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Internet – Platforms – Regulation

**Coordination of Markets and Curation of
Sociality**

Ulrich Dolata



University of Stuttgart

Institute for Social Sciences

Organizational Sociology and Innovation Studies

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Abstract

The leading internet corporations, with their extensively networked platforms, have become the key players in the design and regulation of the internet in the course of the 2010s. This paper explores the mechanisms through which they fulfil their role as structure-building, rule-setting and action-coordinating core actors in today's web. The focus is on two main areas of regulation: first, the private-sector regulation of markets in which the companies, as platform operators, coordinate market processes and determine competitive conditions; and, secondly, the technically mediated structuring and curation of social relationships and social behavior. Through the latter, the platform operators assume far-reaching social ordering and regulatory functions. The thesis of this article is that the few big platforms that today enable and shape large parts of private and public life on the internet can be understood as differentiated social systems with a distinct institutional basis, which the internet companies as platform operators structure and control to a considerable extent by means of their own rules, regulations and coordinating bodies. Indeed, these companies are even assuming quasi-sovereign tasks that, previously reserved for state authorities, are now largely accomplished by them.

Zusammenfassung

Die führenden Internetkonzerne sind mit ihren weitläufig vernetzten Plattformen im Laufe der 2010er Jahre zu den entscheidenden Akteuren der Gestaltung und regulativen Einfassung des Internets geworden. Der Aufsatz geht der Frage nach, über welche Ansatzpunkte und Mechanismen sie ihre Rolle als strukturbildende, regelsetzende und handlungskordinierende Kernakteure im heutigen Web ausfüllen. Im Zentrum stehen dabei zwei wesentliche Regelungsbereiche: zum einen die privatwirtschaftliche Organisation und Regulierung von Märkten, auf denen sie als Plattformbetreiber selbst die Marktprozesse koordinieren und die Wettbewerbsbedingungen festlegen, und zum anderen die technisch vermittelte Strukturierung und Kuratierung sozialer Verhältnisse und sozialen Verhaltens, durch die die Plattformbetreiber sehr weitreichende soziale Ordnungs- und Regulierungsfunktionen übernehmen. Die wenigen großen Plattformen, die heute weite Teile des privaten und öffentlichen Lebens im Internet ermöglichen und prägen, lassen sich – so die These des Aufsatzes – als ausdifferenzierte Sozialsysteme mit distinkter institutioneller Basis fassen, die die Plattformbetreiber über eigene Regeln, Regulierungen und Koordinationsgremien maßgeblich strukturieren und kontrollieren – bis hin zur Übernahme quasi-hoheitlicher Aufgaben durch die Unternehmen, die bis dahin staatlichen Instanzen vorbehalten waren.

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1 Introduction: Private-sector conquering of the internet

The mid-1990s—a time when the commercial utilization of the internet was already well under way (Amazon was founded in 1994, Yahoo in 1994 and Google in 1998)—were characterized by an influential narrative which advocated that the internet could (or should) be free, decentralized and self-regulated and be managed largely without political or state intervention. It is in this spirit that, on the sidelines of the 1996 World Economic Forum in Davos, John Perry Barlow (1996), one of the founders of the Electronic Frontier Foundation, formulated his “Declaration of the Independence of Cyberspace.” The Declaration, marked by remarkable pathos and speaking of an indeterminate “we”, called for a decidedly self-regulated web combined with a rejection of all attempts at state control:

We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth. We are creating a world where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity.“ And: „Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.

A year and a half earlier, in August 1994, Esther Dyson, George Gilder, George Keyworth and Alvin Toffler (1994) presented a “Magna Carta for the Knowledge Age,” in which libertarian notions of freedom—“America, after all, remains a land of individual freedom, and this freedom clearly extends to cyberspace”—and the open designability of the web were combined more strongly with neoliberal ideas of the market and a suggested deterministic impact of technological progress on processes of economic demonopolization and decentralization:

In Cyberspace itself, market after market is being transformed by technological progress from a “natural monopoly” to one in which competition is the rule. [...] The advent of new technology and new products creates the potential for dynamic competition.

This mixture of liberal and emancipatory visions of the web, neoliberal views of the market and a strong technological determinism—comprising what then became known as the so-called Californian ideology—proved to be an extremely powerful narrative in the following decades. It was successful not least because it was able to bring together the world views of two quite different groups of actors: it fitted both the “free-wheeling spirit of the hippies” and the “entrepreneurial zeal of the yuppies” (Barbrook and Cameron 1996: 45). Later, these visions were complemented by the prospect or promise, likewise derived directly from new technically based interaction possibilities, of a sovereignty of action and design capability of Web 2.0 users (O’Reilly 2005; Schrape 2019).

Essential elements of the Californian ideology and its successors were, however, based on storytelling that did not, even then, stand up to critical evaluation. For example, the rejection of political interventions and regulation activities camouflaged the substantial

role of the state in the entire process of the creation and development of networked computer systems and the internet. The intensive research funding and coordination by the United States government over several decades and until the recent past has to this day decisively shaped research and innovation as well as academic-industrial knowledge transfer. In the beginning, this research funding came primarily from the Department of Defense and its Defense Advanced Research Projects Agency (DARPA) and was later expanded to include specific technology and industrial policy support programs, for example for start-up companies (Abbate 1999; Mazzucato 2013). The widespread rejection of political intervention was aimed less at any governmental research (funding) policies, from which the internet companies, in particular, have all along benefitted, than at regulatory interventions by the state in the free play of (market) forces.

In place of counterproductive regulations, visionary engineers are inventing the tools needed to create a “free market” within cyberspace, such as encryption, digital money, and verification processes. (Barbrook and Cameron 1996: 53)

Yet even back then, the unspecifically presented “we” and, with it, the promise of a web that would be open to and potentially designable by everyone was hardly more than ideology. At the end of the 1990s, Lawrence Lessig (1999) coined his famous adage *code is law*, emphasizing that the web is by no means a space void of regulation. He argued that, while not so much regulated by the law, the web is all the more composed of complex information technology architectures, codes and software applications, whose structuring effects on user behavior, via social instructions inscribed in technology, can be more rigid even than any political law (Feick and Werle 2010). The “we” of the actors considered capable of substantially participating in the design of the web thus shrank to a small elite of those with the technical skills and resources to develop, implement and control the corresponding technical specifications.

By the 2010s at the latest, the vision of a decentralized internet economy with free markets and full competition was no longer tenable. In the shadow of the long-time popular notion of self-organization devoid of any state intervention, the commercial exploration and private-regulatory structuring of the internet, largely carried out by companies from Silicon Valley, had gained momentum and taken shape almost entirely unhindered by social intervention and state-regulatory frameworks (Misterek 2017). Massive concentration processes, the emergence of winner-take-all markets and the establishment of new natural quasi-monopolies, which characterize the web today both economically and socially, are the widely visible consequences of this large-scale land grab.

Above all, the structuring and regulating influence acquired by the leading US technology groups Amazon, Apple, Google, Facebook and Microsoft now extends far beyond economic market power and deep into the social fabric. With their platforms, these groups develop and operate the essential technical infrastructures and services of the web, on which not only private users but also many companies and public institutions

rely today. As quasi-sovereign actors, they control the central access points to the internet; monitor user activities; and curate and edit content, information flows and discussions on a large scale. As structure-building economic actors, they aspire toward the complete collection, processing and valorization of the data traces that users leave behind on the web. To this end, they have embarked on the large-scale undertaking of measuring and commodifying all social activities and relationships, an endeavor that would have been unthinkable in pre-internet days. Moreover, they no longer act merely as leading and trendsetting market participants but also maintain and regulate their own markets and work relationships, whose participants sometimes reach far beyond their corporate context (Dolata 2018, 2019).

The technical, economic and social regulatory sovereignty that has been acquired above all by the large internet corporations (and also, albeit on a smaller scale, by a number of newer and more specialized internet companies such as Uber, Airbnb, Spotify or Netflix) corresponds with a considerably weaker influence of state or civil society actors on internet structuring and design. The majority of economic activities as well as a great deal of private exchange and the net-based public sphere all today take place in privately organized and designed spaces, and thus within technical and socioeconomic regulatory frameworks set by the companies providing those services. Of course, the internet companies are clearly not outside society with all this: they regularly have to face political interventions, consider the interests of other economic actors, and contend with civil society protest or idiosyncratic user behavior. However, this does little to change the fact that they have become the decisive proactive and trendsetting actors in the design and regulation of the internet.

This brings me to the main subject of this paper: the question of how and through what mechanisms the internet companies are fulfilling their role as the structure-forming, rule-setting and action-coordinating core actors of today's web—in terms of both social and technical levels of structuring and regulation that characterize their platforms. This applies in particular to *two major regulatory areas*, as outlined in the following points:

- the independent *organization and regulation of markets* for products, services and labor in which these companies, as platform operators, are able to coordinate economic processes and determine the conditions of competition, as well as the *organization of macroeconomic interrelationships*, as indicated in their plans to introduce own digital currencies;
- the extensive *structuring and curation of content, communication and public spheres*, by means of which the platform operators lay the institutional foundations for private expression as well as for public information and discursive possibilities, thereby assuming far-reaching social ordering and regulatory functions on the web.

In today's internet, both of these areas—the organization of markets and the curation of social relationships—are concentrated on a few privately-operated platforms which account for the vast majority of social and economic exchange. Each of these do not simply emerge from the interplay of a multitude of social actors but are above all the result of an intentional structure-building driven by the platform operators. I refer to this as *platform regulation*, which is essentially organized and orchestrated by the platform operators and has so far been characterized by an extreme power asymmetry.

The main part of the text begins in Section 2 with an exploration of the field and revolves around private-sector internet platforms as the central socio-technical infrastructures of today's consumption- and communication-oriented web. I first discuss relevant platform concepts, and then develop my own typology and working definition of the platform, including an outline of its socioeconomic foundations.

Section 3 then looks at the two regulatory areas mentioned above—the coordination of markets and the curation of sociality—which constitute the actually new and disruptive aspects of internet platforms. Based on these two areas of regulation, I ascertain the central importance which platforms, as the essential socio-technical institutions of today's internet, have acquired not only for the organization of economic processes but also and above all for the shaping and regulation of social conditions and processes. This core part of the paper aims to condense the empirically traceable forms of structuring and organizing, coordination and regulation into distinct patterns and mechanisms of a socio-technically constituted regulation *by* platforms.

Although the aforementioned companies have become core actors in the platform-based regulation of the web, they do not, of course, operate outside societal contexts, social debates and political intervention. Against the backdrop of the increasingly critical public discussions on the power of internet companies and their platforms, the final Section 4 analyzes the question of possibilities for intervention in the creative sovereignty of platform operators and discusses approaches to the political containment and regulation *of* platforms.

2 Conceptualizations, variants and reaches of commercial internet platforms

2.1 Conceptualizations: Five ways of reading the platform

There are numerous, mostly privately-operated services on the internet, performing everything from searches, networking, messaging and advertising to trade, mediation and media functions. Since the 2000s, having rapidly taken shape and expanded in reach, these services have become the central infrastructures and hubs of information

procurement, communication, publicity and consumption on the net. In order to characterize or refer to these services, the second half of the 2010s then saw the introduction of the concept of the “platform”—one of those umbrella terms that are initially as inclusive as they are indeterminate and can be concretized and contextualized in very different ways. In the following, I will outline and comment on five readings of the platform relevant to the matter under discussion.

The first reading understands platforms as computer-supported, software-based, programmable and algorithmically structuring *technological architectures* that currently form the central technical infrastructures of the internet and to which countless specific applications can be added (Gillespie 2010, 2014). Through their technical specifications, they not only shape the possibilities for individual users to express themselves but also structure the options for action of providers of content, cultural or political, for example. Using specific software interfaces, they extend far beyond individual platforms (such as Facebook or Google) and deep into the web, thus enabling the centralized collection and analysis of countless decentralized data sets (Gerlitz and Helmond 2013; Helmond 2015). The many social inscriptions in these technical infrastructures are sometimes mentioned (e.g., in Kitchin 2014: 21–26). However, this reading of the platform does not focus on which agents are socially constructing and implementing these infrastructures or on how they do so.

In the economic literature, platforms are primarily understood as *two- or multi-sided markets* in which the platform operators act as intermediaries or matchmakers, bringing together at least two different market actors—sellers and buyers, users and advertisers (Rochet and Tirole 2003; Evans and Schmalensee 2016, 2005; Haucap and Stühmeier 2016). Typical for many of these markets on the internet are network effects with their concentration-promoting results. The more a digital platform is used and the more active members it has, the more interesting it becomes not only for additional users but also for other actors. The number of regularly active users on one side of the market also increases the platform’s commercial attractiveness for advertisers, retailers or other providers on the other side of the market. The basic principle of multi-sided markets has been known for a long time and has been constitutive for decades of many branches of the economy, including the enterprise of bookselling, music, magazines, radio and television, travel and ride-hailing agencies. These offers are now, of course, being fundamentally restructured on a new technical basis. The idea of the so-called gift economy (Currah 2007; Elder-Vass 2016), in other words, the free use of services such as those offered by Google or Facebook, which are financed via the other side of the market, for example through advertising, also has its predecessors: private radio and television have long been operating according to this principle (Evans and Schmalensee 2016: 34, 197–206).

From an organizational perspective, commercial internet platforms are sometimes seen as a *new ideal type of company*, “in which the ‘firm’ is a set of calls on resources that

are then assembled into a performance” (Davis 2016: 513). In the second half of the 2010s, the blueprint for such web page enterprises was often provided by the ride-hailing service Uber—a company that, to this day, has not come close to proving the economic viability of its business model—in particular through its highly technically mediated way of organizing and coordinating resources and work processes: “Hiring, scheduling, performance measuring, and evaluation are now largely in the hands of algorithms” (Davis 2016: 511; also Rahman and Thelen 2019; Thelen 2018). These new forms of organizing resources and work can be described as the continued development and perfection of neoliberal markets and deregulated employment, using new technical means. These trends have been observed for quite some time; we think only of the proliferation of “temp work.” However, most often, the literature discussing these developments remains unclear about the socioeconomic reach of these trends toward web page enterprises. In most cases, reference is made to supposedly paradigmatic individual cases (“Uberization”), the generalizability of which yet has to be proven empirically.

In a perspective that focuses on fundamental changes in the economy as a whole, platforms are understood as a constitutive expression and core element of *substantial changes in the structure of the capitalist economy* and are labelled with far-reaching terms such as “platform capitalism” (Srnicsek 2017; Langley and Leyshon 2016), “digital platform economy” (Kenney and Zysman 2016; Zysman and Kenney 2016) or “digital capitalism” (Staab 2019). In addition to emphasizing the platform economy’s intensive concentration processes and asymmetric power structures, this literature underscores the role of its participating companies as pioneers in the collection, evaluation and monopolization of large data stocks, which are becoming increasingly important for the economy as a whole; as organizers of digital economic circulation processes; as coordinators of working environments, user activities and the contributions of external producers; and as drivers in expanding the possibilities of value creation to include commodifiable content and communications. Admittedly, all these important building blocks have not yet consolidated into a profound political economy of the platform. Above all, and left unanswered, is the question of the extent to which these mechanisms, undeniably observable on the commercial internet, can be transferred to the economy as a whole and generalized into a new model of capitalism or of a digital economy that encompasses the classical economic sectors as well.

The final reading to be outlined in this section broadens the view to the *social, political and cultural significance of platforms* (Dijck, Poell and de Waal 2018; Dijck 2013). It argues that platforms and the social rules and norms inscribed in them have deeply penetrated social contexts and, with their structuring achievements, are changing the overall institutional settings through which modern societies have been organized. According to this reading, this process happens via three mechanisms: Platforms are used to mine and process data on a large scale as raw material, to sort content and user

behavior, and to turn activities, ideas, emotions and objects into tradable commodities. A platform society, therefore, is understood to be a society in which both economic and social processes are increasingly shaped by globally operating platform companies, which gives rise to a parallel world, organized primarily by the private sector, that complements and increasingly undermines established democratic institutions and processes (see also: Nieborg and Poell 2018; Zuboff 2019).

2.2 Concretization: Typology, definition and socioeconomic reach of the platform

The terrain covered by these readings from various angles is admittedly quite rugged. From an empirical point of view, the numerous platforms on the internet differ significantly from one another, calling for a typifying view. The following characteristics of platforms can be distinguished from one another based on their range of services:

- Search platforms that are provided by Google as a monopoly or that are oriented toward Google;
- Networking and messaging platforms, such as Facebook (with WhatsApp and Instagram), Twitter or Snapchat;
- Media platforms, such as YouTube, Netflix, Apple or Spotify;
- Trading platforms, such as Amazon, Alibaba, eBay or Zalando;
- Booking or service platforms, for example, in the area of ride-hailing services (Uber, Lyft), travel and accommodation booking (Airbnb, Expedia, Booking.com) or dating services (Match, Parship);
- Cloud platforms, such as Amazon Web Services or Google Cloud Platform, to which individual users, business customers as well as government institutions outsource their data and the processing thereof;
- Crowdsourcing and crowdfunding platforms, such as Amazon Mechanical Turk, TaskRabbit (a part of the IKEA Group), Kickstarter or Indiegogo, which serve as hubs for the competition-based awarding of work orders or in order to finance projects.

Overall, these platforms can be seen to comprise *digital, data-based and algorithmically structuring socio-technical infrastructures* that facilitate the exchange of information, the structuring of communication, the organization of work and markets, the provision of a broad spectrum of services, and the distribution of digital and non-digital products (Kenney and Zysman 2016; Srnicek 2017: 43–48). As technical infrastructures, they are based on new possibilities for collecting and processing large amounts of data; the comprehensive digital networkability not only of media, information and communication but also of material things and production structures; and the sorting

and coordination of these processes through learning algorithms (Gillespie 2014, 2016). As socioeconomic units, platforms are not crowd- or sharing-based (Sundarajan 2016)—even if their success (or failure) depends heavily on the number of users and on their personal contributions, communications, ratings and preferences—but are installed, organized and controlled top-down by profit-oriented companies.

Beyond this lowest common denominator, the field becomes quite heterogeneous. Indeed, the various internet platforms differ significantly from one another not only in terms of classic economic indicators, such as their turnover, profit or employment (Tab. 1), but also in terms of their economic or social reach and significance (Dolata 2018, 2019; Dijck, Poell and de Waal 2018: 12–22).

The leading internet groups Google, Amazon, Facebook and Apple offer a broad spectrum of coordinated and networked services and businesses, which they have developed into extensive *socio-technical ecosystems* that extend far beyond their traditional field of activity. Google has long ceased to be just a search engine. It owns YouTube, by far the largest video channel on the net; Google Play, the largest app store next to Apple, offering media content of all kinds; Gmail, the leading email service; Google Maps, the most widely-used map service; and Android, the leading operating system for mobile devices. Finally, Google is one of the largest providers of cloud services next to Amazon and Microsoft. Facebook, for its part, together with its subsidiaries WhatsApp and Instagram, is the undisputed leader in social networking and messaging. Over the past decade, Apple and Amazon have also distinguished themselves as full-service providers of a broad range of services and media content, some of which they now produce themselves. The private-sector regulation of the internet is essentially carried out via these broadly based platforms that reach deep into the web and whose services are systematically accessed not only by individual users but also by numerous companies, media producers, government institutions or other platform companies (Barwise and Watkins 2018).

In contrast, the countless smaller internet companies offer more specific services on their platforms. As a rule, these are *singular and specialized consumer or service offerings* that are either purely consumer-oriented, such as ride-hailing services, travel bookings, room referrals, video-on-demand services and shopping portals, or, like Twitter or Snapchat, communication-oriented. They offer a limited range of services and can generally be assigned to traditional economic sectors, some of which are radically realigned by the activities of the new players. Uber, for example, has brought new momentum to the markets for ride-hailing services, and Airbnb has brought a new dynamic to the network-based brokerage of accommodations. Over the past decade, Netflix has developed from a classic video rental service to the world's leading film streaming service, with its own film productions. However, many of these platforms are dependent on the infrastructure of the big internet companies. For example, Netflix and Spotify run entirely on the servers of

Amazon Web Services and Google Cloud, respectively; and Airbnb and many others integrate the Google Maps' geographical navigation service into their offerings.

From an economic perspective, two things stand out. First, the repertoire of commercially viable *business models* has remained quite limited over the years. The focus is still, as it was by and large in the early 2000s, when platforms were being discussed under the label of “e-commerce” (Zerdick et al. 2001: 167–173), on advertising, trade, subscription models, brokerage fees, the commercial exploitation of databases and the sale of digital devices. This applies not only to smaller platform companies such as Airbnb, Uber, Spotify and Netflix but also to the leading internet groups (Tab. 1).

Table 1: Internet companies – Key economic data 2019

Company (Fiscal year end)	Revenue in billion \$US	Net income in billion \$US	Core business in billion \$US	Employees in thousand
Amazon (12/2019)	280.52	+11.59	Retail Sales and Subscriptions (88%); Cloud (12%)	798,000
Apple (9/2019)	260.17	+55.26	Devices (82%); Services (18%)	137,000
Google (12/2019)	161.86	+34.34	Advertisement (84%); Cloud (5,5%)	118,899
Microsoft (6/2019)	125.84	+39.24	Software and Services (70%); Cloud (30%)	144,000
Facebook (12/2019)	70.70	+18.49	Advertisement (98%)	44,942
Netflix (12/2019)	20.16	+1.87	Film streaming / Subscription	6,700
Uber (12/2019)	14.15	–8.51	Ride-hailing service / Booking fees	26,900
Spotify (12/2019)	6.76	–0.06	Music streaming / Subscription and advertisement	ca. 4,600
Airbnb (12/2019)	4.80	–0.67	Accommodation bookings / Fees	12,736
Twitter (12/2019)	3.46	+1.47	Microblogging / Advertisement	4,900
Snap (12/2019)	1.72	–1.03	Instant messaging / Advertisement	3,195

Sources: Annual reports of the companies; press review. Author's compilation.

It is also remarkable that the *macroeconomic and employment effects* which the spread of these platforms has entailed have so far remained rather modest. An empirical study by the Bureau of Economic Analysis at the US Department of Commerce estimated that the total number of people employed in the digital economy, which includes the entire information and communications technology industry, contributed only 3.9% to

total employment in the United States in 2016. The share of commercial internet platforms in total employment was less than one percent, in other words, significantly lower even (Barefoot et al. 2018). Moreover, a study by the International Monetary Fund to measure the macroeconomic effects of the digital economy comes to the conclusion, for the United States, that online platforms and services contributed only 1.5% to the US gross domestic product (GDP) in 2015 (International Monetary Fund 2018). Hence, the transformation of the economy toward a platform capitalism or a digital platform economy seems to be still a long way off.

However, the extremely low macroeconomic significance of this sub-sector of the (digital) economy, as reflected in the above-mentioned figures, does not adequately reflect both the considerable influence which the leading internet groups wield on the readjustment of economic structures and processes and the extraordinary social and socio-political clout that they have attained. The rapid spread of commercial internet platforms over the past two decades has not only triggered massive upheavals and induced substantial restructuring processes in a number of economic sectors (e.g., retail, advertising markets, media and various service sectors) but has also allowed a number of internet companies to establish themselves as rule-setting coordinators of corporately owned and internationally oriented markets. In addition, large parts of the social exchange on the net, from private communication and personal self-presentation to the most diverse kinds of public spheres, are now bundled, evaluated and curated by a few commercially operated platforms.

The private platforms' roles as organizers of markets and curators of social contexts are, along with the commodification of user behavior (Zuboff 2019), the essential characteristics that make them a disruptive force and enable them to act as central regulatory bodies in today's internet. These will be examined in more detail below.

3 Regulation by platforms: Organization of markets and curation of sociality

3.1 Organization of markets and macroeconomic contexts

To begin, it has to be emphasized that platform-operating internet companies expectedly act as *market participants* and try to capture and dominate new market segments with their strategies for expansion. In doing so, they are in intense competition with one another as well as with traditional companies in the areas they seek to tackle. Smaller internet companies, such as Uber, Airbnb, Spotify or Netflix, not only have to deal with other new competitors in the markets for drive-hailing services or the brokering of accommodation or of media content, but also have to assert themselves

against the established providers and, in some cases, against the leading internet groups. Yet even the latter are by no means operating in non-competitive spheres. While they do dominate important and often highly concentrated markets in one way or another, they do not, as a rule, act as monopolists. This applies to internet advertising and app stores as well as to cloud services, integrated media offerings and retail, which are characterized by duopolistic or oligopolistic structures and patterns of competition. In addition, the internet groups regularly compete for dominance in new technological trends, such as image and voice recognition, machine learning and virtual reality (Dolata 2018; Parker, Van Alstyne and Choudary 2016: 210–227). Thus, clearly visible tendencies towards concentration in internet-based markets are accompanied by fierce competition and strategies for securing and expanding domains.

However, the internet companies have long since been much more than dominant economic actors who compete with other market players. In addition, they are *operating, coordinating and controlling their own markets* as well. In these privately owned and online-mediated markets, the internet companies assume the rule-setting role of market coordinators: they do not act merely as intermediaries who simply make market transactions of third parties technically possible, but rather structure, regulate and monitor the activities of all market participants.

This affects some of the major platforms of the leading internet groups. Indeed, Amazon maintains the largest trading platform for third-party providers on the internet, Amazon Marketplace, which by now generates higher sales than the corporation's own online retail business. Google operates YouTube, a central media platform on the web, and organizes the framework conditions and monetization opportunities for YouTuber and Influencer as well as professional media producers through its YouTube Partner Program. Apple, Google and Amazon also have large app stores where software developers compete for commercial attention, based on guidelines and commission models set by the market coordinators (Barwise and Watkins 2018; Khan 2018; Dolata and Schrape 2014). While the leading internet groups can largely autonomously implement extensive social rules and algorithmic structurings in their corporate-owned markets, such independent rule-setting is more difficult to achieve for the new online-mediated markets for drive-hailing and accommodation services, mainly represented by Uber and Airbnb. Although these companies, too, act as rule-setting, coordinating and sanctioning intermediaries who systematically challenge existing (state) regulations, they are under enormous pressure in terms of public legitimation and political regulation (Thelen 2018). This is, among others, because these companies, although operating in international markets, essentially offer services with strong local or regional connections. After all, taxis are hailed, and accommodations are rented locally.

The company-owned markets outlined here differ from numerous other internet markets, in which the companies, as more or less dominant and trend-setting market participants, offer their own commissioned or licensed products or services, such as music

or film streaming, cloud services and online retail. Amazon, for example, assumes both roles: as an online retailer with commissioned offers, the Group is a player in a market it dominates, while with Amazon Marketplace it also acts as the regulator and coordinator of its own market, which it constitutes and controls. Whereas smaller companies such as Uber or Airbnb are largely coextensive with the markets they organize, for the leading internet groups company-owned markets in the sense described above represent only an important part in their overall activities.

These company-owned markets are organized and regulated by means of extensive socio-technical regulations—market and competition rules; coordination, control and exploitation mechanisms—which are laid down in general terms and conditions, partner programs or developer guidelines as well as in technical programs and instructions. In corporate decisions, the platform owners define the inclusion and exclusion criteria for market participants; formulate the market rules, distribution and remuneration structures; develop product information, rating, ranking and performance control systems; guarantee secure forms of payment; and seamlessly mine the data of all participants (Kirchner and Beyer 2016; Staab 2019: 176–178). Unlike in classical markets, however, the resulting framework of action for market participants and platform users is not primarily defined by the social enforcement of these social rules but rather by the platform’s technical infrastructures and programs, in which the social foundations of the market—its structural, regulatory and procedural characteristics—are inscribed as technical specifications. The implementation of the market rules, as well as the concrete coordination and handling of all market processes, is largely automated and algorithmically controlled (Gillespie 2014; Kitchin 2014: 15–26, 80–87; Beer 2017).

These privately regulated markets are characterized by strong power asymmetries between the involved actors which manifest at various levels. First, the platform operators have considerable *infrastructural power*. They design and control the technical foundations on the basis of which market processes unfold, and they act as gatekeepers who decide on inclusion and exclusion as well as on the conditions to which market participants are subject (Barzilai-Nahon 2008). Secondly, the privately organized markets are also characterized by a significant *informational power* held by the platform operators: the latter collect, control and evaluate all the data of all market participants and thus obtain a complete and exclusive overview of everything that happens on the markets they organize. The (supposed) transparency of the information, rating and ranking systems goes hand in hand with the systematic opacity of their algorithmic foundations—the conception, modification and continued processing thereof—which remain a black box for users, providers, consumers and even for state regulatory bodies (Pasquale 2015).

Thirdly, these information asymmetries contribute to the already *market-dominating power* of the platform operators, some of whom are also leading players in the same market segment as market participants. Google is both a media group with its own commercial offers and the operator of the media channel YouTube. Apple, Google or

Amazon can view countless third-party software developments via the app stores they control and, if required, draw benefit from them for their own business. Amazon has an overview of all offers from all participants on its marketplace and thus can gain competitive advantages for its own trading business, as Khan (2018: 119) explains:

Amazon is exploiting the fact that some of its customers are also its rivals. The source of this power is: (1) its dominance as a platform, which effectively necessitates that independent merchants use its site; (2) its vertical integration – namely, the fact that it both sells goods as a retailer and hosts sales by others as a marketplace; and (3) its ability to amass swaths of data, by virtue of being an Internet company. Notably, it is this last factor – its control over data – that heightens the anticompetitive potential of the first two.

Fourthly and above all, however, the platform operators have *regulatory and action-structuring power* and assume quasi-sovereign tasks of market structuring and regulation. The more relevant a platform becomes for the visibility and processing of a business offer, the stronger the pressure on market participants to be present on the platform and to adapt their own offerings to the platform's structural characteristics and rules. This affects services such as travel and hotel bookings, which are now hardly ever made through the websites of direct providers but rather on platforms such as Airbnb, Booking.com or Expedia. It also affects large parts of cultural and media production, such as the offers of traditional media companies, which are significantly decreasing in popularity outside major internet platforms. As a result, culture and media producers not only lose autonomy of action and control over their distribution and communication channels but, as demonstrated by Nielsen and Ganter (2018: 1615), have to adapt the production, distribution and exploitation of their content quite extensively to the structuring framework and rules of the platforms:

Today, they have far less control over the distribution of news than they had in the past. They may reach wider audiences than they can through their own websites and apps, but they do it by publishing to platforms defined by coding technologies, business models, and cultural conventions over which they have little influence and are increasingly dependent.

As a result, *privately regulated and socio-technically constituted market regimes* have taken shape on the internet that clearly stand out from other markets. They are neither primarily state-organized, regulated or guaranteed nor do they constitute themselves through the self-organized and deliberative interaction of various non-state actors (Aspers 2011: 148–168; Ahrne, Aspers and Brunsson 2015). Instead, they are installed, operated and controlled by individual companies. The platform operators act neither as competing market participants nor as neutral intermediaries, but rather as rule-setting and regulatory actors who endow themselves with far-reaching authority and powers of intervention and who thus assume essential functions that are prerequisites for the acceptance, functionality and reliability of the market. Further, the technical infrastructures provided by the platform operators are not neutral architectures through which connections are merely established. Instead, through the rules inscribed in them, they form these markets' institutional foundation, the basis that guides actions and structures

processes and to which providers, consumers and users must orient themselves if they wish to play a part.

Plans to establish platform-specific private currencies go a significant step further. With this, the privatization of market regimes described above could be extended to include the much more far-reaching prospect of *private-sector regulation of macroeconomic interrelationships*. Eventually, sovereign tasks, previously performed primarily by democratically legitimized and politically constituted institutions, could be, at least partially, delegated to private companies or consortia. This could concern, for example, the regulation of money supply, interest rate policy and the safeguarding of price level stability or banking supervision, which have so far been the domain of central banks.

Such plans are most advanced at Facebook. In mid-2019, with the Libra project, the social media company presented not only an initial concept for a digital currency but also an appropriate regulatory and institutional framework (Schmeling 2019; Taskinsoy 2019; Mai 2019). The core organization slated to spearhead this project is the Libra Association, a consortium of internet companies, payment providers and other organizations, designed as a private-sector counterpart and parallel structure to the central banks. This body should not only be responsible for the design and enforcement of Libra rules and the technical infrastructure of the digital currency but should also manage the Libra reserve, create Libra money and control the money supply, monitor payment channels and admit new Libra traders (Libra 2019).

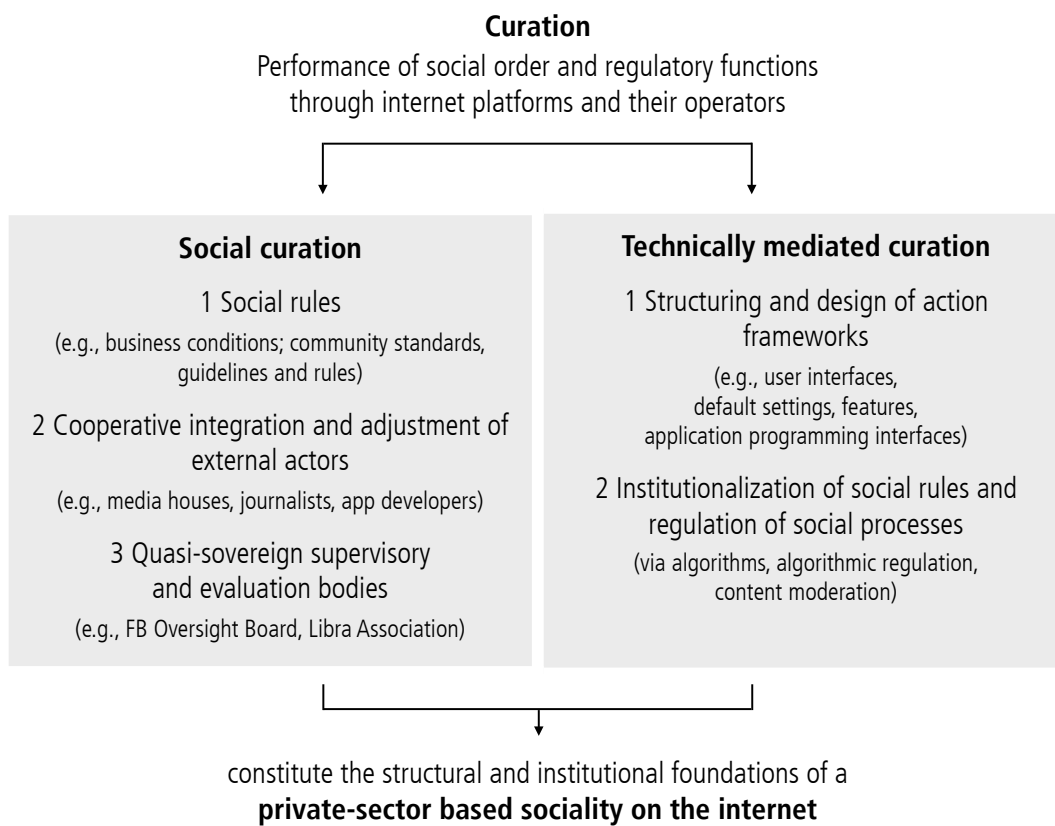
The extent to which these far-reaching plans will become reality cannot yet be foreseen and need not be discussed here. What is important for our purpose is their general thrust: namely, the bid to relativize the importance of central banks and governments in a central area of macroeconomic management and to supplement or replace these with private-sector forms of macroeconomic regulation. In this sense, these plans comprise the takeover of quasi-sovereign *economic* regulatory tasks by the private sector, in ways that align with the cornerstones of the libertarian ideology outlined at the beginning and which, as we will see below, will be substantially expanded by the assumption of quasi-sovereign *social* structuring and curating tasks.

3.2 Curation of social relationships and processes

In addition to organizing and regulating markets, these platforms—in particular the widely built-out and networked ecosystems of the leading internet companies—have taken over essential social ordering and regulatory functions on the internet, which are summarized here as *curation of social relationships and social behavior* (Fig. 1). Through their numerous services and offerings, these platforms filter information and communication processes, shape individual behavior and organizational action, and

structure social relationships and public spheres—and do so in a far more comprehensive manner than even large media corporations have ever been able to do (Couldry and Hepp 2016: 34–56; Lobigs and Neuberger 2018). While media corporations remain embedded in society and in its institutional structure as powerful opinion-forming actors with a limited reach, the large platforms, with their own rule-setting, structuring, selection, monitoring and sanctioning activities, constitute no less than the institutional foundations of a *private-sector sociality on the internet*, which have, over the past two decades, evolved largely decoupled from democratic institutions and state influence.

Fig. 1: Social and technically mediated curation



Source: Author’s compilation

The basis of curation is formed by binding and sanctionable *social rules*. They are expressed in the general terms and conditions of the companies and, above all, in community standards (Facebook), guidelines and rules (YouTube; Twitter), in which the platform operators formulate in detail what they consider to be politically unacceptable, a glorification of violence or terrorism, offensive, obscene, erotic or pornographic. Throughout the ongoing development of their guidelines, which provide the legal and normative framework for all social activities on the platforms, the internet companies do, of course, integrate or consider public opinions and political interventions. However,

this does not mean that they have lost sovereignty over rule-making and enforcement on their platforms, on which they alone decide in the last instance.

These guidelines that form the basis of social curation are largely translated into technical instructions, structurings, sortings and rankings, which I refer to as *technically mediated curation*. Research in the sociology of technology has long shown that technology always incorporates social rules, norms, instructions and control mechanisms which influence the activities and behavior of their users in a way that sometimes is more rigid than that of social institutions (Dolata 2013: 32–40). In the 1990s, Christiane Floyd (1992) characterized software development as a construction of reality, and the aforementioned Lawrence Lessig (1999), also with regard to software, formulated the metaphor *code is law*, which equates, by virtue of its action-regulating power, all the instructions and procedures inscribed in software with the law and other social systems of rules. Two decades earlier, Langdon Winner (1980: 127f.) had already characterized technical arrangements as structure-forming and rule-setting patterns of social order:

The things we call “technologies” are ways of building order in our world. [...] In that sense technological innovations are similar to legislative acts or political foundings that establish a framework for public order.

First, in the platform context, this classical view of the structure-forming and institutional effects of technology manifests as a technically mediated *structuring and design of social action frameworks* that both enable and channel the activities of a diverse range of users. This includes the given user interfaces and default settings of the platforms, which have an action-structuring effect by enabling certain activities and excluding or impeding others. The numerous features embedded in the platforms (such as Facebook’s Reactions or Twitter’s Trending button) can also be summarized as action-orienting and opinion-forming structural elements inscribed in technology. In addition, Application Programming Interfaces (APIs) are used to integrate the web presences of countless third parties into the platforms’ scope of action and to establish extensive links between the platforms and external websites, other platforms and apps. This has led to a systematic and large-scale embedding of external technical architectures and thus to a substantial expansion of the reach and social significance of the leading platforms on the internet. This phenomenon is described in the literature as “platformization”: On the one hand, the structuring influence of individual platforms now extends well beyond their original domain and deep into the social web and shapes the scope of action of countless other actors. On the other hand, the integration of third parties enables platform operators to systematically tap into the off-platform data stocks and use them for their own data collection and analysis (Nieborg and Helmond 2019; Helmond 2015; Gerlitz and Helmond 2013).

Secondly, these structure-building effects of technology are supplemented by approaches to a technically mediated *institutionalization of social rules and regulation of social processes*, which is implemented primarily through the use of algorithms and is

referred to in the literature as algorithmic governance, algorithmic regulation or algorithmic content moderation (Gillespie 2014, 2016; Kitchin 2014; Just and Latzer 2017; Beer 2017; Yeung 2018; Katzenbach and Ulbricht 2019; Gorwa, Binns and Katzenbach 2020). Algorithms translate the social rules and norms that are valid on the platforms into technical instructions; monitor and sanction participants' activities; decide what is important and what is not, according to social relevance criteria inscribed in them; select, aggregate and rank information, news, videos or photos on this basis; structure private information and communication processes as well as public discourses; and constitute public spheres and communities that would not exist without them. With all this, algorithms essentially become the nucleus of a technically mediated framing, control and curation of social action on platforms.

The regulatory depth of intervention of algorithms is further augmented by the fact that they can be changed quickly and radically. Corresponding readjustments are regularly made by platform operators (e.g., in the PageRank algorithm of Google searches, the YouTube algorithm or in the News Feed algorithm of Facebook) and go on to reconfigure the social reality presented on the platforms, in some cases significantly. Changes to the newsfeed algorithm, for example, not only directly affect what users see in personal posts and news but also have a massive impact on the perception and web traffic of public media institutions or private media houses, whose performance is now highly dependent on their presence on these platforms (Nielsen and Ganter 2018; Dijck, Poell and de Waal 2018: 49–72). Algorithms that form the basis of all search and information, communication and interaction on these platforms are highly political programs that construct distinct, selective and increasingly personalized social reality offers based on social criteria that remain completely opaque to individuals, organizations and political bodies.

Of course, generally speaking, social structures and rules inscribed in technology, with their institutional and regulatory peculiarities, never determine action. Instead, similar to laws, regulations, social norms or values, they are open to interpretation and are repeatedly adapted, modified or even suspended, not only by their developers and operators but also as a result of political interventions, social disputes or idiosyncratic user behavior. This also applies, more specifically, to algorithms:

Algorithms are not just what their designers make of them, or what they make of the information they process. They are also what we make of them day in and day out—but with this caveat: because the logic, maintenance, and redesign of these algorithms remain in the hands of the information providers, they are in a distinctly privileged position to rewrite our understanding of them. (Gillespie 2014: 187)

The caveat inserted by Gillespie is important and marks an essential and generalizable difference between technology as an institution and social institutions. While the social institutions of democratic societies generally take shape in and through public discourse and political negotiations and require democratic legitimation, institutional

inscriptions in technology are usually the domain of their (private sector) producers and can hardly be publicly negotiated or shaped *ex ante*.

The two central levels of social and technically mediated curation described here are enriched by two further forms of social curation. On the one hand, the algorithmic structuring and sorting of media content and audiences since the mid-2010s has been supplemented by initiatives of platform operators aimed at a stronger *cooperative integration and platform-oriented alignment of media houses and journalists* (Bell 2018). These include projects such as the Google News Initiative (<https://newsinitiative.withgoogle.com/>) or the Facebook Journalism Project (<https://www.facebook.com/journalismproject>), which are designed to tie media groups and institutions, editorial offices and media-related organizations more tightly to their platforms and to align them more closely with their operational and exploitation logics, via meetings and training courses organized by the internet companies, through the development of programs to expand digital news services and through the allocation of grants.

Another major step was the *establishment of a corporate-owned oversight body* at Facebook, responsible for monitoring, moderating and evaluating content on the platform. The Oversight Board, active since 2020, staffed with external experts and financed by the company, seeks not only to monitor and further develop the implementation of the social rules laid down in the Community Standards but also has the authority to judge disputed content and, if necessary, have it removed from the platform (Harris 2020). In addition to the Libra Association, the group thus has a second body with a quasi-sovereign function, set up as a kind of constitutional court and supervisory committee, albeit without the democratic legitimacy of such bodies or the ability to exert influence on fundamental corporate decisions. While the Libra project is being proactively driven forward by Facebook, the setting up of the Oversight Board is constructed as a domain-securing reaction to increasingly critical political discussions about a stronger regulation of internet platforms. In essence, however, both projects aim to establish extensive quasi-sovereign structures within the platform and parallel to the democratically legitimized societal institutions.

As a result of the combination of these factors, especially the leading internet groups are now far more than infrastructure providers that provide connectivity; media groups that have a broad portfolio of their own media offerings; or advertising, retail, hardware and service companies that continue to generate the majority of their revenues and profits with their traditional businesses. The few large platforms that today both enable and shape large parts of private and public life on the internet can be understood as *differentiated societal systems with a distinct institutional foundation*, which the companies as platform operators structure and control to a considerable extent and by means of their own rules, regulations and committees—right up to the assumption of quasi-sovereign tasks by the companies that, hitherto reserved for state authorities, so far largely skirt democratic legitimation and control.

4 Outlook: Regulation of platforms? Possibilities and limits of political intervention

The economic but above all social structuring and regulatory power that the leading internet companies have attained with their platforms is camouflaged rather than disclosed by non-hierarchical notions of an internet governance that focus on “low formalization, heterogeneous organizational forms, large numbers of actors and massively distributed authority and decision-making power” (Van Eeten and Mueller 2012: 730). This is contrasted by what I have discussed in the previous chapter and what I refer to as *regulation by platforms*: the intentional structuring and regulating not only of economic markets but also, and in a much more comprehensive way, of larger societal relations and processes, carried out by internet companies as platform operators and aligned with their economic exploitation interests.

Of course, this does not mean that these regulatory activities could determine the actions of other actors, nor that the internet companies with their platforms could act independently and disregard collective user behavior, public discourse and opinions, political interventions or the interests of other economic actors. Power may be distributed very asymmetrically, as in the case here, but it is never absolute or something that some have and others do not. Instead, power is always an expression of complex, often contested and often volatile societal relations that benefit some more so than others (Dolata/Schrape 2018). These others and their rooms for maneuver are at the center of the concluding remarks. With a focus on the large and most influential platforms, two levels of social and political intervention will be distinguished and four possibilities of political intervention will be explored.

I refer to the first level as *civil society intervention*. Internet companies have to react in rapid succession not only to changes in the very dynamic technological and economic environments in which they operate but also to social or political pressure, which has increased significantly since the 2010s. For one, their large platforms are existentially dependent on the contributions, activity and acceptance of their users, some of whom adopt the platforms’ offerings in rather idiosyncratic ways, repurposing them or even rejecting them, and who must hence be treated with corresponding sensitivity by the platform operators. Secondly, the leading internet corporations have also been under the intense observation of a more and more attentive media and political public. Investigative journalists, net-political blogs and the classic media now deal extensively with the various facets of their social and economic might. Among these are: nontransparent business practices and dominant market positions, controversial social guidelines and opaque algorithms, repeated violations of privacy and user surveillance, data scandals (such as those surrounding Cambridge Analytica), the dissemination of fake news or the use of platforms to influence elections (such as the US presidential election in 2016).

In recent years, the media, in particular, but also other civil society actors have thus contributed to a much more critical assessment of platforms, both in public discourse and in the political realm. This cannot simply be ignored by the platform operators, especially when these assessments evolve into serious demands for greater public control and state regulation of the platforms. The internet companies, above all Facebook and Google, have responded to this with a series of transparency initiatives and attempts to integrate civil society actors more closely in the institutional and regulatory structures of their platforms (for example, by setting up the Oversight Board at Facebook) (Gorwa 2020).

The effects that can be achieved by civil society interventions should not be underestimated: in cases where they are brought forward with the appropriate force and met with great social acceptance, they can trigger rapid and in some cases substantial adaptation reactions among the internet companies—albeit without calling into question their structuring and regulatory sovereignty. The companies can react to civil society pressure in a voluntary way, according to standards which they themselves set and at a time they consider to be opportune. This remains non-binding and has nothing to do with the *regulation of platforms*, which, in contrast, is essentially based on the enforcement of democratically developed and legally binding public rules with which platform operators must comply.

In parallel to the increase in interventions involving civil society, the second half of the 2010s has also seen—comprising the second level of external influence—an increase in government efforts to achieve *political regulation and control* of the major platforms. In Europe, since the mid-2010s, such activities have been concentrated in two main areas of action:

1. Attempts to *limit economic market power*, brought forward above all by the European Commission. The latter has pursued a series of infringements of EU antitrust law by internet companies and has repeatedly imposed heavy fines, especially on Google and on Facebook, among others, for an abuse of their dominant position in online advertising, with search engines or through the mobile operating system Android (Viscusi/Harrington/Sappington 2018: 404-419; Haucap/Stühmeier 2016; European Commission 2019);
2. Efforts for legal and regulatory *intervention in the social regulatory sovereignty of platforms*—for example, in the form of the European General Data Protection Regulation (GDPR); the “right to be forgotten” on the internet, introduced by the European Court of Justice, in a landmark decision; or the German Network Enforcement Act (NetzDG), which obliges the providers of leading social networks such as Facebook, YouTube or Twitter to block illegal content in a timely manner or to remove it from their platforms and to report on it on a regular basis (Schulz 2018; Chenou and Radu 2019).

However, the scope of these political interventions has so far remained extremely limited. Paradoxically, these attempts by the state to intervene in the social regulatory sovereignty of platform operators have tended to strengthen the regulatory power of the platforms, namely, by delegating sovereign functions of jurisdiction and enforcement to private sector actors and by providing this shift with political legitimacy. Germany's Network Enforcement Act, for example, has done little to change the fact that companies such as Facebook, Google or Twitter largely decide for themselves which content they delete and which they do not, yet has, at the same time, strengthened the companies in their role as content moderators and as decisive instances of content evaluation or selection. Further, the enforcement of the right to be forgotten has also been assigned to the platforms themselves, which have thus become more integrated into the legal system and, as private-sector organizations, have been entrusted by government with quasi-sovereign tasks. Chenou and Radu (2019: 74 and 96f.) have accurately described this as the "outsourcing of important governance practices to private intermediaries." The authors have also pointed out the dependence of state regulation on the willingness of platform operators to cooperate:

In creating new rights, public actors foster strong regulations they may not be able to implement themselves without the collaboration of private actors. More than a transformation of the state, the resulting hybridization of governance also entails a transformation of private actors. In the process, some private actors are given new responsibilities in the governance of technologies and technology-enabled markets. As the case of the "right to be forgotten" showed, Google becomes inserted in the European legal system as a first instance to look at cases of online privacy protection triggered by individual requests.

Overall, the political regulatory approaches, to date, are not suitable for substantially correcting or controlling the regulatory sovereignty of the platform operators. More far-reaching proposals, the implementation of which could lend the state somewhat more weight in this very unequal private-state regulatory constellation, are being discussed but have not yet concretized into any political form. These include:

3. The *radical unbundling of the widely networked platforms of the internet corporations* — such as the decoupling of YouTube and other platforms from the Google corporation, or the splitting up of the ecosystem of Facebook, Instagram and WhatsApp (Reich 2018). However, such considerations, which would, admittedly, involve a rather brutish dismantling, should be justified less by a limitation of these corporations' economic market power than by the aim of limiting their extraordinary socio-political structuring and regulatory power;
4. Setting up *public supervisory and regulatory bodies*, for example, at the European and US levels. Controlled by parliament and staffed with recognized and publicly appointed experts, these authorities should be set up as democratically legitimate alternatives to the corporate supervisory bodies (such as Facebook's Oversight Board) and be equipped with far-reaching information, control and sanctioning powers. They could also be tasked to disclose, control and impose conditions on

algorithmic filtering functions, ranking and rating principles, as well as community standards, and the search and selection criteria based upon them (Dolata 2018a).

However, even the proposal for public supervisory and regulatory authorities would not, if implemented, lead to a private-state co-regulation of platforms on an equal footing—if only because of the extreme information and knowledge asymmetries of the parties involved. Indeed, political regulators are much less knowledgeable about the extensive socio-technical systems and systemic contexts they are supposed to regulate than those who have developed and now operate these systems. Hence, in this case, too, the responsibility for structuring and regulating economic and social processes on the internet would remain primarily with the platform operators. But at least then their activities could be regularly evaluated, controlled and sanctioned by a democratically legitimized body.

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