



# TECH REG: RULES FOR THE DIGITAL ECONOMY



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Tech Reg refers to the regulation of internet-connected digital businesses and the discipline that studies the when, and how, to do that. It covers areas as diverse as big tech, crypto, fintech, gig, misinformation, privacy, and telemedicine. It will expand over the coming decades as the digital transformation sweeps through the economy, leading to disruptive innovation, much unforeseen, and causing fundamental changes in the physical economy. The transformation will, as it already has, raise questions as to whether we need new laws and regulations, should modify existing ones, or do nothing at all. Tech Reg can build on an extensive body of economics and experience on the role and design of regulation but will face new problems. This paper provides a brief overview covering the implications of the digital transformation, the basic economics of regulation, principles for applying Tech Reg, and application to few interesting topics.

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# 01

## INTRODUCTION

The digital transformation of the economy will lead to consideration of changes in regulation and already has. That could involve new regulations, modifications of existing ones, or nothing at all. This paper is about “Tech Reg” which covers several related concepts: the actual regulation of the digital economy, the analysis of regulatory alternatives, and the discipline for studying both. It introduces the subject, explains its importance, and highlights some key issues.

The following discussion is based on three premises. First, the digital transformation, which started almost 30 years ago will continue to play out, at varying paces across sectors, over many decades. New issues will keep arising. Second, general principles, informed by economic, legal, and other scholarship, can help guide the laws and regulations for the emerging digital economy. An existing body of knowledge concerning regulation can provide part of the foundation for doing so. Third, there is much to be learned from considering how regulatory approaches have worked, or not, across different tech areas and times. Scholars and policymakers should avoid treating Tech regulation in silos.

The paper is organized as follows. Section II describes the digital transformation and explains why it will take place over a long period of time, at different paces across different sectors, with new issues arising. Section III provides a reminder that there is already a substantial body of economic learning on regulation that can provide insights into how to address new concerns. Section IV turns to some general principles for considering regulation that apply across the set of issues faced with the digital transformation. Section V illustrates the application of these principles to diverse areas in which there has been active debate over the scope of regulation. Section VI concludes briefly.

omy resulting from the integration of internet-based technologies. It began with the launch of the commercial internet in the mid 1990s. As with most general-purpose technologies the commercial internet, combined with other innovations, has gradually changed the economy overall through disruptive and incremental innovation, creating new products and services, and the reinvention of old ways of doing things.

Almost every point of physical space now has internet connectivity because of the spread of mobile broadband, with exponentially rising speeds, through most of the populated areas of the world. That, along with faster and more pervasive fixed broadband, has resulted in almost everyone almost always having access to powerful computers, software, and other technologies. Through the internet everyone, and all points of physical space, have the ability connect with everyone else. Smartphones and mobile apps, and increasingly voice-activated devices, provide access, along with personal computers.<sup>1</sup>

These technologies make new ways of doing things possible. Fast grocery delivery is enabled through the interconnection, in real time, of the store, customer, shopper, and driver. Telemedicine is aided through linking the doctor, patient, medical records, and diagnostic apps.

Connected cars get software updates through mobile broadband and services provided in the cloud.

While much has happened since the launch of the commercial internet, and change seems rapid for those who have lived through the last three decades, it is apparent that these are still early days. Some areas seem far along such as search, social, and to a lesser extent e-commerce. Others are just catching on after more than a decade of gestation such as ride sharing, grocery delivery, and telemedicine. There are many new areas whose promise is unknown such as the metaverse, and decentralized finance. Then there are all the ones we don't know about or haven't even been thought of. The pandemic has sped the transformation up by forcing people to try digital solutions and overcoming inertia.

The digital transformation will likely take many decades to work its way through the economy. After a quarter century e-commerce accounts for only 13 percent of retail sales in the U.S. and less in many highly developed countries.<sup>2</sup> It will take time for startups to seize opportunities in new areas and time for new innovations to reach fruition. As with other general-purpose technologies, such as electricity or the combustion engine, the full effects of the digital transformation will occur over many more decades.

# 02

## THE DIGITAL TRANSFORMATION

The digital transformation refers to changes in the production and distribution of goods and services throughout the econ-

1 For a survey of the penetration of smartphones and the app ecosystem see, Evans, David S., Chang, Howard H. & Joyce, Steven, What Caused the Smartphone Revolution? (September 17, 2019). Available at SSRN: <https://ssrn.com/abstract=3455247> or <http://dx.doi.org/10.2139/ssrn.3455247>.

2 Based on U.S. Census Bureau data the online share of retail sales was 13.0 percent for the third quarter of 2021. See <https://fred.stlouisfed.org/series/ECOMPCTSA>.

Almost since its inception the digital transformation has posed novel questions concerning whether the laws and regulations for the traditional economy are right for the digital one. The U.S., adopted new laws in 1996 that shielded internet providers from liability under existing laws for third-party content on their sites.<sup>3</sup> More recently various parties have raised concerns about the application of employment laws to gig economy platforms, banking regulation to cryptocurrency, and antitrust laws to large digital platforms. One can point to specific features of current digital businesses that prompt these concerns such as the importance of data or the role of network effects.

Taking a longer view, however, the combination of new business models, facilitated by a global point-to-point communication system, and new technologies — some likely completely unforeseen today — will lead to continual efforts to adjust laws and regulations. The proposals under consideration will run the gamut from suspending laws and regulations that throw sands in the wheel of progress, to developing entirely new ones to deal with serious novel problems.

Regulation, of course, is hardly new.

# 03

## ECONOMICS OF REGULATION

The regulation of economic life in traditional market economies is pervasive. To begin with, there are laws governing property, contracts, and others. There are the myriad regulations ranging from building codes and zoning rules, to consumer protection, to employment, to various industry-specific ones. Every developed economy and many developing ones have competition laws and regulations. Generally, these sorts of laws and regulations are socially beneficially and aren't controversial. There are exceptions, though, involving ill-suited or badly designed regulations, or other problems, which naturally get a disproportionate amount of attention. There aren't really serious questions above whether we should have laws and regulations for the economy, but mainly over when and what.

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“Almost since its inception the digital transformation has posed novel questions concerning whether the laws and regulations for the traditional economy are right for the digital one

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Fortunately, there is a great deal of economic learning and experience on when and how to regulate and the pitfalls in doing so and what to watch out for.<sup>4</sup> There is a rich normative theory dating back at least a century to Pigou on when and why regulation is needed. The Chicago School, particularly the work by Stigler, provided the foundation for a positive theory of regulation and the role of the political process. By focusing attention on why regulation has failed, it helped prod economists to figure how to do it better. Economists in the last half century have developed diverse helpful tools for designing efficient market regulation. Work by Schleifer and others have shown the key role laws and regulations play in economic development.

The basic economics are well developed. Left to their own devices, markets can fail for a variety of reasons. These include externalities (such as pollution, buildings catching fire, or bank runs); appropriability and public goods (such as intellectual property and natural resources); imperfect information (such as product safety and truth-in-lending); and monopoly power (resulting from mergers or anticompetitive practices). There may be government interventions that could eliminate or temper these failures. That includes laws and courts; rules and regulators, self-regulation such as standards setting organizations; and government ownership and provision. Cost-benefit analysis can help assess the best intervention and whether it feasible to improve matters. Lastly there are well-recognized risks. These include bad design, industry capture, subversion of regulation, and unintended consequences from intervening or not resulting from imperfect information and imperfect policymakers.

There is a great deal of practical experience with laws and regulation for the traditional economy. Laws that cover economic life are millennia old. Over time, regulations have been imposed and perfected for banking and related financial services and various industries including ones based on physical networks and natural resources. There are broad regulations for consumer protection and labor markets. And there are extensive regulations for local communities. There is also much experience with deregulating or privatizing industries based on the belief that market-based solutions would be superior to existing regulations.

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3 See Jeff Kosseff, *The Twenty-Six Words that Created the Internet* (Ithaca, NY: Cornell University Press, 2019).

4 For a general survey of the economics of regulation, and its application across industries, see Viscusi, W. Kip, Joseph E. Harrington, Jr. & David E. M. Sappington, *Economics of Regulation and Antitrust*, 5th ed., (Cambridge, MA: MIT Press, 2018).

Thus, there is a solid foundation for analyzing laws and regulations for the digital economy. Novel issues may arise for the digital economy, requiring new theories and tools. It will be necessary to customize learnings from the traditional for the digital one.

The digital transformation presents many new questions to which to apply this body of work and build upon it.

# 04

## REGULATION AND THE DIGITAL TRANSFORMATION

As the digital transformation sweeps the traditional economy, things will change, and governments will face decisions of what do — including nothing — and those decisions could well evolve as things develop. Here is a simple list of difficult choices:

- **No Regs, No Need.** There may be no reason to do anything whatsoever. That is the default position for market economies. We generally rely on markets and intervene only with good cause. Digital businesses may engage in practices that are novel but do not raise any apparent concerns and should just be left alone.
- **Old Regs for New Bodies.** There are existing laws and regulations that are sensible: regardless of whether applied to an old, boring, traditional business or a new, sexy, digital one. In many cases — for example workplace safety regulations or contract law — it is obvious that well-trod law and regulations should apply. This category is not so simple, though, when laws and regulations specifically apply to traditional businesses (such as employment regulations) that do not clearly apply to new ones (such as gig economy ones).
- **Old Regs, But Let's Wait and See.** Experience has taught us that, whatever their merits, regulations are costly for firms to comply with and can impede innovation. Imposing regulations that make sense for mature traditional businesses and new entrepreneurial ones runs the risk of choking off innovation. One solution, particularly when new ones don't account for much economic activity, is to wait and see how things develop, which is largely how the United Kingdom is dealing with the regulation of all digital neo-banks. This approach is similar to regulatory tiering approaches that

exempt smaller businesses from regulations that are disproportionately onerous on them.

- **Old Regs, But Don't Fit.** Regulations that made sense, at one time, for traditional businesses may not be sensible interventions for digital ones. Digital ones could have some special characteristics that render regulation unnecessary. That was the argument for treating digital platforms for third-party content differently than traditional media companies when it came to the enforcement of libel and intellectual property laws. Or the regulations themselves are no longer needed perhaps because of competition from digital businesses. They should therefore be suspended for both traditional and digital businesses. That possibility has been raised for certain taxi and ride-sharing regulations in some cities.
- **New Regs for New Problems.** The digital transformation can result in new market failures that either lack analogues in the traditional economy or magnify problems that, while present in traditional economy, don't merit intervention. This is likely to become a major focus on Tech regulation in the decades to come as new technologies, business models, and who knows what come into being. Recent concerns over the viral dissemination of misinformation illustrates the issue. Misinformation is hardly new: it is spread through traditional media, and by friends and family connected through traditional communication channels. The concern is that digital social networks are far more powerful in spreading harmful misinformation than traditional mechanisms.
- **Private Regs for New or Old Problems.** So far, a key difference between the digital and physical economy is the prominence of platforms that have their own “laws and regulations” for their communities. They have incentives to address problems — from breach of contract to hate speech — that reduce the value of the platform to those participants overall and thereby the platform's profits. Private regulation may limit the scope for public regulation. It could also raise issues concerning the proper locus (private vs. public) of some forms of regulation, such as of speech.<sup>5</sup>

# 05

## Tech Reg

Tech Reg is a vast, rapidly growing, area. Many jurisdictions are looking intensely at new laws and regulations. There is

<sup>5</sup> See, Evans, David S., “Deterring Bad Behavior on Digital Platforms,” in Evans, David S, Allen Fels, & Catherine Tucker, *The Evolution of Antitrust in the Digital Era: Essays on Competition Policy* (Boston: Competition Policy International, 2020). SSRN: <https://ssrn.com/abstract=3455384> or <http://dx.doi.org/10.2139/ssrn.3455384>.



a burgeoning scholarly literature on specific topics. The following highlights issues that have come up to provide a flavor of what's to come. It isn't intended to advocate for any particular regulation, just to provoke thinking.

**Stablecoins and DeFi.** Stablecoins are cryptocurrencies that are typically pegged to a fiat currency such as the dollar or euro. They therefore avoid the wild swings of bitcoin and other crypto currencies. Stablecoins are issued by a private entity that essentially acts like a central bank: it injects the currency into the system. These entities operate as both the stablecoin issuer and its distribution platform. That model is different from the traditional two-party banking system everywhere in the world.

One of the use cases for stablecoin is to further decentralized finance ("DeFi"). DeFi typically involves a permissionless software-based platform in which participants, such as lenders and borrowers, interact directly rather than through an intermediary. The platform may be self-governed including through the distribution of voting rights. Practically, though, no one is in charge. According to stablecoin advocates, it is the code and the decentralized, immutable, and transparent nature of the blockchain network that creates trust in the system.

Traditional banking and finance are heavily regulated in most countries. Among the reasons for that is there are externalities between entities who have interconnected lending and borrowing. That can result in bank runs — where depositors and the banks themselves lose confidence in the system — that then threatens overall financial stability. Central Banks also use monetary policy for managing the economy to increase employment and production and to limit inflation; that depends on their control over the amount of fiat currency in circulation. Consumer finance is often regulated to ensure that consumers understand the costs and risks they bear when they, for example, borrow money.

DeFi, according to its proponents, eliminates the need for intermediaries, such as large commercial banks, who impose costs; and makes banking and finance available to poor people particularly in developing countries; and promotes innovation. That could be: there are some early promising efforts involving financial inclusion in lesser developed countries and cross border remittances. Or not: unregulated DeFi and stablecoins could enable just the sort of financial weapons of mass destruction that risk sinking the global economy into a severe financial crisis.

Central Banks, and financial regulators, are worried. One school of thinking is that stablecoins are just the latest example of private money, which have led to problems in the past. Some regulators are at least requiring that stablecoin issuers back them one-for-one with the underlying fiat current to protect consumers and limit the crypto version of bank runs. DeFi is concerning for another reason: we know

that bank regulation is needed to ensure financial stability, but it is not clear that it is even possible to regulate decentralized software platforms: there's no one in charge, or an owner, to regulate. Since the Great Recession, experts in financial regulation have grown highly skeptical of claims that "this time is different."

The interaction of regulators and entrepreneurs in this area may lead to regulation that ensures the public interest while allowing some version of stablecoins and DeFi to operate. Stablecoins and DeFi may simply take off and be beyond the ability of regulators to address. Or Central Banks and others may effectively shut both down.<sup>6</sup>

**Ride Sharing.** Developed countries typically have employment laws and regulations to protect workers. They may have been adopted because of a belief that employers have too much bargaining power or for equity reasons. The rules don't typically protect small businesses that do jobs for big businesses or independent contractors, including freelancers, who work for a company outside of an employment contract. The distinctions between these categories can be hazy and employers may try to exploit that to evade worker protection laws and taxes. In the U.S., at least, there are a variety of laws and regulations that help determine which side of the employee-or-not line an individual is.

There has been a lot of discussion of how these employment laws should apply to ride-sharing platforms which use the internet and software technologies to connect drivers and riders. One can address this question by simply applying existing legal and regulatory frameworks to drivers and determine which side of the line they fall. That would make sense if there was nothing fundamentally different about the role of drivers for these platforms.

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The disruptive innovation behind ride-sharing companies involves matching people who have small amounts of time available and unused capacity in their cars (drivers) with other people who could want rides (riders) at particular moments in particular places. The platforms can provide a valuable service to drivers and riders if they can create a sufficient density of drivers and riders in time and space. The innovation was founded on the pervasive penetration of physical space with internet-connected smartphones. The same concepts

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<sup>6</sup> For a survey of some of the issues see Duffie, Darrell, Raghuram Rajan, Kenneth Rogoff, Hyun Song Shinn, and Working Group Digital G30 on Currencies. 2020. "Digital Currencies and Stablecoins: Risks, Opportunities and Challenges Ahead."

apply to other platforms that match people who can supply services with people want those services on demand.

Existing employment laws and regulations may not fit ride-sharing platforms because the relationship between the driver and business is different than those considered in the analog economy. Applying these laws and regulations could jeopardize the ability of these platforms to create the dense network of drivers and riders than provide the core value. Old rules don't fit. That does not, however, necessarily mean there is no basis for regulation. It is possible that new ways in which people provide services to companies could require modifications to existing laws and regulations but in ways that do not risk the value that platforms bring drivers and riders, and overall economic efficiency. Maybe new regs for new problems.

**Telemedicine.** Telemedicine is in its early years. It enables medical professionals to help patients through virtual visits. In principle, the doctor and patients could be anywhere. The provision of medical services could be helped by the distribution of internet-connected diagnostic equipment. It is also possible to conduct robotic surgery where the surgeon is in one location and the patient in another, particularly with the deployment of 5G technologies with low latency. The spread of telemedicine could result in substantial health improvements: bringing health care of older people who have trouble getting to the doctor, people who live in remote areas, or those who lack local health care providers.

Health care is heavily regulated, and state sponsored in some jurisdictions, with the details varying considerably across countries. In the United States it is regulated at the state as well as federal level. Most states require licenses to practice medicine in that state.

For telemedicine to be successful it may be necessary to eliminate or loosen some of these regulations. During the pandemic many U.S. states allowed out-of-state doctors to treat in-state patients this way. That provided a boon to telemedicine as patients benefited from saving the time and expense of going to a health care facility as well as the health risk. States have since suspended those emergency measures.<sup>7</sup> Federal privacy regulations sharply restrict the transmittal of health data. That was important for digitizing health care records but creates obstacles for health care platforms.

Telemedicine, however, is such a fundamentally different way of providing health care that it could also lead to issues that require new laws or regulations. One issue that applies across the digital economy concerns the extent to which the platform has liability for the actions of the providers. Another issue concerns data portability. The tradeoffs between privacy, from restricting portability, and competition, for making it easier, could change if telemedicine results in large global platforms with troves of health care data on their participants.

**Platform Liability and Section 230.** The now infamous Section 230, of the Communications Decency Act, illustrates the perils of Tech Reg. In 1996, a couple of years after the launch of the commercial internet, U.S. Congress decided to shield internet platforms from liability for third-party content on their sites. Legislators, and the President who signed the bill, had concluded that making these platforms face the liability under the laws and court rulings that applied to traditional business would deter innovation based on the new technology. It appears they did this on their own and not from lobbying by the dotcoms or their investors. The legislation also shielded the internet platforms from liability from self-regulating content provisions.<sup>8</sup> “Old regs, don't fit” was the path followed.

Section 230, and similar protections adopted in other jurisdictions, stimulated the formation and growth of internet platforms whose business models were based on third-party content. Private regulation enabled these platforms to discipline content when it was in their self-interests, such as by jeopardizing ad revenues. But did not require them to do so when it was in the public interest, the object of the laws to which they were not held.

Many current policy concerns involve platforms, and behaviors, that were, in effect, subsidized by Section 230. That includes the spread of misinformation, hate speech, and terrorism. By promoting internet platforms that rely on third-party content Section 230 likely also encouraged the growth of online advertising or at least online advertising based on third-party content. Those platforms are at the center of the debate over regulation of privacy and personal data.

It is possible that Section 230 was a good tradeoff at the time. The internet boomed and consumers benefited from third-party content, such as social networks, and customer reviews. Now policymakers can reign in some of excesses.

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**“Tech Reg is here to stay. The digital transformation will demand thoughtful analysis of laws and regulation as most parts of the economy are touched.”**

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It is also possible that Section 230 was a huge mistake. Faced with liability for third-party content investment and innovation would have been steered to other areas. As Peter Thiel, a PayPal founder, put it, “[w]e were promised flying cars, instead we got 140 characters.” Content platforms could have adopted different business models or practices to limit their exposure. Through the evaluation of multiple

<sup>7</sup> See, for example, Stephanie Armour & Robbie Whelan, “Telehealth Rollbacks Leave Patients Stranded, Some Doctors Say,” *Wall Street Journal*, November 22, 2021. <https://www.wsj.com/articles/telehealth-rollbacks-leave-patients-stranded-some-doctors-say-11637577001>.

<sup>8</sup> For discussion see, Jeff Kosseff, *The Twenty-Six Words that Created the Internet* and David S. Evans, “Deterring Bad Behavior,” cited above.

cases the courts could also have struck a more sensible balance between promoting innovation and protecting victims.

What appears certain is that Section 230 was well-meaning but had unintended consequences that have been harmful. And not from imposing new regulations, but from suspending existing ones, for digital businesses.

# 06

## CONCLUSION

Tech Reg is here to stay. The digital transformation will demand thoughtful analysis of laws and regulation as most parts of the economy are touched. That isn't meant to be a call for regulation. It could mean eliminating laws or regulations that stand in the way. Or tweaking of existing ones. It may well mean new regulation though. Or standing pat that existing laws should apply.

Tech Reg will require rigorous thinking informed by scholarship from economics, law, and other disciplines. There's an urgent demand to increase the supply of scholarship focused on this area. It will provide an antidote to excessive romanticizing or condemnation of digital businesses. And from adopting Tech Regs that are too light, too heavy, or just too soon. ■



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