

# Platform logic: The need for an interdisciplinary approach to the platform-based economy

*Jonas Andersson Schwarz, Ph.D.*

*Dept. of Media and Communications, Södertörn University, Stockholm, Sweden*

## Abstract [<200 words]

The article synthesizes various schools of thought on digital platforms, ranging from critical political economy to information systems management and design studies. I provide both a descriptive model of structural ramifications of platform-based infrastructure and an epistemological rationale for studying it. The paper tentatively outlines key structural principles and a set of hypotheses: I propose that digital platforms implement a twofold logic of (micro-level) control and (macro-level) domination, while at the same time having a range of generative outcomes. I enumerate different platform business models and attendant degrees of market dominance. I conclude that, in order to assess platform logic for academic or regulatory purposes, a range of problems pertaining to information access have to be addressed, and equally so from the point of view of dominant platform companies, whose impact and leverage might otherwise be wrongly estimated or misinterpreted. Moreover, in order to understand the vast range of contingencies at play in platform logic, multidisciplinary is essential: The understandings needed for equitable regulation can be achieved only by synthesizing data science, media studies, economic sociology, and philosophy with studies of infrastructure, management, and design.

## Keywords

platform management, platform regulation, media ecology, infrastructure, multi-sided markets

## Introduction

This theoretical paper aims at providing a more comprehensive view of what digital platforms are and what structures they are embedded within, resulting in a set of typologies and a schematic overview of key principles as regards the conditions for platform management and what is at all knowable about it, addressing various aspects of ontology, epistemology, and the societal power of digital platforms.

By combining a critical political economy and policy/governance studies perspective with insights from science and technology studies (STS), information systems (IS) research, and media theory, I will focus on specific material aspects of digitization and informatization (Kallinikos 2006) alongside a sociological understanding of the politics that emerge from these

infrastructural arrangements (Boullier 2015, Cohen 2016, Langlois & Elmer 2013, Pasquale 2015). In recent years, various industries have become subject to platformization (e.g. house, car, and labor sharing), a process often referred to through the popular term ‘disintermediation’ (Goodwin 2015). ‘Digital technologies have made possible a “platformization” of infrastructure and an “infrastructuralization” of platforms’ (Plantin et al. 2016: 3). Since platforms mediate social relations by translating them into code, it could be expected that many of the particulars observed in digital platforms in the internet and media sectors should be shared also by those more novel arrangements.

I propose that there is a particular logic inherent to digital platforms, across the spectrum of their appliance and regardless the size and type of the platform actor in question. This logic is twofold; it rests on an interplay between local instantiations and global repercussions, something that Tilson et al. (2010) have called ‘the paradox of control.’ When focusing on the local, intraplatform mode of operation, the digital character of platforms is seen to strongly determine structure; to all intents and purposes, an absolute form of control—totalitarian even. Contrastingly, when focusing on the cumulative, geopolitical power arrangements arising in platform society, patterns can be observed that suggest similarly worrisome tendencies towards market dominance, colonization, and consolidation. These two tendencies are intertwined: Unsurpassed local efficacy, combined with network effects, produces market leverage—while market penetration enables richer data, thus more efficacy.

However, these potentially hazardous aspects of digital platforms are obscured by the societal gains that have been empirically documented and seem to be generally assumed by ordinary users. These positive aspects are often promoted by proponents of platform capitalism, and by the platform companies themselves. Digital infrastructure is generative (Yoo 2013) in that market entrants are generally allowed to build new services—new platforms, even—on top of pre-existing platforms. Relative latitude can be attained when many platforms are allowed to interact, effectively creating ecosystems.

One critical question that arises is to which extent single corporations control entire panoplies of interconnected platforms. Many of the newer, smaller platforms are dependent on pre-existing, larger ones, whose dominance is further solidified. Further, as “platform giants” encroach on ever-more sectors, how tenably can they maintain public legitimacy; not only in terms of civic attitudes and discourses, but regarding institutional actors—and regulators—as well? Ultimately, the ability to comprehensively review these actors is crucial—raising questions of access, methods, epistemology, and multidisciplinary. By synthesizing data science with media studies, economic sociology, philosophy, and STS, more efficient, realistic, and durable understandings can be sought.

The paper is intended as a contribution to a more equitable discourse on platform management. Cohen (2016: 382) has recently argued that in order to

reinvigorate antitrust/competition law in the era of informational capitalism, a willingness to rethink major assumptions about the causes and effects of power in information markets is required; not only ‘investigation of the kinds of power that information platforms wield,’ which I will mainly focus on here, but also a ‘more open-minded discussion of corrective measures’ (ibid.).

From a regulatory point of view, the crux of the matter is that platform capitalism gives rise to not only one, but several information problems: To begin with, the empirical evidence of societal gain is no predetermined matter; as Edelman & Geradin (2015), Morozov (2013) and others have demonstrated, any such suggested gains from platforms must be demarcated in terms of who the beneficiary is, in what ways, etc. Second, in order to regulate in an equitable, efficient way, regulators must be able to know the true market dominance of platform actors, especially those platform giants that have seen a rapid ascendance and dominate various markets in parallel, often globally. Actors like Alphabet explicitly admit that the infoglut (Andrejevic 2013) held by them is key to their market dominance; for example, by having behavioral mobile internet user data, Alphabet can excel in seemingly unrelated sectors like urban and traffic planning. This means that undisclosed steps can be taken towards rapid intrusion into unexpected sectors, only knowable *ex post facto*. While it would be preposterous that regulators should know business strategies in advance, the radically altered conditions for this kind of market entry begs new questions as for how antitrust/competition legislation should be formulated and implemented in the digital era.

Moreover, the lack of access to the actual workings of platforms means that researchers cannot know to what extent Facebook user data, for example, is really as extensive as both Facebook and its critics assume it to be—and, more importantly, what the actual effects of Facebook-filtered media dissemination are on the formation of public discourse across various countries.

Ultimately, my argument is that platform actors will be compelled to acquire and maintain public legitimacy for their endeavors, especially in the light of conceivable risks like downturns in popularity, sudden populist outcries, or government overregulation. This legitimacy problem is directly connected with an information problem, since platform actors need to engage in public relations and diplomacy with the surrounding world, both in order to accurately verify potential concerns that emerge among their detractors, and in order to appease regulators, who might otherwise act on exaggerated estimates. In order for regulation to become smarter, platform actors will have to be compelled to allow for more transparency than they presently do, while regulators will need to absorb from the emerging, already extensive scholarship on platforms.

## Background

Digital platforms have been at the center of business and management discourse for at least a decade (Evans et al. 2006, Parker et al. 2016). Narrowly defined, a ‘platform’ would be a digital infrastructure (hardware and/or software) on which different applications can be run, or (by wider definition) allowing for a finite and clearly defined set of uses. Technically, it is a surface for innovation, on top of which new actors can develop additional services or products; in many ways a utility that generates new societal functions and business opportunities. Economically, so-called multi-sided markets (Rochet & Tirole 2003, 2006) are enacted, enabling transactions between actors who would otherwise struggle to find each other; a surface on which mediated exchanges can take place. In an ontological sense, a platform can be envisaged as a (technologically and materially constituted) “stage” that gives actors leverage, durability, and visibility. A platform is a *topos*; a place where residence is held, enabling strategic (in contrast to tactical) advantages. Gillespie (2010) provides a succinct typology, with an eye to media studies in particular, going beyond the merely computational definition (a system in which computer programs can run), emphasizing the architectural (a surface or structure on which action can take place), the figurative (a [metaphysical] foundation for opportunity, action and insight), and the political (a set of principles on which a societal actor takes a stand in appealing to the public). In what follows, I too will argue for the merit of such an eclectic understanding—not least in order to anticipate the new, deeply political power arrangements that are at stake. van Dijck (2013: 29) has importantly noted that ‘a platform is a mediator rather than an intermediary,’ because it shapes sociocultural performance rather than merely facilitating it.

A ‘platform company’ is a company whose primary mission is to provide one, or a set of digital platforms in order to provide marketplaces, distribution of media content, and/or coordination of activities. I will sketch out the three basic, schematic business models behind virtually all platforms: the *ad-financed model*, the *marketplace model*, and the *subscription model*. ‘Platformization’ (Ballon 2014, Helmond 2015) is the societal trend that more and more companies, even outside the technology and internet sector, are starting to provide digital platforms and attendant business models; the material results are evident in the re-centralization of the digital environment, where device mobility and cloud computing are trends that seem to develop in lockstep with more tethered operative systems and less local latitude (Zittrain 2008, Anderson 2010).

It is, nonetheless, important to note the heterogeneity of digital platforms. Gargantuan actors<sup>1</sup> are running what could be called platform-

---

<sup>1</sup> As for ‘platform giants,’ the companies primarily invoked in this article are the ‘Frightful 5’ (Manjoo 2016a): Alphabet, Amazon, Apple, Facebook, and Microsoft.

based “superstructures” creating infrastructural conditions with global validity, while lesser actors (Uber, Airbnb, Spotify, Netflix) are, in effect, partially dependent on these larger platforms. Technologically mediated agency is situated in complex ‘platform ecologies’ of mutual interplay, co-dependence, and productivity. Further, platform companies are directly dependent on either venture capital or stockmarket valuations. Singular platforms (particular surfaces) should not be confused with information infrastructures (ecosystems). Moreover, despite many shared, underlying principles, platform capitalism is variegated; some of the global giants seem more willing than others to make principled decisions and engage in public debates over privacy, editorial commitments, and communications policy.

### My argument

While platformization embodies several familiar capitalist developments (consolidation, economies of scale, monopolism, rent-seeking), multi-sided markets comprise new challenges for economic regulation (Evans & Schmalensee 2013). Digital mediation also comprises entirely new aspects: flexibility and so-called programmability (Hanseth & Lyytinen 2010) at the same time as absolute control (Chun 2006, Lessig 1999). The fact that measurement data is automatically generated at the same time as the infrastructure is used is a genuinely new phenomenon, resulting in so-called ‘big data’ which has been in many ways idealized and charged with almost-mythical expectations (Boyd & Crawford 2012, Boullier 2014), not least since digital systems have the quality of being possible to scale, virtually endlessly, and since platforms directly benefit from so-called network effects that make the platform exponentially more valuable as more people use it.

Developments can be observed that are of direct relevance to governance studies: monopoly tendencies inherent to the present network economy, harnessed by a handful of actors currently appearing to be embroiled new forms of oligopoly, or even an emergent internet oligarchy (Gilens & Page 2014, Jin 2015, Manjoo 2016a, 2016b). This should lead us to ask whether cultural imperialisms of old are replaced with new ones.

Moreover, digital platforms act not only as *societal utilities* (new engines of social order) but, at the same time, as *knowledge operators* (introducing new conceptions of truth and knowledge; Boullier 2014, Langlois & Elmer 2013). Hence, whole disciplines such as sociology and media studies are challenged by platformization, while a regulatory gap opens up, as many pundits are arguing for “smart” infrastructures having to be matched by similarly smart regulation (Cohen 2016, Edelman & Geradin 2015, Mansell 2015).

Considering all of these qualities, platformization—or, more aptly, platform logic—should, in many respects, be understood as a key principle of economic control for our time, even comparable to Fordism and Taylorism. It is currently adopted by all kinds of companies, almost always in order to gain

some kind of exclusive control over the specific market or feature that the company in question is providing.

In sum:

- 1) Due to their code-based nature, digital platforms enable a form of total control, which—locally, on each respective platform—enforces a binary, “all-or-nothing” logic: Either you are on the platform or not, either you have a certain status or not, either you can do a certain thing or not.
- 2) Due to network effects (primarily) but also design aspects like user convenience, platforms amplify the tendency towards monopoly that exists in capitalism.
- 3) Due to the automated generation of data, and intelligence that can be extracted from it, platforms enable entirely novel forms of synergy for those who own and control this data.

From a regulatory point of view, the fact alone that individual markets are dominated by singularly efficient actors is unproblematic, as long as the market effects are monitored and properly regulated (Edelman & Geradin 2015). However, given the concept of ‘platform ecologies’ (below), what is more important is that one and the same company does not dominate markets that would, by conventional reasoning, be nominally separate—but are not, given the present platformization. Reforms in antitrust/competition law are most likely needed (Cohen 2016), since seemingly unconnected markets or sectors can, in fact, be connected “behind the scenes.” One example would be Microsoft’s purchase of LinkedIn, which enables using LinkedIn’s data as a competitive resource regarding Microsoft’s corporate strategic rationality in ways that are not fully transparent.

When platform companies have so much global dominance that they become ‘utilities,’ i.e. vital infrastructural connectors, such companies are privileged in that they stand to benefit from numerous positive feedback loops and synergies, without necessarily appearing to break any antitrust laws: They do not formally have to diversify by buying new subsidiaries—instead, they offer (or require) smaller competitors to use their platform infrastructure, with the proviso that they, as utilities, stand to harvest the data generated. One example would be the common practice of platforms to utilize Facebook’s social login in order to vet their users. Not only do the singular platforms stand to gain social data from Facebook, which they can integrate in their shaping of the service offered, but Facebook stands to gain new data about the user from each platform in question, further enriching Facebook’s own profiling.

This also means that innovation among platform companies often takes place by fusing intelligence from one sector with that from another one; an intensification of many of the already observable defining characteristics of flexible specialization and postindustrialism/postfordism. For regulators, much of this innovation is literally impossible to anticipate; preempting it would mean that the regulator would have more innovative capacity than the

innovating organizations that it is set to regulate. Such innovation can thus only be regulated after the fact (*ex post facto*). One example would be Alphabet managing its self-driving cars based on the company's vast, real-time population data, in order to anticipate movements in the urban milieu, such as traffic jams.

An important factor to counter tendencies towards monopoly, which is acknowledged by Doganoglu & Wright (2010), is that regulation should ensure service providers the freedom to offer their goods and services on multiple platforms in parallel (i.e. barring platform operators from exclusively tying service providers to their own platforms), as well as consumers' freedom to choose among competing platforms. Both of these measures as to prevent singular platform operators to get too high-handed a control over the entire supply on offer, or over entire markets. Also, the concept of 'universal service' could be broadened, as to include a wider definition of what should be deemed minimum requirements for service providers (Edelman & Geradin 2015).

### Platform ecologies

Once upon a time, Google and Facebook were digital platforms simply providing search and social networking; Amazon was a retailer; and Apple a manufacturer of digital hardware. However, these actors have long since diversified into various other markets, while also functioning as platforms on which other platforms are, in turn, built. Platforms are situated in ever-wider ecologies of mutual interplay, co-dependence, and productivity. Financially, platform companies are dependent on either venture capital (privately traded companies) or stock market valuations (publicly traded companies). Facebook, for example, can make stunning investments thanks to credit-based liquidity resulting from the company's extraordinarily high valuation on the stock market. The ecology metaphor can be applied also to the telecoms industry, enabling platforms by dispensing with a relatively free flow of data in cables and radio links. Leading platform companies like Amazon, Apple, and Alphabet have large stakes in providing purely infrastructural services (operative systems, standardized hardware, server hosting, interpersonal audiovisual communications), thus encroaching upon services that the telecoms industry used to exclusively provide. This, in turn, has enabled a range of newer, smaller platform companies, some of them so-called 'unicorns' (i.e. start-up companies valued at over \$1 billion). Spotify, which has historically relied on its own servers, recently migrated its infrastructure to the Google Cloud Platform. Similarly, Netflix, while accounting for 37 % of all Internet traffic in North America during peak viewing times, is dependent on Amazon Web Services for its hosting and traffic.

The consolidation towards a more oligopolistic internet is not only palpable for citizens but for institutional market actors as well

(paradoxically, many of these are platform companies). A typology of the various degrees of dominance over the user-driven exchange is possible, outlining rather markedly different classes of actors, depending on their respective degree of dominance:

- a) Dominant actors in that their platforms are popular, yet voluntarily chosen nodes in open systems (e.g. search engines, web-based indexing pages)
- b) Dominant actors in that their platforms are *de facto* systems that the users are forced to approve in order to participate (e.g. Spotify, Netflix)
- c) Dominant actors in that their systems are not only exclusive, but also so widely-spread that they dominate the global landscape (e.g. Apple iOS, Android)

In the platform-based media economy, circulation thus occurs on many levels, in many interlocking feeds and flows. While hosting and streaming of media content is facilitated by local, optional platform (type *b*, above; Spotify, Netflix, Apple iTunes), both the act of consumption and the exchange of metadata (linking and referencing to the hosted media content) takes place on globally consolidated platforms (type *c*; Facebook, Android, Apple iOS), which should clearly be seen as infrastructural systems. In addition to the above typology, three categories of business models in the platform economy can be roughly distinguished:

- I) Ad-financed, “free” platforms.  
Revenue: mediation of user attention to advertisers (e.g. Facebook, Google, Spotify’s free version)
- II) Transaction facilitators.  
Revenue: percentage/fee on every transaction (e.g. Airbnb, Uber, Kickstarter)
- III) Subscription services.  
Revenue: continuous direct payments from users (e.g. Netflix, Dropbox, Google Drive, Apple Music, Spotify’s premium version)

It is not surprising that the leading platform companies are characterized by an avid tendency to colonize and converge into ever-new markets. The all-purpose applicability and interchangeability of data precipitates a highly expansive nature of platform enterprise. Platformization thus seems to be something more than simply a transformation of the media economy in a conventional sense. It appears as if we are dealing with an organizational principle, which, like Fordism and Taylorism before it, is becoming actively embraced by all kinds of actors, standing in all kinds of relationships to each other—direct competition as well as interdependence. Many platform companies are heavily financialized—enjoying high market valuations, in effect making their operations highly dependent on financial markets and sustained by credit leverage—which makes recent forays into banking (Uber providing subprime auto loans, Amazon providing credit cards and tiptoeing into banking with student loans) far from unexpected. By way of example, I

list three areas of societal infrastructure appropriated by platform giants:

#### Platform capitalists encroaching on publishing infrastructure

While internet companies have been expanding into various eclectic markets since long ago, all of this is, arguably, most acutely felt in the media sector, where, throughout the last two decades, the most typical platforms in the digital media business have been ad-funded systems (linking consumers with advertisers) and internet portals (linking users and service providers). The foothold of platforms is clear when observing the ways in which Facebook dominates media circulation and use: publishers increasingly have to rely on Facebook circulation in order to get their stories seen and read (Helmond 2015), while users in several developing countries are compelled to use the Facebook 'Free Basics' platform as an ISP (Katyal 2016) and small companies and event organizers throughout the world choose to let their online presence exist by way of Facebook pages alone. In order to advertise something online today, companies have to directly or indirectly use Google and Facebook services (video distribution, search, social sharing, web adverts).

Tellingly, as established media powerhouses worldwide (e.g. BBC, Springer, The New York Times, Schibsted) are challenged by transnational platform giants, one key solution has been (at least according to their publicly stated intentions) to build proprietary platforms of their own. Alternatively, the solution has been said to simply begin collaborating with the tech giants, as Facebook's budding *Instant Articles* and Google's *Digital News Initiative* lay testament to. But relying on renting space from tech giants is risky. The former strategy, while costly, should hence be understood as a way to retain control, and at the same time new business opportunities (improved audience segmentation, enabling more personalization of editorial content and advertising).

All of these developments are closely surveyed by media and communications researchers, not least since editorial dissemination is the life blood of opinion, public life, and democracy.

#### Platform capitalists encroaching on infrastructure for data traffic and storage

Attempts at building dominant platforms have benefited from the development of a more locked, centralized internet (app-based software, tethered hardware; Anderson & Wolff 2010, Zittrain 2008), where structural actors increasingly offer exclusive hosting systems for all sorts of activities—social exchange, trade, or various services that act to locate and/or render more efficient various types of resources. For decades, leading Silicon Valley economists have implicitly recommended startups to not only offer a service, but to strive to become synonymous with a certain service, market, or network in its entirety (Kelly 1997, Shapiro & Varian 1999, Thiel 2014). The more structurally indispensable one becomes, the more secure would the value of one's infrastructure be—quite regardless of the individual value of

those individual bits that circulate, as long as critical mass is attained. When platform companies encroach on hardware and infrastructure, effectively becoming utilities, e.g. offering ‘cloud services’ like streaming and hosting, the economy generated resembles a rentier economy, where owners of “platform real estate” lease space while maintaining the strategic upper hand that the creditor always has in respect to the debtor.

#### Platform capitalists encroaching on social infrastructure

As noted by Matwyshyn (2013: 407), digital intermediation has shifted from ‘merely content intermediation [towards] something far more sweeping and impactful: simultaneous intermediation of user identity in both online and offline contexts.’ Facebook’s ‘social login’ is the obvious example; an estimated 92 % of websites prefer to provide Facebook as a social login option, and platforms such as Netflix, Spotify, Yelp, ESPN, and Uber exclusively support Facebook as their default social login option (LoginRadius 2016).

These tendencies have been well-documented in the academic literature, as internet-based companies have transformed themselves into ‘social intermediaries’ (Kahn 2010) and ‘infomediaries’ (Morris 2015). Numerous researchers (e.g. Young & Quan-Haase 2013) confirm that social media platforms encourage what Cohen (2012) has called a ‘performative culture,’ where a controlled presentation of the self is tactically used in order to sustain different types of social relationships. Importantly, the rules of engagement for these tactical performances are directly conditioned by the platform design (Bucher & Helmond 2017).

Platforms not only control the information that users are allowed to both access and share, as well as the reach of that sharing, and the context around available user information (Nissenbaum 2009). More worryingly, from a regulator’s perspective, the reach of this sharing and access involves unforeseen information from both virtual and real space interactions, which is in itself meta-information (i.e. information about the communication taking place) that the platform companies refuse to transparently divulge to any third part, prohibiting researchers and regulators to get a representative overview of what effects Facebook would have on public discourse, for example.

#### Local instantiations, global repercussions

Platform logic rests on the *technical capacity of unyielding local control*, and produces *extreme concentrations of global dominance by a handful of corporate actors*. If we take these two phenomena as worrisome, why are these tendencies normatively allowed to take place in the first place? Why is society collectively acquiescing to this development? Arguably, because of the efficacy, convenience, and generativity arising the intermediate step linking the two, as Yoo (2013) has persuasively shown. In platform-praising discourse, what is often highlighted is a new form of “plug and play”

management dynamic, where Application Programming Interfaces (APIs),<sup>2</sup> enable service providers to talk to one another and coordinate action. Platforms are able to interact with and even build upon one another in various creative ways.

Platforms are charged with a ‘paradoxical tension between the logic of generative and democratic innovations and the logic of infrastructural control’ (Eaton et al. 2015: 218). Apple and Alphabet currently have to allow for quite significant degrees of freedom of innovation among the app startups crowding both App Store and Google Play, but there is nothing absolute to this degree of freedom. Tilson et al. (2010) use the ‘love-hate’ relationship that software developers have with the Apple iOS platform as an example: ‘Apple’s iTunes platform [...] represents a “different” balance of controls, enabling on one hand a generative platform supporting millions of users and hundreds of thousands of applications, while on the other hand exercising strict control over application approval, payment terms, architectural rules, and many aspects of the internal operations of applications’ (p. 755).

Platform power is ‘the power to link facially separate markets and/or to constrain participation in markets by using technical protocols’ (Cohen 2016: 374). Platform intermediaries are able to use profiling to segment customers in previously unimaginable ways; ‘a citizen’s search activities may result in referrals to content “properties” through a variety of intermediary sharing arrangements that support targeted marketing and cross-selling’ (Mansell 2015: 2).

In markets where major platform actors have come to dominate, they hedge new entrants from acquire market share in various ways. Partially, by offering excellent infrastructure: convenient, (i.e. fast, flexible, and affordable) applications, combined with relative technical protectionism (discouraging or banning competing protocols and/or applications), and the technocratic, code-based control described above, ensuring compliance. Partially, by having the benefit of a critical mass of users (which generally requires presence in big national markets), combined with relative trade protectionism (barring bigger transnational competitors to enter national markets).<sup>3</sup> This might explain why, while the world’s leading digital platform businesses have a combined market capitalization of \$4 trillion, only 4 % of this value has been generated by European firms (Evans & Gawer 2016).

*It is true that European regulators make no secret of their desire to see domestic businesses gain a competitive foothold, but it is also true that U.S. stances on antitrust and data protection have permitted a race to the bottom in the accumulation of platform power and that the relative U.S. laxity has disadvantaged European Internet businesses. (Cohen 2016: 382)*

---

<sup>2</sup> Software interfaces that enable data exchanges with third parties (Helmond 2015).

<sup>3</sup> Investor analyst Benedict Evans seems to confirm this:

<https://twitter.com/BenedictEvans/status/762008482069360644>

#### Micro (local/intraplatform) level: technocentric control

Digitization enables overt standardization and tracking, as regards measurements of what takes place, where and when. On the platform, control is absolute: none of the participating nodes should be allowed to abuse their relative freedom by using loopholes or glitches. In order to generate revenue from the many, sprawling, seemingly unpredictable interactions taking place on a platform, certain standardized rules and metrics have to be imposed: All transactions must be traceable and hence billable. Further, in order to make possible some kind of economy of scale, compliance has to be automated: Hardware setups and software algorithms automatically assign billing orders to your transaction. All of these tendencies can be observed in the simple example of Airbnb, where all communication between hosts and tenants is forced to take place on the platform, and is automatically filtered and monitored so that no alternative means of communication (email addresses, phone numbers, competing services) are even mentioned.

Hence, platform control could be defined as *exclusive control over the surface on which the exchange takes place*. This does not mean that whatever happens on Facebook is determined by Facebook, but it does mean that Facebook has the irrevocable and absolute sovereignty to boot you out if you break the rules there. Most likely, no human being will ever make this sovereign move; a bot will flag you based on code that is designated to make automated reactions to suspicious behavior. After that, a human being, following protocol, will see if your behavior indeed deviates from the ‘community rules.’ Thus, control is never exerted by sovereign humans; even the manual content moderation that human beings perform<sup>4</sup> is designated to imitate machinic, protocol-based behavior.

While monopolies, consolidation, and market dominance are familiar phenomena within capitalism, I would argue that what is genuinely new with digitization is the logic of total control that implemented when law and norm is crystallized into code (Lessig 1999). Algorithmic management has been described as, for good and for bad, ‘better than law’ (Chun 2008: 66). It is thought of as an inhuman, perfect form of institutional functionality, producing a form of ‘technocentric equality’ where individuals are freed from subjective decision-making (Lianos 2012: 31). Platforms in many ways resemble opaque black boxes (Pasquale 2015): The surrounding world is not allowed know what they do; researchers and regulators are denied proper access, while users and developers are routinely punished for peeking inside.

#### Meso (inter-/transplatform) level: generativity

Despite the strong form of local, platform-specific technical control inherent

---

<sup>4</sup> Indisputably, such content moderation is suffused with ambiguity, which was shown in the debacle over Facebook’s ‘trending topics’ moderation practices in early 2016.

to digital code, some of the academic literature highlights the relative lack of control over the ways in which platforms develop over time and interrelate with other platforms (Tiwana et al. 2010). IS scholarship tends to emphasize the emergent, generative, convergent and self-replicating properties of digital ecosystems (Yoo 2013), inasmuch as reprogrammability and data homogenization is thought to give rise to open and flexible affordances (Yoo et al. 2012). As technical architecture, platforms allow for large sets of IT capabilities to be crammed into a relatively well-bounded and controlled system, which can be continuously re-designed and expanded (Hanseth & Lyytinen 2010). While the design of a platform often starts off with a bounded set of closed specifications, it often grows in complexity over time, as platforms are expected to meet varying user needs and to facilitate various forms of compatibility. Different platforms are differently bounded, differently restricted; the degree of generativity really varies. Taking the local perspective, technical restrictions abound (platform rules and purely technical filters like APIs), while, when taking a more general view, platforms appear nonbounded in the sense that new artifacts can be generated outside of the platform—entirely new platforms even—when platforms form part of larger ecologies.

Thus, it is important to distinguish singular platforms and applications from the much wider, more complex, and more dynamic information infrastructures that they make part of. Sometimes, when people praise the relative openness and flexibility of the Apple or Google ecosystem, in the same breath they confuse this with the singular platforms in question. While companies like Apple and Alphabet are, in effect, complex arrangements of interrelated platforms (Sims 2015), each such platform might, however, be rather restricted in terms of sheer functionality. An iPhone forms the nexus of a diverse information infrastructure, yet some of its constituent platforms (such as the iTunes interface) might in fact be highly constrained, path dependent, and not at all flexible.

#### Macro (supraplatform/cumulative transplatform): geopolitics

The omniscient technocratic control described above (micro level) only applies to platform-specific functions. The efficacy, convenience and richness of a particular platform often result from the larger information infrastructure that it rests upon. This means that in order to make a more efficient, convenient, richer platform, the competitor would have to be in charge of a superior information infrastructure to begin with. Obviously, this means that the playing field is very rarely an even one. Local platform control is good, but it is in many ways trumped by this form of ‘supraplatform power.’

Regardless of the circumstances of their inception, the competitive goal of any platform company is to seek a monopoly in its respective niche (Thiel 2014), a goal fully consistent with capitalism. This does not impede competition, quite the contrary. Some very real oligopolistic competition is

taking place: battles over e.g. consumer gadgets (iOS vs. Android; Apple TV vs. Google Chromecast etc.), user-installed ad-blockers (Google and Facebook opposing blocking while Apple acquiescing to it), global server infrastructure (Amazon Web Services vs. Microsoft vs. Google), and messaging infrastructure (Facebook Messenger vs. Snapchat vs. Apple vs. conventional telecoms).

Clearly, platform capitalism constitutes a remaking of the 'geopolitics of information' (Schiller 2015) that have been a facet of US-dominated global power since the Cold War. Not only does digitization enact advantages in terms of speed, liquidity, and diffusion. Since the data generated is fungible (Yoo 2013), digital materiality translates all activity into commensurate units, enabling the establishment of markets where there previously were none, and where e.g. local custom or status hierarchies would otherwise have constituted barriers. Jin (2015) outlines the concept of 'platform imperialism,' concomitant with what Hands (2013: 1) calls 'the capturing of digital life in an enclosed, commercialized and managed realm'—a new form of distributors and producers that the U.S. dominate, 'benefitting from these platforms in terms of both capital accumulation and spreading symbolic ideologies and cultures' (Jin 2015: 7).

In 2016, real concerns were expressed in leading newspapers that the (overwhelmingly US-biased) platform giants are not only enacting hegemony, but are on a road to 'usurpation through tech—a worry that these companies could grow so large and become so deeply entrenched in world economies that they could effectively make their own laws' (Manjoo 2016b). Transnational platform companies impose their own sets of rules, Manjoo argues, in effect harmonizing behavior and compliance among both citizens and institutions, far afield, to what are essentially US values (free trade, free expression, skepticism of regulation, customer loyalty over employee loyalty, consumption over creation, brand-new over second-hand). The debacle ensuing when Facebook's 'trending' news moderation was discovered to be manually curated also divulged similar bias (Levitz 2016, Thielman 2016).<sup>5</sup>

Still, in democratic societies, vast oligopolies tend to, over time, be restrained by government regulation. Alphabet and Facebook only pay microscopic tax in many of the jurisdictions where they are *de facto* doing business. However, the tide is changing, as arguments are made for 'smart regulation,' and many governments now seem to be after these lost possibilities to benefit the public good. I would argue that from a strategic point of view, governments currently have the upper hand when it comes to the tax evasion of platform giants—both in terms of rule of law but, more importantly, in terms of public legitimacy, since not paying tax leaves platform companies exposed to the whimsy of both national governments and public sentiment.

---

<sup>5</sup> However, it should be noted that Facebook has simultaneously been facilitating the reactionary demagoguery of e.g. Donald Trump (Mullany 2015).

Historically, mass media corporations have been engaged in similar quests for public legitimacy; struggles that are constantly ongoing, since public legitimacy has to be constantly upheld and maintained in the light of changing environments, and new challenges and obstacles. Wu (2010) gives several examples of a dialectical waxing and waning of regulation of what he calls ‘information empires’ throughout modern history.

That being said, during late 2015 and early 2016, several policy changes seemed to herald a turn towards somewhat greater legitimacy. After significant public debates, primarily in EU countries, Facebook made a number of strategic moves. After debates in Germany and Sweden over the liberal allowances for hate speech to proliferate on Facebook, the company publicly tried to maintain a more accountable image, and long-standing public critiques of the tax-evading policies of e.g. Amazon, Alphabet, and Facebook in the UK and France led to strategic decisions like the company’s recent decision to update its corporate structure, so that profits are routed through Britain and thus become taxable.

## Conclusion

It has been observed that platformization, thus far, has emerged largely thanks to the ‘permissionless innovation’ (Gobble 2015) enabled by free, open, and scalable Internet infrastructure. As we now stand ‘at an inflection point, a moment at which the no-holds-barred innovation of the Internet may or may not be allowed to spread to the physical world’ (ibid.: 62–63), the question facing policymakers is to what extent the resultant “megaplatforms” (i.e. Facebook, Alphabet, etc.) really permit much in the way of experimentation with new technologies and business models on top of their proprietary infrastructure, or—for that sake—equitable civic uses for it. Scholars have thus begun outlining what could be called ‘platform power’ (Cohen 2016, Gillespie 2010, Jin 2015, Mansell 2015). However, I argue that an understanding of such platform power cannot be complete unless one considers the embedded nature of digital platforms and the various dynamics at play. I have tentatively dubbed these dynamics ‘platform logic,’ which refers to the specific interplay between local determinants (code-based control) and global repercussions (networked accumulation, geopolitically determined consolidation), simultaneously precipitating all sorts of generative, emergent, largely unforeseeable effects on the trans- or interplatform scale. Just as one might overestimate or underestimate the control, pervasiveness, and/or dominance of platforms, one might struggle to account for the variegated types of platforms or, conversely, overestimate their similarity. Platform logic is one way to address these contingencies in a structured manner. The model I have provided is in many ways hypothetical and provisional, and will remain to be tested empirically in different settings and circumstances.

It is clear, after having consulted various strands of literature on the

subject, including both scholarly research and the more fast-moving business and technology press, that real intellectual progress can only be made by attaining a more multiperspective, diffracted view, considering the various aspects of the phenomenon in combination. By simply emphasizing the technical, one will see modularity, compatibility, flexibility, mutual subsistence, and cross-subsidization. By emphasizing the ownership and organizational control, on the other hand, the increasing consolidation, privatization, and enclosure are revealed. While a critical political economy perspective on internet and media development (Burkart 2017) has huge explanatory value, much can be learned from the more detached, generally less normative knowledge generated in management studies, design theory and computer science, especially since these disciplines often have an excellent grasp of the actual technical workings of the platforms in question—which is not to say that technology is in any way ‘neutral’ (Boyd 2016, Greenberg 2016); ‘platforms often reinforce the values and preferences of designers, either explicitly or implicitly, while sometimes clashing with the values and preferences of their intended users’ (Ess 2009: 16). Consequentially, a lot of added multidisciplinary value can be attained by cooperation between academies and business sectors, but only as long as critical detachment from (platform) business interests can be guaranteed.

## References

- Andrejevic, M. (2013). *Infoglut: How too Much Information is Changing the Way We Think and Know*. New York, NY: Routledge.
- Ballon, P. (2014) Old and New Issues in Media Economics. In: K. Donders, et al. (eds.) *The Palgrave Handbook of European Media Policy*, (pp. 70–95). London: Palgrave Macmillan.
- Boullier, D. (2015). Towards a third generation of the Social Sciences with Big Data? Society, opinion, and vibrations. Sciences Po médialab, Paris, April 10. [www.fmsl.fr/en/c/7308](http://www.fmsl.fr/en/c/7308)
- boyd, d. (2016). Undoing the Neutrality of Big Data. *Florida Law Review*, 67: 226-232.
- boyd, d. & Crawford, K. (2012). Critical Questions for Big Data. *Information, Communication & Society*, 15(5): 662-679. doi: 10.1080/1369118X.2012.678878
- Bucher, T. & Helmond, A. (2017). The Affordances of Social Media Platforms. In: J. Burgess, T. Poell, & A. Marwick (eds.) *The SAGE Handbook of Social Media*. London & New York: SAGE. Pre-publication copy.
- Burkart, P. (2017, forthcoming). Political economy of communication and digital rights research. In: Kearney, M.C. & Kackman, M (eds.) *The craft of criticism: Critical media studies in practice*. London & New York: Routledge.
- Chun, W.H.K. (2006) *Control and Freedom: Power and Paranoia in the Age of Fiber Optics*. Cambridge, MA & London: MIT Press.

- Cohen, J.E. (2016). The Regulatory State in the Information Age. *Theoretical Inquiries in Law* 17(2): 369–414.
- Eaton, B.; Elaluf-Calderwood, S.; Sorensen, C.; Yoo, Y. (2015). Distributed Tuning of Boundary Resources: The Case of Apple's iOS Service System. *MIS Quarterly*, 39(1): 217–243.
- Edelman, B.G. & Geradin, D. (2015). Efficiencies and Regulatory Shortcuts: How Should We Regulate Companies like Airbnb and Uber? Working paper.
- Ess, C. (2009). *Digital Media Ethics*. Cambridge: Polity Press.
- Evans, D.S. & Schmalensee, R. (2013). The Antitrust Analysis of Multi-sided Platform Businesses, NBER Working Paper 18783, doi: 10.3386/w18783
- Evans, D.S.; Hagiu, A.; Schmalensee, R. (2006). *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*. Cambridge, MA: MIT Press.
- Evans, P.C. & Gawer, A. (2016). The Rise of the Platform Enterprise: A Global Survey. Center for Global Enterprise. January.
- Gilens, M. & Page, B.I. (2014). Testing Theories of American Politics: Elites, Interest Groups, and Average Citizens. doi:10.1017/S1537592714001595
- Gillespie, T. (2010). "The politics of 'platforms'." *New Media & Society* 12(3): 347–364.
- Gobble, M.M. (2015). Regulating Innovation in the New Economy. *Research Technology Management*, 58(2): 62–64.
- Greenberg, B.A. (2016). Rethinking Technology Neutrality. *Minnesota Law Review*, 100: 1495–1562.
- Hands, J. (2013). Introduction: Politics, Power and "Platformivity". *Culture Machine*, 14: 1–9.
- Hanseth, O. & Lyytinen, K. (2010). Design theory for dynamic complexity in information infrastructures: the case of building internet. *Journal of Information Technology*, 25: 1–19. doi:10.1057/jit.2009.19
- Helmond, A. (2015). The Platformization of the Web: Making Web Data Platform Ready. *Social Media + Society*, 1(2). doi: 10.1177/2056305115603080
- Jin, D.Y. (2015). *Digital Platforms, Imperialism and Political Culture*. London & New York, NY: Routledge.
- Kallinikos, J. (2006). *The consequences of information: Institutional implications of technological change*. Cheltenham: Edward Elgar Publishing.
- Katyal, S. (2016). *Infrastructural Entitlements and the Civil Right to Technology*. UC Berkeley Public Law Research Paper No. 2716368. January 15.
- Kenney, M. & Zysman, J. (2015). "Choosing a Future in the Platform Economy: The Implications and Consequences of Digital Platforms",

- paper presented at the New Entrepreneurial Growth Conference, Kauffman Foundation (June 2015).
- Langlois, G. & Elmer, G. (2013). The research politics of social media platforms. *Culture Machine*, 14.
- Lessig, Lawrence. (1999). *Code: And Other Laws of Cyberspace*. New York: Basic Books.
- Levitz, E. (2016). Is Facebook Trying to Turn You Into a Globalist? *New York Magazine, Daily Intelligencer*. April 15.  
<http://nymag.com/daily/intelligencer/2016/04/facebook-trying-to-turn-you-into-a-globalist.html>
- Lianos, M. (2012) *The New Social Control: The Institutional Web, Normativity and the Social Bond*. Ottawa: Red Quill Books.
- Manjoo, F. (2016a) Tech’s “Frightful 5” Will Dominate Digital Life for Foreseeable Future. *New York Times*, Jan 20.  
<http://www.nytimes.com/2016/01/21/technology/techs-frightful-5-will-dominate-digital-life-for-foreseeable-future.html>
- Manjoo, F. (2016b). Why the World Is Drawing Battle Lines Against American Tech Giants. *New York Times*. June 1.  
<http://www.nytimes.com/2016/06/02/technology/why-the-world-is-drawing-battle-lines-against-american-tech-giants.html>
- Mansell R (2015) Platforms of power. *Intermedia* 43(1): 20–24.
- Morozov, E. 2013. *To Save Everything, Click Here: The Folly of Technological Solutionism*. New York, NY: Public Affairs.
- Mullany, A. (2015). Platforms Decide Who Gets Heard. *NiemanLab*. December. <http://www.niemanlab.org/2015/12/platforms-decide-who-gets-heard/>
- Nissenbaum H. (2009). *Privacy in Context: Technology, Policy and the Integrity of Social Life*. Stanford: Stanford University Press.
- Parker, G.G.; Van Alstyne, M.W.; Paul Choudary, S. (2016). *Platform Revolution: How Networked Markets Are Transforming the Economy—And How to Make Them Work for You*. New York, NY: W. W. Norton & Company.
- Pasquale, F. (2015) *The Black Box Society. The Secret Algorithms That Control Money and Information*, Harvard University Press.
- Plantin, J-C.; Lagoze, C.; Edwards, P.N.; Sandvig, C. (2016) Infrastructure studies meet platform studies in the age of Google and Facebook. *New Media & Society*. doi: 10.1177/1461444816661553
- Rochet, J.C. & Tirole, J. (2003). “Platform Competition in Two-Sided Markets,” *Journal of the European Economic Association*, 1(4): 990–1029.
- Rochet, J.C. & Tirole, J. (2006). Two-sided Markets: A Progress Report. *RAND Journal of Economics*, 35: 645–667.

- Schiller, D. (2015). Geopolitics and Economic Power in Today's Digital Capitalism. Presentation to the Hans Crescent Seminar, London, December 13.
- Sims, P. (2015). Alphabet and Platforms of Platforms. Blog post, Silicon Guild. Aug 11. <https://thoughts.siliconguild.com/alphabet-and-platforms-of-platforms-eebbe472664b>
- Thielman, S. (2016). Facebook news selection is in hands of editors not algorithms, documents show. *The Guardian*. May 12. <https://www.theguardian.com/technology/2016/may/12/facebook-trending-news-leaked-documents-editor-guidelines>
- Tiwana, A.; Konsynski, B. & Bush, A.A. (2010). Research Commentary—Platform Evolution: Coevolution of Platform Architecture, Governance, and Environmental Dynamics. *Organization Science*, 21(4): 675–687.
- van Dijck, J. (2013). *The Culture of Connectivity: A Critical History of Social Media*. New York, NY: Oxford University Press.
- Young, A. & Quan-Haase, A. (2013). Privacy protection strategies on Facebook. *Information, Communication and Society* 16(4): 479–500.
- Yoo, Y. (2013). The Tables Have Turned: How Can the Information Systems Field Contribute to Technology and Innovation Management Research? *Journal of the Association for Information Systems* 14(5): 227–236.
- Yoo, Y.; Boland, R.J.; Lyytinen, K. & Majchrzak, A. (2012). Organizing for Innovation in the Digitized World. *Organization Science*, 23(5): 1398–1408.