves them of the need to make large capital investments. A taxi company needs to buy a lot of cars and worry about repairs and insurance, whereas a company that solely puts riders in contact with drivers does not.

The rapid rise of multisided Internet platforms such as Uber, Airbnb, and many others has disrupted existing markets, including some non-Internet platforms. Incumbents and regulators have suddenly been faced with very large players that account for a growing share of economic activity and clearly impact the traditional economy even though they do not fit easily into the existing regulatory system.

Avoiding improper regulation of Internet multisided markets is important because they are capable of creating an enormous amount of value in society, including in societies where the platform is only used, not produced. A recent report lists five ways in which these platforms create economic value.[5]

1. *Improving resource use*. Many Internet platforms concentrate on increasing the use of resources that sellers already have by making it easy for them to find buyers willing to lease them. For example, Uber lets drivers earn money by driving their own cars, possibly making the purchase of a car affordable in the first place. Airbnb allows homeowners to rent out spare bedrooms that would otherwise go unused, supplementing the owner's income. Etsy gives crafts makers the opportunity to reach a wide audience with little risk or personal outlay. Peerby lets people who want to borrow an item find neighbors willing to lend it. eBay lets people sell goods they don't need anymore. Asset-sharing businesses also make it easier for strangers to co-own property that none of them could individually afford.[6]

2. *Increasing competition*. Because Internet companies can reach so many people so easily, they can bring an enormous number of new buyers and sellers into the market. This increases market efficiency and improves the chance that each person will find a good match. One might think that sellers would be better off if only the number of customers were increased and that customers would benefit if only new sellers were allowed to join. But because the platform's value to both sides is interdependent, it is possible that any increase in popularity increases the value to everyone, especially those whose participation is marginal.

3. *Reducing transaction costs*. As discussed above, platforms do this merely by making it easier for buyers and sellers to find each other. But they can also do a lot more. By calculating the fee, introducing a no-tipping policy, and handling the money, Uber removes the need to haggle or decide just how much to tip for a so-so ride. The ability to rate buyers and sellers improves the role of reputation in the market and weeds out bad actors, perhaps more effectively than any prescreening could do. In general, society should favor platforms that take on this role even though it increases their influence over

platform users and may impinge on some users' freedom by limiting their ability to depart from the company's requirements.

4. *Reducing asymmetric information between buyers and sellers*. Asymmetric information in markets usually occurs when the seller has much more information than the buyer. As Joseph Stiglitz showed in research that led to his Nobel Prize, this can lead to suboptimal economic outcomes.[7] One way platforms reduce asymmetric information is through the rating systems discussed above. But platforms can also furnish users with information about the quality of goods, tips for buying or selling, and price comparisons. In doing so, they reduce the risk to both sides of engaging in a transaction and help determine a price that each can regard as fair.

5. *Bringing new buyers and sellers into the market*. One way platforms do this is by creating new products, reducing entry barriers, and improving the ease of doing business, either by improving service or reducing the cost.[8] Another way is by making it easy for ordinary people to participate at the margin. A driver need not get a taxi license and lease a cab in order to drive a few people around. A homeowner can earn a couple hundred euros without making a long-term commitment or complying with the regulatory burdens hotels face. Many of the people who sell on eBay do so only occasionally. If faced with high initial costs in order to participate, they would probably not sell at all. TeachersPayTeachers, for example, makes it easy for teachers to sell their classroom materials to other teachers and, in the process, makes some of the nation's best lesson plans available to all at very little cost.[9]

Internet platforms create value largely by bringing people (or companies) together and reducing the transaction costs for valuable activity.

Note that much of this value is difficult to quantify and certainly does not get measured in national income and product accounts. What is the value of the increased efficiency of bringing lots of buyers and sellers together? How much does a consumer benefit when given more information about the true price and quality of a product before buying it? What is the value of bringing competitive pressures to related industries?[10] How beneficial is it to provide an outlet for millions of drivers, property owners, and craftsmen to increase their earnings, even if only by a small amount? How much do Uber riders benefit from the increased ease and better service, even if the cost of a ride were the same (which it is usually not—Uber is usually cheaper than cabs)? The danger is that, because these often enormous benefits are hard to quantify, policymakers will discount them and only look at the perceived market power of the platform.

Another important point for policymakers to consider is that in all of these respects, Internet platforms tend to have a strongly progressive impact on the economy and society, because they help lower-income and otherwise marginalized users the most. At least on the margin, these are the users for whom lower prices, greater access to information, more economic opportunities, and fewer market barriers make the greatest difference. For more affluent users, lower prices or more job opportunities may mean very little. For less affluent users, those kinds of opportunities may make all the difference in their ability to earn an income and afford purchases.

COMMON CONCERNS ABOUT INTERNET PLATFORMS

Critics and regulators have expressed four general concerns about the role of Internet platforms. The first is that some of these platforms have become too powerful and are precluding platform competition in the marketplace. Second, regulators and some consumers have worried about the misuse of consumer data and inadequate precautions to protect the massive amounts of data these companies collect. The third concern is that platforms take advantage of their suppliers by classifying them as independent contractors rather than employees. Finally, regulators and incumbent industries have expressed concern at the threat that platforms pose to existing businesses.

The first three are legitimate concerns about market problems. However, these problems already exist in more traditional industries. Although their existence can impose social costs, for the most part these problems are contained by market competition, civil litigation by injured parties, and targeted regulatory enforcement against specific abuses. Internet platforms do not pose unique challenges in this regard, because they are subject to these same checks and balances. Specifically, it is far from clear that new legislation is needed to deal with imagined problems. Existing laws give agencies sufficient powers to deal with any actual problems.

The fourth concern frankly deserves less or even no attention. It is for the most part the creative destruction that Joseph Schumpeter portrayed as driving market innovation and higher productivity.[11] Those who lose out to market competition, especially by new entrants who may not face the same regulatory burdens, often feel that the latter benefit from an unfair advantage. In fact, because of lobbying, public policy often tilts toward incumbent firms and has provided them with benefits for decades.[12] But this usually imposes costs that limit economic growth.[13] In fact, the growth of Internet platforms usually creates great social value because these platforms feed on the dissatisfaction of overcharged consumers and marginalized producers who suddenly find they have additional choices.[14] They should therefore be welcomed, not shunned. The policy response should be to assist those workers hurt by Schumpeterian forces to transition to other occupations and industries, not to stop consumer-friendly innovation.

The False Threat to Competition

The determination of a market price depends upon active competition among both buyers and sellers, none of whom have the ability to affect price through their individual decision. If one or a few sellers are able to exert market power, then two things will happen. First, some of the existing consumer surplus will be transferred to producers. However, because this does not affect total social value created, it may not justify regulatory action. The second effect is that producers have an incentive to reduce supply in order to increase the price and their profits. Because consumers would willingly purchase additional output for less than it costs to produce it, this lowers total welfare and represents a social loss.

In the United States, long-standing laws, including the Sherman Act of 1890 and the Clayton Act of 1914, already give both the Department of Justice and the Federal Trade Commission regulatory authority to punish anticompetitive behaviors such as price fixing, collusion, and industry consolidation. The European Union and many foreign countries

also have experienced regulators empowered by robust antitrust legislation that focus on the same possible harms. These laws are fully capable of dealing with most problems that might arise from uncompetitive behavior among Internet platforms although, as explained below, the unique nature of these platforms means that some behaviors that might be regarded as anticonsumer in traditional industries, such as pricing below marginal cost, can actually have the opposite effect with platforms. In addition, these laws give consumers and competing firms the right to sue for damages.

There are other reasons to think that the market power of Internet platforms may not represent a unique threat. The first is that, in most cases, few of these markets require a major commitment from either buyers or sellers, and both sides have the option of doing something else with their time and money. This ensures that the value of participating in the market is likely to be at least equal to its cost. Otherwise people will simply stop using the platform.

The danger is that, because the often enormous benefits generated by platforms are hard to quantify, policymakers will discount them and only look at the perceived market power of the platform.

Second, Internet platforms face competition from numerous sources, including established industries, direct competitors, and related services. For example, travelers do not have to go to New York if the price of lodging is too high. If they do go to New York, they have the option of staying at one of many hotels. If they wish to have a more private experience, a number of services in addition to Airbnb exist to link them to a bed-and-breakfast or other arrangement.[15]

A recent news article describes some of the alternative Internet platforms that compete with Uber in New York City.[16] Besides taxis, private rides, and Lyft, which has a business model similar to Uber, the article mentions Via, which allows people to share a ride in Manhattan between Houston and 110th streets for as little as $5; Bandwagon, which matches passengers standing in the taxi line at LaGuardia Airport; Tripda, which matches people for long-distance rides; and Gett, which offers flat fares for rides south of 110th Street. Because users, including sellers, incur relatively little investment in using a platform, they can easily switch among them, a practice known as multi-homing. For instance, Uber drivers frequently also drive for its main competitor, Lyft. Internationally, riders can use other services such as Hailo in the United Kingdom or SnapCar in France.

The conclusion is that both suppliers and sellers usually have many options to choose from. Large platforms such as Uber and Lyft add to these choices; they do not restrict them. As a result, these companies are unlikely to acquire enough market power to artificially restrict supply in order to raise prices and reduce quality. The main effect of their presence is to take that power away from the taxi industry and its government regulators.

Competition is especially strong for platforms that rely on advertising for a large portion of their revenues. In order to attract consumers, these sites usually have to offer their basic services for free or at a heavily discounted price, although they may also offer a premium option. Although advertisers have to pay, the largest ones are very sophisticated about making sure the value of advertising exceeds its cost. They typically purchase advertising across a wide variety of media. A company such as Google has to compete not only with other search engines, but also with other types of Internet platforms and with television

and print media. Independent companies such as Visual IQ make their money by helping companies find out which outlets provide them with the best value.[17]

In addition to existing competitors, platforms face new entrants. The Internet ecosystem continues to evolve with the emergence of new technologies and business models. An early paper on Internet platforms described in great detail the extent to which these companies compete against each other for consumer attention.[18] Even in the case of Android and Apple, where the companies exert control over their app stores, actual market power is weaker than supposed. First the two platforms directly compete with each other every time a consumer buys a new phone. Much of this competition is based on the number and quality of the apps available. Although the companies have the power to refuse to sell specific apps, abusing this power would make their platform less attractive to users. In contrast, exercising good quality control over the apps available in their stores reassures users that the software they download is safe. Finally, in the case of Android phones, users can modify the phone, permitting them to download apps directly from developers.

Moreover, even when two-sided platforms look like they are exerting undue market pressure on producers, the benefits may actually be going to users on the other side. For example, book authors have recently urged the Department of Justice to investigate Amazon's alleged market power over book publishers.[19] Yet the key to Amazon's growth rate has been its ability to offer readers lower prices than they can get anywhere else. Consumers have benefitted greatly from these price reductions.

Why Traditional Antitrust Analysis Often Fails in the Examination of Multisided Markets

There are also more technical reasons why the normal approach of antitrust regulators does not fit well with multisided platforms. Indeed, this limitation was recently recognized by the European Union's (EU) own submission to a recent Organisation for Economic Co-operation and Development (OECD) report on Internet platforms.[20] There the EU delegation to a meeting of the OECD Completion Committee finds that "two-sided platforms do present some problems for competition policy. For instance, an efficient price structure may not reflect relative costs; a high price cost margin is not generally an adequate indicator of market power; a price below marginal cost may be unrelated to predation and, importantly an increase in competition may lead to a less efficient or less balanced price structure, thus harming one side of the platform more than the other."[21]

Antitrust regulators often look for evidence of unfair pricing by companies with market power. In some cases, companies may be accused of charging too high a price, thereby restricting production and appropriating a large amount of consumer surplus for themselves. At the other extreme, regulators often view any practice of setting prices below marginal cost as an attempt to gain market share and drive competitors out of business.

Ironically, platforms can be accused of doing both even when they are maximizing social welfare and earning low profits.[22] Because platforms always have to balance demand on all sides of their business, the price on one side is often well below marginal cost. In some cases, platforms even pay users (or companies that users use) to participate.[23] This usually happens when user demand is highly elastic on that side or users do not multi-home.[24] Because these users have alternatives, charging them even marginal costs will drive them

away, harming not only the platform owner, but users on the other side of the platform, who now have fewer people to transact with.

Conversely, where one user side has few options and highly inelastic demand or where network effects result in the appearance of a monopoly, platforms are often able to charge a much higher price, making up some of the losses from offering their service free to others. But rather than resulting in higher profits, these revenues are often competed away in an attempt to keep less committed users from leaving.[25] Thus, the benefits from market power go not to the platform but to consumers on the other side.

Even in the normal case of monopoly, a company pays a cost for raising its prices: Some customers stop buying. This effect is magnified for platforms. When a platform owner raises its price to buyers, the direct result is that fewer buyers will use the service. But then something else happens. The loss of buyers makes the site less attractive to sellers, so some of them also leave. This of course, makes the site even less attractive to buyers, so more of them leave. The result is that a price increase on one side not only causes more users on that side to leave, but also leads to the loss of users on all other sides.[26]

The unique nature of Internet platforms means that some behaviors that might be regarded as anticonsumer in traditional industries, such as pricing below marginal cost, can actually have the opposite effect with platforms.

The chapter by the EU delegation referenced above also recognizes that other forms of market power may be beneficial in the context of a multisided market. Caillaud and Jullien developed a model in which consumer welfare is higher if a platform requires exclusive agreements on one side of the market, even though the practice can lead to monopolization if the platforms do not offer differentiated products.[27] Choi shows that product tying can enhance total welfare if intergroup externalities are high enough compared to the benefits of product differentiation.[28]

It is true that economies of scale and the presence of large indirect externalities favor large firms and may limit the number of competitors that a platform faces. But, as the analysis above shows, this may not harm consumers and in many cases, by making it easier to find sellers, dramatically increases consumers' welfare. There are also countervailing pressures that limit growth.[29] One is the possibility that market congestion or the presence of too many counterparties increases prices or lowers the platform's value to users. Another is the presence of multi-homing and product differentiation, both of which reduce the importance of economies of scale.

Spulber and Yoo point to factors that are likely to continue increasing the competition that platforms face.[30] One is the continuation of technological changes in network architecture that reduce startup costs and boost both entry and exit by allowing assets to be used for a variety of purposes. Another is a continued increase in total demand or usage, which reduces the importance of fixed costs as a barrier to entry. Finally, they predict that the demand for continued innovation will erode any temporary market power and force companies to constantly invest in new features. Examples of powerful platforms that lost their dominance due to a lack of innovation include AltaVista, MySpace, and Friendster.

This emphasis on the need for continuous technological change as a check on the ability to abuse market power is also reflected in the conclusions of a recent report by the European Parliament.[31] That report concluded that:

> [C]ompetition authorities and policy makers should focus on preventing the creation of entry barriers, facilitate entry into markets, and foster innovation. Competition authorities should have a cautious attitude towards actual competition problems and to [sic] rely on the self-correcting powers of the market, provided that certain public values such as taxation, privacy and security are protected by appropriate (other) policy frameworks.[32]

Regulators also fear that companies will collude to raise prices or limit competition. But collusion tends to be much more difficult in the case of multisided platforms. In order to be successful, platforms would have to collude on all sides of the market in order to benefit; otherwise competition on those sides of the market where demand is elastic or users do not multi-home is likely to erode any excess profits.[33] But platforms often face different competitors on different sides, reducing the shared interests among competitors and increasing the number of parties needed to collude.

Evans finds this to be especially true for "attention seekers": platforms that rely on advertising for a large portion of their revenues and must therefore compete heavily for the attention of Internet users. Concluding that these companies (including Google and Facebook) compete against each other largely based on the attention of consumers rather than the specific services they offer,[34] he finds that:

> [A]ttention seekers cannot profitably raise price above zero, must improve the quality of their services through frequent introduction of new features to prevent users from switching to rivals, face constant threats of entry by new attention seekers that will divert traffic from them, face continual threats that new or existing attention seekers will develop a drastic innovation that diverts massive amounts of traffic from them, and operate in a business that has low barriers to entry and exit.[35]

Regulators also need to consider the pro-competitive effect of platforms. By reducing entry barriers and making it easier for small, flexible suppliers to reach customers, platforms increase competition in markets such as retail books, rides, and home rentals. By reducing the fixed costs needed to participate in the market, platforms reduce prices and benefit consumers.[36]

A third antitrust concern is whether the merger of two or more companies will substantially reduce competition. In some cases, the EU has already recognized that competition between platforms can make many acquisitions benign. For example, EU regulators approved Google's purchase of DoubleClick despite complaints from many advertisers. Evans and Schmalensee find that in some cases mergers might even result in lower prices for all sides, even in the absence of efficiency gains.[37] Thus in some cases, vertical integration can yield substantial benefits.[38]

Antitrust regulators still need to be watchful, but they cannot merely assume that a platform is behaving in an illegal manner and harming consumers just because it is doing something that they don't like or understand. Instead, they need to make a detailed case-

by-case determination about whether total social welfare has been harmed. Moreover, standard antitrust tools may be of limited use. Two of the leading experts on multisided platforms conclude that "it is not possible to know whether standard economic models, often relied on for antitrust analysis, apply to multisided platforms without explicitly considering the existence of multiple customer groups with interdependent demand."[39] As a result, regulators have to consider how feedback effects from different sides of the market influence demand on each side. In addition, regulators have to consider the welfare of all groups, not just those directly affected by a company's action, before concluding that an action is harmful.[40]

Regulators also need to consider the pro-competitive effect of platforms. By reducing entry barriers and making it easier for small, flexible suppliers to reach customers, platforms increase competition in markets such as retail books, rides, and home rentals.

The problems are even greater when considering the practical difficulties of regulation. Although the conclusions of regulatory analysis may depend heavily on the specific markets involved, the data about demand elasticities, market definition, degree of competition, and interdependence between different sides, that is needed to make these judgments may not be available, especially in new markets characterized by rapid change. Because of limitations on regulators' ability to intervene wisely, their involvement may often reduce total welfare.[41]

Platform Policy in Europe

As part of its Digital Single Market initiative, the European Commission is looking at the issue of Internet platforms and competition. In addition, the Commission's antitrust regulator is currently conducting a formal investigation of Amazon's e-books business[42] and of Google's advertising practices.[43] Moreover, officials from a number of European countries are investigating Facebook's privacy controls and how it handles the information gathered from hundreds of millions of EU citizens.[44]

On a broader front, in April 2015 the EU's Digital Commissioner, Günther Oettinger, gave a speech[45] that some read as calling for new regulation of Internet platforms that would allow European companies to replace the dominant U.S. companies and reverse the continent's purported negative balance of payments in platform fees.[46] The speech could also be read more benignly as merely exhorting European governments and firms to innovate faster so that they can develop more of the next generation businesses. However, this interpretation was weakened by the later release of internal documents that explicitly raise the possibility of regulating the dominant Internet platforms on many of the grounds discussed in this report, motivated by a desire to make it harder for U.S. Internet firms to thrive in Europe.[47] Although described as preliminary and noting that no members currently favor additional regulation, the document's misunderstanding of the role of platforms and the value that they create leads it to overestimate the need for government action.[48] The document questions whether platforms create much value at all, and clearly raises the possibility of additional regulation to address perceived harms.[49]

Rather than concentrate on supposed dangers that platforms currently pose or more broadly on the purported threat of U.S. information technology companies to European competitiveness, European officials would do better to ask themselves why the continent missed the first platform revolution and continues to lag behind not only in the development of new technologies but, as the Information Technology and Innovation Foundation (ITIF) has shown, in the adoption of existing ones.[50] The answer lies in part

with the need to create a digital single market but also with the European approach to risk versus regulation and its comfort with the status quo versus innovation. With a potential market of 500 million consumers, Europe offers a very promising market for platforms such as Hailo and Zopa in the United Kingdom, Oltre Tata in Italy, and Shareyourmeal in the Netherlands. But its current regulatory environment deters their growth. The focus of a recent conference by the European Parliament was not on the threat to Europe from platforms, but the threat that European regulations posed to the continent's ability to compete in the Internet age.[51]

The False Threat to Privacy

A defining characteristic of the Internet is that it has made the collection, analysis, transmission, and storage of data incredibly cheap. This, and the fact that combining data sources can provide deep insights into personal behavior, has made data issues increasingly important.

There are three main concerns expressed about platforms and privacy. One is how the company itself will use data that its customers give it. Although most companies include a lengthy data policy in their terms of agreement, customers seldom have either the time or the interest to read this document. The second concern is that poor data security allows hackers to steal consumer data, including credit card numbers, contact information, and personal details.

For example, Uber recently generated headlines when its top New York manager allegedly used the company's database to look up the travel data of a reporter who was coming to meet him.[52] Shortly before, another top executive had suggested hiring opposition researchers and journalists to counter negative stories about the company.[53] In response, several riders deleted Uber's app from their smartphones,[54] and the company was forced to strengthen its policies for data privacy.

But these concerns about privacy and security are not unique to platforms. Traditional companies are also capable of misusing customer data or having lax security. Therefore, these concerns should be addressed by general privacy and security polices, not ones directed specifically at platforms. There is no clear need for new privacy laws aimed specifically at Internet platforms. The concern is that platforms have too much power and consumers have no meaningful choice. However, competition among platforms, the threat of consumer suits when data is misused, and negative publicity all act to constrain a company well in advance of any controversy.

Data security has also become a serious problem. Many companies collect sensitive information about their customers. Ensuring the security of this data was sometimes a secondary consideration. As a result, several large U.S. companies, including Macy's, Wyndham, and Target have suffered great embarrassment and financial losses when hackers breached their databases and stole customers' personal data.

Again, however, the need for special action aimed at Internet companies is dubious. Most data thefts have been aimed at traditional companies, not just platforms. All companies and their insurers are rapidly becoming aware of the threat that Internet security poses to their

business models and of the reputational and financial damage that even a single breach can cause. A U.S. Federal Appeals Court has just affirmed that the Federal Trade Commission has jurisdiction to regulate Internet security under existing laws.[55] The agency has announced its intention to take action when companies fail to take reasonable steps to secure sensitive consumer information. Customers may also have private remedies. Another Federal Court of Appeals recently reinstated a $5 million class-action suit against Neiman Marcus for damages due to the theft of credit card information even though their banks had already reimbursed consumers for any fraudulent charges.[56]

Finally, there is some concern that the algorithms that platforms use to match parties and price transactions may have disparate impacts. The concern goes beyond deliberate discrimination. Because the algorithms developed by most companies depend upon statistical relationships among a large number of variables and self-adapt to changes in the data, no one person or group of people is aware of all the direct and indirect effects they will have. Nevertheless, because race, sex, age, and other personal characteristics are often correlated with other statistics such as income, location, purchases, and contacts, decisions based solely on the second set of variables may have unintended effects on the first set.

Rather than concentrate on supposed dangers that IT platforms currently pose, European officials would do better to ask themselves why the continent missed the first platform revolution and continues to lag behind.

The U.S. Supreme Court has recently ruled that the federal government can take action against housing authorities for implementing policies that have a disparate impact on specific groups, even when those impacts are unintended.[57] However, the Court tried to be careful in saying that the mere presence of disparate impacts was not enough to show a violation of federal law and that these impacts could be justified if the policy in question had a legitimate purpose.

Similar logic could be used to hold companies responsible for the disparate impact on consumers of the algorithms they use even if the impact is unknowing and not in the company's interest. A recent white paper by the European Union raised the possibility that companies could be required to submit their algorithms to the government so that regulators can verify how they work.[58] Such a requirement would be problematic.[59] First, the algorithms change continuously in response to new data. Second, much of the value that platforms produce is tied up in their ability to use data better than their competitors, especially when it comes to matching parties and pricing transactions. Requiring companies to disclose algorithmic information on the mere possibility that the software might have disparate impacts is unwarranted.

The False Threat to Workers

Weak economic growth and growing inequality throughout much of the developed world, together with broader concerns about the threat Internet platforms and technology in general pose to traditional jobs, have caused many to scrutinize the relationship between platforms and individuals who use them to supply goods and services. Platforms typically insist that their workers, such as Uber drivers, sign documents agreeing to be independent contractors rather than employees of the company. Being an independent contractor reduces the worker's relationship with the company, usually disqualifies the worker from receiving employee benefits, and makes it much harder to unionize. However, it also gives the worker much more independence and flexibility. Workers typically work when they want and for whom they want, with little supervision.

Unfortunately, labor law in most developed countries is still structured around a company/employee relationship. Most American workers still get subsidized health insurance through their employer. Many companies also help their employees save through pension plans and 401(k) matches. Many aspects of the safety net, such as disability insurance and workers' compensation, also depend upon the worker's status as an employee. Partly as a result, some people have pushed to broaden the scope of the employee relationship.

The gray area in the employee/independent contractor spectrum is currently wide. The U.S. Internal Revenue Service recently "simplified" its guidance on the issue by reducing the number of factors considered from 20 to 11.[60] These factors have to be applied on a case-by-case basis. Voluntary agreement between the worker and a company is not dispositive. As a result, in many cases neither workers nor employers can know for certain how a court will rule. An employer can find that a worker is considered an employee in one state but not another. It is possible that an individual's status will change over time and that workers doing essentially the same thing will be classified differently.

The modern economy is increasingly characterized by competition and flexibility. Businesses with significant fixed assets, including large payrolls, often find themselves at a competitive disadvantage to more nimble competitors. Although Baby Boomers grew up regarding Fortune 500 companies as permanent fixtures in the American economy, millennials seem much more comfortable with technical change and uncertainty. As a result, the amount of part-time work and work done by independent contractors is likely to increase. In a sense, we are returning to a previous time when a larger portion of workers were responsible for their own businesses.

Yet our national laws, which have not been updated in decades, still reflect a firm employer/independent contractor division. In a better system, workers would not rely on their employers for health insurance, retirement savings, or government benefits. These protections, which are ultimately paid for by the worker anyway, should be freely available to anyone who works, irrespective of their personal circumstances. Although these changes require a major restructuring of federal and state law, they would benefit workers by reducing their reliance on employers.[61]

Missing in this debate is any real consideration of what is in the best interest of most workers or of what they want. In fact, it is very likely that classifying people who work for Internet platforms as employees would destroy much of the value that they create and hurt more workers than it helps. Although a certain number of traditional jobs would be created, a larger number of ad hoc workers who only want to work for a limited period of time, work variable hours, or limit their involvement to certain jobs, would be further marginalized. A great source of any platform's value lies in its ability to match supply and demand on a dynamic basis. There is a reason why people often have trouble hailing a cab, especially in busy times or bad weather; cab companies do not want to incur the fixed costs needed to meet a sudden surge in demand. Cases like emergency rooms, where the supply always has to be there, are very expensive precisely because a lot of labor and capital is sitting idle much of the time.

A recent report by the McKinsey Global Institute estimated that using Internet platforms such as Monster.com, LinkedIn, and UpWork to better match underemployed workers with job opportunities could boost the nation's GDP by $512 billion annually and help place over 4 million workers.[62] Most of this gain comes from allowing more people to work through fractional employment platforms. If consumer demand largely determines company needs for labor, then companies should not be blamed for wanting flexible workers. Regulators may try to force this demand for workers into the traditional long-term, 5 days a week/8 hours a day model. Because much of the economic gain from Internet platforms goes to the workers, efforts to do this are likely to hurt workers more than they hurt companies or consumers.

Finally, the application of current labor law perverts the incentives facing platforms. Because of their role in matching suppliers with customers, the platform can often reduce transaction costs and increase value by doing more than simply putting the two parties in contact with each other. Consumers value quality and convenience. Therefore, a platform that carefully vets its suppliers, determines the price of the transaction, and handles the payments electronically is likely to increase the value realized by both parties. Likewise a platform that helps its suppliers document their income, file their taxes, and set up savings programs is also creating great value. Yet, this extra involvement could also be used against the company in determining whether an employer/employee relationship exists.

Requiring companies to disclose algorithmic information on the mere possibility that software might have disparate impacts is unwarranted.

The Real Threat to Incumbent Industries

Internet companies have had a dramatic impact on economies. Better use of data could generate $1.3 trillion in additional value each year in just seven industries.[63] The Internet of Things could contribute up to $11.1 trillion in global value by 2025, equivalent to 11 percent of current global GDP.[64] And, as mentioned above, better use of Internet platforms to match workers with productive employment could increase U.S. GDP by $512 billion. All of this will have a profound effect on some existing industries.

Technological displacement is not a new phenomenon, nor is the political reaction against it. The British Luddites rioted because their high-skilled textile jobs were being replaced by machines that low-skilled workers could operate. Travel agents have had to adapt to the threat of online platforms such as Travelocity that allow travelers to book a flight, rent a car, and reserve a room all in one spot. So we should not be surprised that taxi drivers, hospitals, and the American Bar Association all question the value created by Uber, Heal, and UpCounsel and often seek to limit their participation in the marketplace.

Such concerns are misplaced. There is no reason to expect that the tremendous value created by platforms should go to incumbent providers. Instead, it is meant for the consumers that use them, many of whom cannot find affordable service for the relatively low-value work they need done. It also goes to suppliers on the margin who are otherwise displaced by the incumbent industry's ability to raise prices by restricting supply. Although these workers are fully capable of doing the job, their presence threatens to increase supply and reduce prices.

Rather than extending new regulations to Internet platforms, the correct response of U.S. and EU regulators should be to prevent national, state, and local governments from

erecting competitive barriers to platforms. They should also engage in an active dialogue with other government agencies in order to make sure that these agencies implement the same standards, especially with regard to data use and security, that the regulators impose on the private sector.

CONCLUSION

It is easy to be uneasy about the impact of Internet platforms. New companies quickly achieve national scope and huge market valuations. They pose a threat to incumbent industries and the regulations supporting them. They use vast amounts of data in mysterious ways. They often present users with a take-it-or-leave-it approach to participating in the platform. Finally, they may act as indicators of where the economy is heading, whether we like it or not. As a result, they have attracted a great deal of regulatory scrutiny.

The correct response of U.S. and EU regulators should often be to prevent national, state, and local governments from erecting competitive barriers to platforms.

But such scrutiny is misplaced. The rapid adoption of these platforms shows that they are creating tremendous consumer value. The apparent ease with which they can find suppliers demonstrates that, at least for some, they are providing real job opportunities. The platforms face strong competition from the ability of consumers to spend their money on other things, incumbent providers, direct competitors, and other platforms that compete for the most profitable margins of the market. They have strong financial and reputational incentives to handle data in a responsible way. Their entire market value depends upon their ability to attract and keep a reliable group of workers, any one of whom can leave without notice or damage the company's reputation by treating consumers poorly.

Given the value created and the existing market constraints, there are few reasons to fear that Internet platforms pose a unique challenge to either the labor market or the product market in which they operate. Moreover, regulators already have sufficient legal powers to act against the most likely problems. The question is whether they will instead divert their attention to unlikely ones.

ENDNOTES

1. According to one definition, a multisided platform "has: (a) two or more groups of customers; (b) who need each other in some way; (c) but who cannot capture the value from their mutual attraction on their own; and rely on the [platform] to facilitate value-creating interactions between them." David S. Evans and Richard Schmalensee, "The Industrial Organization of Markets with Two-Sided Platforms," (working paper 11603, National Bureau of Economic Research (NBER), Cambridge, Massachusetts, September 2005), http://www.nber.org/papers/w11603.pdf. The platform adds value by making it easy for these groups to find each other and strike mutually-profitable deals. The word "platform" is also often used to designate the operating system of a computer. Webopedia, (definition of platform), http://www.webopedia.com/TERM/P/platform.html. The usages are related. Microsoft's DOS, for example, provided a platform that attracted computer manufacturers, software developers, and consumers, each of whom needed the others. However, many platforms have nothing to do with computer software.
2. Evans and Schmalensee, "Industrial Organization with Two-Sided Platforms," 2.
3. Ronald H. Coase, "The Problem of Social Cost," *Journal of Law and Economics* 3, no. 1, (1960): 1–44.
4. Sean Michaels, "Paris Hilton Earns up to $1m for a Single DJ Set," *The Guardian,* October 23, 2014, http://www.theguardian.com/music/2014/oct/23/paris-hilton-earns-up-to-1m-single-dj-set.
5. Christopher Koopman, Matthew Mitchell, and Adam Thierer, "The Sharing Economy: Issues Facing Platforms, Participants, and Regulators," (public interest comment submitted to the Sharing Economy Workshop, Federal Trade Commission, May 26, 2015: 2–3), http://mercatus.org/sites/default/files/Koopman-Sharing-Economy-FTC-filing.pdf.
6. Kristina Shevory, "Fractionals: A Warm Spot in a Cooling Market," *New York Times,* April 13, 2007, http://www.nytimes.com/2007/04/13/realestate/greathomes/13fractionals.html.
7. Bruce C. Greewald and Joseph E. Stiglitz, "Externalities in Economies with Imperfect Information and Incomplete Markets," *Quarterly Journal of Economics,* 101, no. 2, (1986).
8. Koopman, Mitchell, and Thierer, "The Sharing Economy," 3.
9. Natasha Singer, "A Sharing Economy Where Teachers Win," *New York Times,* September 6, 2015, http://www.nytimes.com/2015/09/06/technology/a-sharing-economy-where-teachers-win.html.
10. Scott Wallsten, "Has Uber Forced Taxi Drivers to Up Their Game?" *Atlantic,* August 2015 http://www.theatlantic.com/business/archive/2015/07/uber-taxi-drivers-complaints-chicago-newyork/397931/. A recent study of data from more than a billion cab rides shows that rider complaints declined in both New York and Chicago after Uber began service. One possible reason is that the taxi industry was forced to improve its service in order to compete. Another study showed that Uber does a better job than taxis of servicing New York's poorer neighborhoods. Jared Meyer, "Uber Positive: The Ride-Share Firm Expands Transportation Options in Low-Income New York," *The Manhattan Institute for Policy Research* 38 (September 2015), http://www.manhattan-institute.org/pdf/ib_38.pdf.
11. Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy,* (London: Routledge, 1942).
12. Gordon Tullock, "The Welfare Costs of Tariffs, Monopolies, and Theft," *Western Economic Journal* 5, no. 3, (1967): 224–232; Anne Krueger, "The Political Economy of the Rent-Seeking Society, *American Economic Review* 64, no. 3, (1974): 291–303.
13. Mancur Olson, *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities* (New Haven: Yale University Press, 1982).
14. Clayton M. Christensen, *The Innovator's Dilemma, When New Technologies Cause Great Firms to Fail,* (Cambridge, Massachusetts: Harvard University Press, 1967).
15. For example, see VRBO, Homarama, and Homeaway. In addition, sites like Hometogo and Tripping help consumers compare offerings between these different sites.
16. Stephanie Rosenbloom, "Need a Ride? Your Options are Growing," *New York Times,* August 16, 2015, http://www.nytimes.com/2015/08/16/travel/airport-taxi-uber-lyft-bandwagon-tripda.html?_r=0.
17. David S. Evans, "Attention to Rivalry Among Online Platforms and Its Implications for Antitrust Analysis" (research paper 627, University of Chicago Institute for Law and Economics, 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2195340. Evans finds that "there is little evidence that online markets tend to converge to monopoly because of network effects once the analysis focuses on attention as the proper dimension for evaluating competition. Nevertheless, it turns out that competition for attention is highly dynamic with rivals introducing new products and services, some involving drastic innovation, frequently." page 3 (footnote omitted).

18. Evans and Schmalensee, "Industrial Organization with Two-Sided Platforms."
19. Greg Bensinger and Jeffrey A. Trachtenberg, "Authors Group Seeks DOJ Probe of Amazon," *Wall Street Journal,* August 20, 2015, http://www.wsj.com/articles/authors-group-seeks-doj-probe-of-amazon-1440090438.
20. Directorate for Financial and Enterprise Affairs Competition Committee, *Two-Sided Markets,* (Organisation for Economic Co-operation and Development (OECD), December 17, 2009), 157–86, www.oecd.org/daf/competition/44445730.pdf.
21. Directorate for Financial and Enterprise Affairs, *Two-Sided Markets,* 166 (footnote omitted).
22. Evans and Schmalensee, "Industrial Organization with Two-Sided Platforms," 4.
23. This is essentially what zero-rating policies are where Internet companies, including platforms, pay cellular telecommunications companies for transmission of their data to the consumer, so that it does not count against the consumer's data "bucket."
24. Evans and Schmalensee, "Industrial Organization with Two-Sided Platforms," 27.
25. Ibid.
26. Ibid, 26-27.
27. Bernard Caillaud and Bruno Jullien, "Chicken and Egg: Competition among Intermediation Service Providers," *RAND Journal of Economics,* 34, no. 2 (Summer 2003).
28. Jay Pil Choi, "Tying in Two-Sided Markets with Multi-Homing," (working paper, Michigan State University Department of Economics, Center for Economic Studies and Ifo Institute (CESifo), 2007), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=936481.
29. Evans and Schmalensee, "Industrial Organization with Two-Sided Platforms, 17."
30. Daniel F. Spulber and Chistopher S. Yoo, "Antitrust, the Internet, and the Economics of Networks," (Northwestern University Kellogg School of Management, Institute for Law and Economics University of Pennsylvania Law School, 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2370050.
31. Nicolai Van Gorp and Dr. Olga Batura, *Challenges for Competition Policy in a Digitized Economy* (European Parliament, Directorate-General for Internal Policies, 2015), http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542235/IPOL_STU(2015)542235_EN.pdf.
32. *Competition Policy Digitized Economy,* 10.
33. Evans and Schmalensee, "Industrial Organization with Two-Sided Platforms," 27.
34. Evans, "Rivalry Among Online Platforms," 42.
35. Evans, "Rivalry Among Online Platforms," 17.
36. Liran Einev, Chiara Farranato, and Jonathan Levin, "Peer to Peer Markets," (working paper 21496, NBER, Cambridge, Massachusetts, August 2015), 11, http://www.nber.org/papers/w21496.
37. David S. Evans and Richard Schmalensee, "The Antitrust Analysis of Multi-Sided Platform Businesses," (research paper 623, University of Chicago Institute for Law and Economics Olin, January 2013), 24–25, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2185373.
38. Spulber and Yoo, "Antitrust, Internet, Economics Networks," 19.
39. Evans and Schmalensee, "Antitrust Analysis Multi-Sided Platform," 2.
40. Ibid., 23.
41. Spulber and Yoo, "Antitrust, Internet, Economics Networks," 17.
42. Sam Schechner, "EU Antitrust Chief Throws the Book at Amazon," *Digits: Tech News and Analysis from the Wall Street Journal,* June 15, 2015, http://blogs.wsj.com/digits/2015/06/15/eu-antitrust-chief-throws-the-book-at-amazon/.
43. Natalia Drozdiak, "EU Deepens Antitrust Investigation into Google's Practices," *The Wall Street Journal,* August 21, 2015, http://www.wsj.com/articles/eu-deepens-antitrust-investigation-into-googles-practices-1440178863.
44. Sam Schechner, "Facebook Privacy Controls Face Scrutiny in Europe," *The Wall Street Journal,* April 2, 2015, http://www.wsj.com/articles/facebook-confronts-european-probes-1427975994.
45. Tom Fairless, "EU Digital Chief Urges Regulation to Nurture European Internet Platforms," *The Wall Street Journal,* April 14, 2014, http://www.wsj.com/articles/eu-digital-chief-urges-regulation-to-nurture-european-internet-platforms-1429009201.
46. For an explanation of why this supposed deficit should not be the focus of EU policy see, Stephen Ezell, "The Digital Trade 'Surplus' Should Not be Driving Europe's Digital Agenda," *EurActiv.com*, July 13,

2015. http://www.euractiv.com/sections/infosociety/digital-trade-surplus-should-not-be-driving-europes-digital-agenda-316252.

47. Tom Fairless, "Europe Looks to Tame Web's Economic Risks," *The Wall Street Journal,* April 23, 2015, http://www.wsj.com/articles/eu-considers-creating-powerful-regulator-to-oversee-web-platforms-1429795918.
48. "DSM: A Proposed Approach for Platforms," February 20, 2105, http://oehv.at/OEHV/files/92/92af2b4c-b0b0-4e33-97ee-30cc7d9fad8c.pdf.
49. For ITIF's views on Mr. Oettinger's recent trip to the United States, see Nigel Cory, "The Architect of Europe's Digital Single Market Leaves Important Questions Unanswered on U.S. Visit, *The Innovation Files*, October 2, 2015, http://www.innovationfiles.org/the-architect-of-europes-digital-single-market-leaves-important-questions-unanswered-on-u-s-visit/.
50. Ben Miller and Robert D. Atkinson, "Raising European Productivity Growth Through ICT," (Information Technology and Innovation Foundation, June 2014), http://itif.org/publications/2014/06/02/raising-european-productivity-growth-through-ict.
51. Nicolai Van Gorp, "Cross-Competition Among Information (Digital) Platforms: Proceedings of the Workshop," European Parliament, Directorate-General for Internal Policies, January 20, 2015), http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542187/IPOL_STU(2015)542187_EN.pdf.
52. Mike Isaac, "Uber Plays Defense Against Privacy Invasion Claims," *Bits: The Business of Technology,* December 1, 2014, http://bits.blogs.nytimes.com/2014/12/01/uber-plays-defense-against-privacy-invasion-claims/.
53. Mike Isaac, "Uber Executive's Comments on Investigating Journalists Draw Criticism," *Bits: The Business of Technology,* November 19, 2014, http://bits.blogs.nytimes.com/2014/11/18/emil-michael-of-uber-proposes-digging-into-journalists-private-lives/.
54. Laura M. Holson, "To Delete or Not to Delete: That's the Uber Question," *The New York Times,* November 21, 2014, http://www.nytimes.com/2014/11/23/fashion/uber-delete-emil-michael-scandal.html.
55. Jonathan Stemple, "FTC has power to policy cyber security: appeals court," *Reuters*, August 24, 2015, http://www.reuters.com/article/2015/08/24/us-wyndham-ftc-cybersecurity-idUSKCN0QT1UP20150824.
56. Kim S. Nash, "Appeals Court Revives Neiman Marcus Data Breach Suit," *CIO Journal,* July 23, 2015, http://blogs.wsj.com/cio/2015/07/23/appeals-court-revives-neiman-marcus-data-breach-suit/.
57. *Texas Department of Housing and Community Affairs v. The Inclusive Communities Project*, 576 U.S. (2015); Amber Laxton and Daniel Castro, "Critics of 'Sexist Algorithms' Mistake Symptoms for Illness," Real Clear Technology blog, July 30, 2015, http://www.realcleartechnology.com/articles/2015/07/30/critics_of_sexist_algorithms_mistake_symptoms_for_illness_1257.html; Travis Korte, "Disparate Impact Analysis is Key to Ensuring Fairness in the Age of the Algorithm," *Center for Data Innovation,* January 20, 2015, http://www.datainnovation.org/2015/01/disparate-impact-analysis-is-key-to-ensuring-fairness-in-the-age-of-the-algorithm/.
58. DSM: Approach for Platforms.
59. Laxton and Castro, "Critics of 'Sexist Algorithms.'"
60. Internal Revenue Service (IRS), *Employer's Supplemental Tax Guide Publication 15-A*, (Annapolis, Maryland: Department of the Treasury, 2015), https://www.irs.gov/pub/irs-pdf/p15a.pdf.
61. A recent decision by the California Labor Commissioner determined that one of Uber's drivers was an employee and therefore eligible for reimbursement of over $4,000 in expenses. Interestingly, the driver did not furnish any information about the amount of payment she had received from Uber and, in turn, did not receive back wages. It is therefore impossible to tell whether her income while driving more than compensated for the expenses. Uber is also facing a class-action law suit from drivers who want to be classified as employees. Joel Rosenblatt, "Uber Judge Challenges Company's Arguments to Block Group Lawsuit," *Bloomberg Business*, August 6, 2015, http://www.bloomberg.com/news/articles/2015-08-06/uber-drivers-seeking-employee-status-propose-streamlining-suit. Recent news stories indicate that a second Uber driver has also been classified as an employee in California.

62. McKinsey Global Institute, *A Labor Market That Works: Connecting Talent With Opportunity in the Digital Age,* (June 2015), 7–8, http://www.mckinsey.com/~/media/McKinsey/dotcom/Insights/Employment%20and%20growth/Connecting%20talent%20with%20opportunity%20in%20the%20digital%20age/MGI%20Online%20talent_A_Labor_Market_That_Works_Full_report_June%202015.ashx.
63. McKinsey Global Institute, *Open Data: Unlocking Innovation and Performance with Liquid Information,* (October 2013), http://www.mckinsey.com/~/media/McKinsey/dotcom/Insights/Business%20Technology/Open%20data%20Unlocking%20innovation%20and%20performance%20with%20liquid%20information/MGI_Open_data_FullReport_Oct2013.ashx.
64. McKinsey Global Institute, *The Internet of Things: Mapping the Value Beyond the Hype,* (June 2015), 2, http://www.mckinsey.com/~/media/McKinsey/dotcom/Insights/Business%20Technology/Unlocking%20the%20potential%20of%20the%20Internet%20of%20Things/Unlocking_the_potential_of_the_Internet_of_Things_Full_report.ashx.

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