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# Lessons for Policymakers and Regulators on the (Predictable) Future of the Digital Economy

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# Lessons for Policymakers and Regulators on the (Predictable) Future of the Digital Economy

## Summary

The next stage in the evolution of the digital economy involves the creation of what can be called the “Internet of the World”—an expanding web of transactions, anticipated today by on-demand platforms such as Uber and Airbnb, that eventually will occur across trillions of networked devices and penetrate every sphere of human activity. This brief looks at the many legal questions raised by these novel services, in particular, at the regulatory classification of on-demand services, as well as the application of antitrust provisions, the imposition of taxes and fees, and the assignment of liability to these new platforms.

## Keywords

digital economy, regulation, internet of the world

## Disciplines

Computer Law | E-Commerce | Economic Policy | Public Policy

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# Lessons for Policymakers and Regulators on the (Predictable) Future of the Digital Economy

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Decades into the internet revolution, new business functions are still making their way online.

The next stage of the digital ecosystem will involve trillions of networked devices, across every industry and sphere of human activity. This phenomenon can be thought of as the “Internet of the World.” It can be seen in the intersection of three highly visible trends: The On-Demand Economy, the Internet of Things, and Big Data. Together they mark a global sea-change that will penetrate every sector of the economy (see Exhibit 1).

Companies taking advantage of these three interconnected trends are experiencing tremendous growth.<sup>1</sup> Roughly six years after it launched, Uber is the world’s most valuable private company, raising its latest funding round at a valuation of \$62.5 billion.<sup>2</sup> It now operates in over 300 cities worldwide and has over one million drivers in its network.<sup>3</sup> Airbnb is not far behind. Its valuation in its latest funding round is \$30 billion,<sup>4</sup> and it has grown to over one million rooms worldwide, more than traditional hotel chains such as Marriott and Hilton.<sup>5</sup> The potential scale of on-demand services is also much greater than the legacy industries they challenge. By changing the nature of the marketplace, on-demand services actually create new demand. And the impacts are not limited to the customer side. Millions of people around the

## SUMMARY

- The next stage in the evolution of the digital economy involves the creation of what can be called the “Internet of the World”—an expanding web of transactions, anticipated today by on-demand platforms such as Uber and Airbnb, that eventually will occur across trillions of networked devices and penetrate every sphere of human activity.
- These novel on-demand services are raising many thorny legal questions. This brief looks in particular at the regulatory classification of on-demand services, as well as the application of antitrust provisions, the imposition of taxes and fees, and the assignment of liability to these new platforms.
- These legal issues, however, are not novel. History suggests that regulators and business innovators will work together to address them as the Internet of the World continues to evolve. As observed in the early days of the commercial internet, leaders in the emerging digital economy will welcome further government engagement, which can serve business interests in many ways. And policymakers will embrace creative solutions that meet regulatory goals without imposing standards created for legacy industries that are ill-suited to new platforms.



world are becoming providers through these platforms, experiencing a new form of on-demand work.

Just as electronic commerce, online communications, and digital content distribution transformed markets beginning in the late 1990s, broadband and social networks in the early 2000s, and mobile services in the late 2000s, the Internet of the World will disrupt existing industries and create new ones, and in the process, will pose dramatic challenges for businesses, regulators, and policymakers. Early manifestations of this evolution are raising serious legal questions, involving regulatory classification, competition, taxation, consumer protection, and other controversies. Debates are raging over whether novel services such as Uber and Airbnb should be subject to rules designed for legacy industries. The stage seems set for a decisive battle between regulation and innovation. Yet this perspective is mistaken. It is rooted in a pervasive and persistent misunderstanding about a “digital dichotomy,” which views online transactions and connections as being fundamentally different from interactions in the “real world.” Consequently, the great innovative business success stories of the last two decades have involved waves of hype

## EXHIBIT 1: DEFINING FEATURES OF THE INTERNET OF THE WORLD

### On-Demand Economy Platforms

- Use software and networks to liberate and aggregate otherwise-independent spare labor or asset capacity
- Respond to consumer demand in real time, replicating the immediacy and rapid scalability of e-commerce services such as Netflix or iTunes
- Do not own the assets to which they offer access, but create virtual marketplaces using the internet and mobile devices (i.e., the software representation of the asset effectively becomes the asset)
- Dedicated to maximizing revenues and profits, despite sometimes being described as the Sharing Economy

### The Internet of Things (IoT)

- Involves network connectivity for devices other than personal computers, phones, and tablets
- Turns anything not traditionally a computing device into a network-aware source of data collection or manipulation<sup>6</sup>
- Aggregates individual devices into networked systems, which in turn can shape their actions
- Cisco predicts that by 2020, there will be 50 billion non-computing devices connected to the internet, many times the number of PCs and smartphones<sup>7</sup>

### Big Data Capabilities

- The assembly of massive data sets of information about people and the world, enabled by the emergence of cloud computing and networked data centers that can process vast amounts of data within the network
- The distillation and analysis of those data sets as a whole (i.e., instead of through the statistical method of sampling), thus allowing entire data sets to be run through computer-driven algorithms and generating predictive models that find patterns in networks of correlations

about unstoppable disruption alternating with periods of backlash over threats to long-established industries and well-functioning markets.

Ultimately, though, emerging

businesses will welcome government engagement, and regulatory actors will accept creative solutions to achieve their policy goals. We can expect such a resolution because the

## NOTES

- 1 PriceWaterhouseCoopers, *The Sharing Economy: How Will it Disrupt Your Business?* (August 2014), [http://pwc.blogs.com/files/sharing-economy-final\\_0814.pptx](http://pwc.blogs.com/files/sharing-economy-final_0814.pptx).
- 2 Alex Konrad, “Uber Raises \$3.5 Billion From Saudi Sovereign Wealth Fund, Keeps \$62.5 Billion Valuation,” *Forbes*, June 1, 2016, <http://www.forbes.com/sites/alexkonrad/2016/06/01/uber-raises-3-5-billion-from-saudi-sovereign-fund-at-62-5-billion-valuation/#2b3dc26c41d4>.
- 3 Luz Lazo, “Uber Turns 5, Reaches 1 Million Drivers and 300 Cities Worldwide. Now What?” *Washington Post*, June 4, 2015, <https://www.washingtonpost.com/news/>

[dr-gridlock/wp/2015/06/04/uber-turns-5-reaches-1-million-drivers-and-300-cities-worldwide-now-what/](http://dr-gridlock/wp/2015/06/04/uber-turns-5-reaches-1-million-drivers-and-300-cities-worldwide-now-what/).

- 4 “Airbnb’s Funding Round Led by Google Capital,” *Wall Street Journal*, September 22, 2016, <http://www.wsj.com/articles/airbnb-raises-850-million-at-30-billion-valuation-1474569670>.
- 5 Julie Weed, “Airbnb Grows to a Million Rooms, and Hotel Rivals Are Quiet, for Now,” *New York Times*, May 11, 2015, <http://www.nytimes.com/2015/05/12/business/airbnb-grows-to-a-million-rooms-and-hotel-rivals-are-quiet-for-now.html>.

- 6 In the case of Uber and Airbnb, the “things” are not directly connected as with networked sensors; a smartphone or tablet serves as the interface that links the physical asset into the network, with a human in between. From the user’s standpoint, however, this distinction is immaterial.
- 7 Dave Evans, *The Internet of Things: How the Next Evolution of the Internet Is Changing Everything*, Cisco White Paper (April 2011), [http://www.cisco.com/c/dam/en\\_us/about/ac79/docs/innov/IoT\\_IBSG\\_0411FINAL.pdf](http://www.cisco.com/c/dam/en_us/about/ac79/docs/innov/IoT_IBSG_0411FINAL.pdf).
- 8 Brett M. Frischmann and Barbara van Schewick, “Network Neutrality and the Economics of an Information Super-





exact same story played out twenty years ago, in the early days of the commercial internet.

## CYBER HISTORY AS A GUIDE

Twenty years ago, a wave of start-ups such as Netscape, eBay, Yahoo!, Amazon burst on the scene with hyperbolic growth rates, generating dramatic impacts on established industries. Legal and regulatory controversies ensued. The debates followed a common pattern: oscillation between calls for self-regulation or unregulation, on the one hand, and clumsy efforts to impose excessive regulation, on the other, eventually giving way to accommodations in which government played more of a convening, legitimizing, and enforcement role than a rule-setter. Historical examples of internet businesses and policymakers recognizing government's potentially constructive role in the digital economy include the Microsoft antitrust case, the Internet Tax Freedom Act (ITFA), and the push for network neutrality rules against discrimination by broadband access providers.<sup>8</sup>

Policymakers and regulators would do well to remember that government engagement with innovative markets

and industries can serve a number of positive goals. These include:

- Legitimizing new business models
- Facilitating competition in cases of market failure
- Increasing trust in new services by setting baselines and remedies
- Restraining other government actors from harmful decisions
- Eliminating situations in which vague or overlapping obligations create difficulties for new entrants.

Government can also take an affirmative stand in favor of innovation or new entrants, such as by delaying the imposition of particular industry requirements or imposing limitations on established firms that might crush newcomers. In the last few years, as the On-Demand Economy has evolved, controversies have arisen about the legality of on-demand services under local and state laws; responsibility for taxes and fees; data privacy; consumer protection requirements; compliance with the Americans with Disabilities Act; anti-competitive practices; discrimination; and the legal status of workers. The next section of this brief will take a closer look at these different controversies, and place them into context with similar debates that erupted earlier in the dotcom era.

## NEW ENTERPRISES, OLD PROBLEMS, AND CREATIVE COMPROMISES

Predictably, the initial position of on-demand and other startups is that they cannot and should not be subject to legacy regulations, and therefore should be left to regulate themselves. Equally unsurprising is the contrary movement urging that the on-demand providers be barred from operating unless they meet the requirements of existing regulations. Neither option is tenable. Fortunately, the dotcom era startups of the 1990s and those of today's Internet of the World face similar policy challenges, which are playing out in a familiar pattern.

### REGULATORY CLASSIFICATION

The first and most prominent issue concerns how to classify new services that do not easily fit into available legal categories. Today, Uber's business model of entering markets without legal authorization is most directly analogous to peer-to-peer startups like Skype. Of the 276 cities in which Uber operated at the end of 2014, only 17 had passed ordinances expressly authorizing its business.<sup>9</sup> In most major cities around the world, for-hire transportation service can

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highway: A Reply to Professor Yoo," *Jurimetrics Journal* 47 (2007), 383, 384–89.

<sup>8</sup> Eva Grantsimran Khosla, "Here's Everywhere Uber is Banned Around the World," *Business Insider*, April 8, 2015, <http://www.businessinsider.com/heres-everywhere-uber-is-banned-around-the-world-2015-4>.

<sup>10</sup> There appears to be a contrast to the parallel dotcom era startups, namely that many of the rules governing on-demand service providers are local instead of national or global, but the basic controversies cover similar ground. The ultimate equilibrium for services such as Uber is likely

to involve similar treatment in all major cities.

<sup>11</sup> Mike Isaac, "Airbnb Pledges to Work With Cities and Pay 'Fair Share' of Taxes," *New York Times*, November 11, 2015, <http://www.nytimes.com/2015/11/12/technology/airbnb-pledges-to-work-with-cities-and-pay-fair-share-of-taxes.html>.

<sup>12</sup> Felix Barber, "How Do We Fight 21st Century Monopolies like Amazon, Google and Uber?" *Upstart Business Journal*, December 11, 2014, <http://upstart.bizjournals.com/resources/author/2014/12/11/fight-21st-century-monopolies-like-amazon-uber.html?page=all>.

<sup>13</sup> Matthew Stoller, "Uber's Algorithmic Monopoly, Observations on Credit and Surveillance," April 9, 2014, <http://mattstoller.tumblr.com/post/82233202309/ubers-algorithmic-monopoly-we-are-not-setting>.

<sup>14</sup> Ilen P. Grunes and Maurice E. Stucke, "No Mistake About It: The Important Role of Antitrust in the Era of Big Data," *The Antitrust Source* (April 2015), [http://www.americanbar.org/content/dam/aba/publishing/antitrust\\_source/apr15\\_grunes\\_4\\_22f.authcheckdam.pdf](http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/apr15_grunes_4_22f.authcheckdam.pdf). See also Anja Lambrecht and Catherine E. Tucker, *Can Big Data Protect a Firm from Competition?* (Working Paper, December 18,



only be provided by licensed taxis or licensed livery services. Uber, which views itself as a software application that matches independent drivers and riders, fits neither category well. Accordingly, the company has waged an aggressive campaign against localities refusing to authorize its business.<sup>10</sup>

The key for Skype was that regulators were convinced the company actually promoted public policy goals and that necessary obligations could be enforced without forcing the company into legacy regulatory classifications. Major on-demand platforms have begun to advocate for a similar approach, focusing on targeted initiatives to address recognized problems. For example, Airbnb in November 2015 issued a “Community Compact” detailing affirmative steps it would take to work with regulators on acknowledged issues.<sup>11</sup>

The process has gone farthest in the ride-hailing market. At least 29 states have adopted laws defining and regulating “transportation network companies” (TNCs), with legislation under consideration in several others. These laws provide an opportunity to ensure that the public policy goals of traditional regulations are achieved, even when the business model

changes. They recognize that a choice between ill-fitting legacy rules and no rules at all is not a good outcome.

### COMPETITION

Even the most mature on-demand markets are still young and fast-changing, so antitrust authorities have been hesitant to intervene, but over time, concerns over competition may escalate. Uber, because of its hyperbolic growth and dominance in ride-hailing markets, has already been subject to attacks as a monopolist after just six years in business.<sup>12</sup> A counter-argument to accusations of monopolistic behavior is that on-demand markets have little in the way of entry barriers from a technical standpoint. As a result, there is reason to believe market discipline will self-correct for anti-competitive practices. This perspective, however, fails to take into account novel concerns that arise in an environment where physical assets and even people can be treated as information and manipulated through software driven by big data analytics. Today’s on-demand and IoT services are based on software algorithms driven by significant volumes of real-time data. The data itself potentially becomes the foundation for what have been called “algorithmic monop-

lies.”<sup>13</sup> The more data a service has, the better the quality of its decisions.

Just as the Microsoft antitrust case forced an examination of the growing importance of personal computer software to existing and developing industries, on-demand services will bring algorithmic competition policy questions to the fore. Even when there are no entry barriers in the conventional sense, a dominant player with control over data may have an insurmountable edge over potential competitors.<sup>14</sup> In the case of Uber, the market “is” whatever Uber’s algorithms say it is. The software controls not only the price, but the timing and boundaries of its so-called surge pricing, as well as what information is provided to drivers and when. It is impossible to know from mere observation whether algorithms are being used in anti-competitive or discriminatory ways.<sup>15</sup>

Another concern involves the possibility that these decision-making algorithms can cooperate with one another to engage in price fixing. Such “algorithmic cartels” may develop even without explicit instructions from the service providers, because they represent the efficient solution to maximize each firm’s profits.<sup>16</sup> In an on-demand world, more and more resources that were previ-

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2015), available at [http://ec.europa.eu/information\\_society/newsroom/image/document/2016-6/computer\\_and\\_communications\\_industry\\_association\\_-\\_can\\_big\\_data\\_protect\\_a\\_firm\\_from\\_competition\\_13846.pdf](http://ec.europa.eu/information_society/newsroom/image/document/2016-6/computer_and_communications_industry_association_-_can_big_data_protect_a_firm_from_competition_13846.pdf).

<sup>15</sup> The Federal Trade Commission has formed a new Office of Technology Research and Investigation, which among other things has a mandate to examine algorithmic transparency.

<sup>16</sup> Jill Priluck, “When Bots Collude,” *New Yorker*, April 25, 2015, <http://www.newyorker.com/business/currency/when-bots-collude>; Ariel Ezrachi and Maurice E. Stucke,

*Artificial Intelligence & Collusion: When Computers Inhibit Competition*, (University of Tennessee Legal Studies Research Paper No. 267), [papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2591874](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2591874).

<sup>17</sup> Kevin Werbach, “Is Uber a Common Carrier?” *I/S: A Journal of Law and Policy for the Information Society* 12 (2016).

<sup>18</sup> Christina Le, “The Honeymoon’s Over: States Crack Down On the Virtual World’s Tax-Free Love Affair with E-Commerce,” *Houston Business and Tax Law Journal* 7 (2007), 395.

<sup>19</sup> Joyce E. Cutler, “Cities Grappling with Challenges of How

to Tax, Regulate Short-Term Rentals,” *Bloomberg BNA Daily Tax Report*, October 21, 2014, <http://www.bna.com/cities-grappling-challenges-n17179897258/>.

<sup>20</sup> Phillip Matier and Andrew Ross, “Airbnb Pays Tax Bill of ‘Tens of Millions’ to S.F.,” *SFGate*, February 18, 2015, <http://www.sfgate.com/bayarea/matier-ross/article/M-R-Airbnb-pays-tens-of-millions-in-back-6087802.php>.

<sup>21</sup> *Ibid.*

<sup>22</sup> Now that the company is well established and dominant in its market, the displacement effects for both hosts and guests are likely to be limited.



ously subject to fixed prices or delivered by traditional service providers will be available through dynamically created algorithmic marketplaces.

Finally, as the Internet of the World develops, on-demand services will become more foundational for commerce and communities. Certain competitive tactics that are otherwise legitimate may need to be curtailed for firms that enjoy the benefits of controlling essential services, in a manner akin to utility regulation.<sup>17</sup>

### TAXATION AND FEES

The growth of the On-Demand Economy raises two kinds of tax issues. The first involves collection of personal taxes from workers providing on-demand services, such as Uber drivers, but these tax issues generally can be resolved by reference to existing rules. In contrast, questions about the responsibility of the on-demand platforms themselves to remit taxes and fees leads to thornier issues, as such questions raise issues of equity with pre-existing providers, and, as with the sales taxation issues for e-commerce, drains funding from local and state governments. The debates over taxation and fees for on-demand services began as classic conflicts between governments seeking to

impose obligations and new companies, such as Amazon, seeking to avoid them. But as the history of sales taxes for e-commerce shows, complications can eventually be resolved in a manner that does not overly disadvantage innovative new market entrants.<sup>18</sup>

The On-Demand Economy company most directly confronting taxation is Airbnb. The company has tussled with cities over proper tax arrangements.<sup>19</sup> Most major American cities impose a tax, in some cases a substantial one (14% in San Francisco, for example), on hotel rooms. Because Airbnb styles itself as a passive intermediary, it originally declined to add these local taxes to the rates that its hosts charged to their guests. From cities' viewpoint, however, this was a clear evasion of taxes by a direct competitor to traditional hotels. Nationwide, Airbnb was estimated to owe as much as \$200 million.<sup>20</sup>

Fairly quickly, there has been a significant shift. In February 2015, Airbnb paid an estimated \$25 million in back taxes to the city of San Francisco.<sup>21</sup> It is negotiating with several cities about arrangements that would require it to collect hotel taxes from its hosts.<sup>22</sup> It is important to emphasize that the company wants these arrangements because they come with

explicit authorization for Airbnb's short-term rentals, which otherwise would violate current regulations in many jurisdictions. Through compromise, both sides actually win.

### PLATFORM RESPONSIBILITY

According to Uber, the company serves as a directory for matching drivers with riders. But the argument that it is essentially a souped-up phone book flies in the face of reality. The On-Demand Economy depends on trust, and consumers trust the platform, not the individual providers. There have been many questions about what is needed to ensure against harmful conduct by individuals on an on-demand platform. And as a practical matter, individual providers of on-demand services may not have the resources to fully compensate users for injuries. Therefore, neither regulators nor consumers have been satisfied that on-demand platforms can shift liability to providers in their networks.

The Internet of the World dramatically alters the dimension that traditionally distinguishes employees from independent contractors (i.e., how on-demand providers are classified today): control. A new legal category of employment with elements

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<sup>23</sup> Robert Sprague, "Worker (Mis)Classification in the Sharing Economy: Square Pegs Trying to Fit in Round Holes," *ABA Journal of Labor and Employment Law*, forthcoming.  
<sup>24</sup> Airbnb has asserted that it falls within the Section 230 safe harbor, although this claim has not been tested.  
<sup>25</sup> Molly Cohen and Arun Sundararajan, "Self-Regulation and Innovation in the Peer-to-Peer Sharing Economy," *Dialogue: The University of Chicago Law Review* 82 (2015), 116; see also Emily Badger, "What Happens When Uber and Airbnb Become their Own Regulators," *Washington Post WonkBlog*, February 4, 2015, <https://www.washing->

[tonpost.com/news/wonk/wp/2015/02/04/what-happens-when-uber-and-airbnb-become-their-own-regulators](https://www.washingtonpost.com/news/wonk/wp/2015/02/04/what-happens-when-uber-and-airbnb-become-their-own-regulators).  
<sup>26</sup> Lawrence Lessig, "The Law of the Horse: What Cyberlaw Might Teach," 113 *Harvard Law Review* 113 (1999), 501.  
<sup>27</sup> Nick Grossman, "Regulation, the Internet Way: A Data-First Model for Establishing Trust, Safety, and Security," *Data-Smart City Solutions*, April 8, 2015, <http://datasmart.ash.harvard.edu/news/article/white-paper-regulation-the-internet-way-660>.  
<sup>28</sup> Nick Grossman, "Here's the Solution to the Uber and Airbnb Problems—and No One Will Like It," *The Slow Hunch*, July

23, 2015, <http://www.nickgrossman.is/2015/07/23/heres-the-solution-to-the-uber-and-airbnb-problems-and-no-one-will-like-it/>.



of both employees and independent contractors may ultimately be needed.<sup>23</sup>

Regardless of how the labor classification is resolved, the broader issue concerns the level of responsibility that should inure to these new kinds of platforms. When something goes wrong on an on-demand platform, it is no longer a question of design or manufacturing flaws in individual products. Software vendors such as Microsoft have successfully avoided liability for defects and security flaws, based on contractual disclaimers and limitations on liability, but the Internet of the World potentially turns everything into a software system.

Since 1996, the “safe harbor” regime of Section 230 of Title 47 of the U.S. Code (passed as part of the Communications Decency Act) has been a significant protector of online intermediaries against a host of legal claims based on the actions of their users. It protects internet service providers and all manner of online content and application services, but it does not cover services delivered in the physical world.<sup>24</sup> A clear concern for policymakers, therefore, is how to construct a safe harbor regime for the new generation of platforms while still protecting consumers. On-demand companies may be the only entities capable of taking effective enforcement actions against those who cause injuries, and they may be the only actors with sufficient resources to compensate the injured. However, excessive liability risk can prevent valuable services from being offered or it can create perverse incentives. Law exists, in the first place, to protect certain values, but it undoubtedly shapes

business models as much as it allocates responsibilities for compensation.

### **DIGITAL CODE AND DATA AS ALTERNATIVES TO DIRECT REGULATION**

The imminent collapse of the digital dichotomy undermines the arguments for new institutions specially designed to encompass online activity. Both in the dotcom era and more recently, established governance and regulatory mechanisms have proven sufficiently adaptable to address new issues raised by innovative, fast-growing startups. The need for new flexibility and new regulation should not be equated with the inherent superiority of new legal institutions. Existing regulators, such as local taxi commissions, may be obstinate and captured by incumbents, but they are subject to procedural protections and political influences that may correct for such flaws. The way that Uber and Airbnb have gradually reached accommodations through local negotiations and state preemptive legislation suggests these factors can be influential when the startups are willing to come to the table.

An alternative approach to new direct regulation would be to enable private governance activity under the umbrella of public regulatory oversight. There are several variants of self-regulation, co-regulation, and delegated regulation that would free private actors from the inefficiencies of direct government mandates (e.g., restrictive licensing and verification procedures) while still ensuring that public interest obligations (e.g., rider or occupant safety and consumer protection) are met.<sup>25</sup> In particular

cases, software code might be more or less desirable than legal code in regulating behavior. Uber’s reputation rankings, for example, may produce better results at preventing invidious discrimination than established legal regimes do. With both digital code and the legal code at the disposal of policymakers, the question becomes: which mode of regulation is most transparent and least subject to overreach?<sup>26</sup>

One way to strike this balance may be a new regulatory paradigm that shifts from ex ante permission to ex post data-driven accountability.<sup>27</sup> On-demand companies could be exempted from certain regulations if they provide a real-time data feed and the opportunity for regulators to audit their behavior, demonstrating their compliance with public policy mandates.<sup>28</sup> Uber and Airbnb initially resisted requests for granular data that could assist regulators. Yet they have begun to recognize that voluntary disclosure may be superior to (and potentially could head off) direct regulation. Notably, data-sharing alone is not a complete solution to the range of legal issues the Internet of the World generates. Its effectiveness should be judged in each context based on its ability to achieve well-articulated public interest objectives. The general point is that there are more options than new companies simply ignoring regulation and regulators blocking their operations. Both sides of that debate are under the illusion of the digital dichotomy.





## CONCLUSION

The emerging Internet of the World represents the final destruction of artificial divisions between real and virtual. Physical entities are becoming extensions or information feeds for digital processors. Many of the advantages previously reserved for digital goods such as iTunes songs or Netflix movies are now available to physical goods and local services provided by humans. At some point, there is virtually no asset in a growing number of

categories that cannot be delivered on demand through digital systems.

Policymakers and regulators who think they can apply old rules to new platforms will encounter both legal and practical difficulties. Just as in the dotcom era, the policy debate has become a fight over whether new enterprises should be regulated under the old regime or left unregulated, despite the problems of such artificially sharp divisions. The oft-repeated mantra that law and regulation move more slowly than technology should

not be the end of the discussion. The celebration of innovation also should not obscure that law exists to protect core societal values precisely because values generally do not change. Between ill-fitting legacy regulations and none at all, targeted compromise facilitated by the eager participation of a proactive government is the best strategy for navigating the controversies produced by the Internet of the World. Indeed, recent history could not be clearer on this point.



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Kevin Werbach is a leading expert on the business, policy, and social implications of emerging Internet and communications technologies. In addition to being on faculty at the Wharton School of the University of Pennsylvania, he also is the founder of the Supernova Group, a technology analysis and consulting firm. He advises companies, writes about emerging trends in communications and information technology, and organizes Supernova, a major annual executive technology conference. He co-led the review of the Federal Communications Commission for the Obama-Biden Transition Project.

Werbach is the former editor of Release 1.0, a renowned industry publication that provided leading-edge analysis of key technology trends for senior executives. Working with technology guru Esther Dyson, he co-organized the annual PC Forum conference. During the Clinton Administration, he served as Counsel for New Technology Policy at the FCC. Called “one of the few policy wonks who really got it” by Wired, he helped develop the United States Government’s e-commerce policy, shaped the FCC’s approach to

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A sought-after speaker and commentator, Werbach appears frequently in print and broadcast media including CNN, CNBC, NPR, ABC News, *USA Today*, *The New York Times*, *The Wall Street Journal*, *The News Hour with Jim Lehrer*, *Nightly Business Report*, and *The Washington Post*. His writing has appeared in *Harvard Business Review*, *Fortune*, *Wired*, *The Industry Standard*, *The Philadelphia Inquirer*, *Harvard Law Review*, *Slate*, and *Business 2.0*, among other publications. Werbach is a fellow of the Center for Global Communications (GLOCOM) in Japan, a member of the International Editorial Board of *I/S: A Journal of Law and Policy for the Information Society*, and an advisory board member for Socialtext, Knowledge@Wharton, and Public Knowledge. He served as an expert advisor the FCC and the National Telecommunications & Information Administration (NTIA) in 2008-09, and still provides occasional consulting services to the FCC.

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