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## **PLATFORM POWER & PUBLIC VALUE**

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### **Introduction**

Over the past decade, a small group of very large digital platforms have emerged, controlled by a few major corporations. In the West, five high-tech US companies stand out: Alphabet-Google, Apple, Facebook, Amazon, and Microsoft (GAFAM). These companies increasingly shape the flow of public information, and they disrupt key institutions and industry sectors, including education, health care, journalism, and transportation (Van Dijck, Poell & De Waal 2018). Critics argue that there is a lack of transparency in how these platforms operate (Pasquale, 2015). More importantly, these interventions are considered potentially in conflict with key public values, undermining socio-economic equality, democratic processes, and the quality of public services (Scholz, 2016).

While it is clear that major platform companies have accrued unprecedented amounts of financial resources, technological expertise, and valuable data, it has not yet been systematically examined *how* they exert power. This paper offers an analytical framework to critically examine the power relations that structure the online platform ecosystem. Building on our multi-disciplinary research, we propose an analytical vocabulary to examine the material relations among platforms, institutions and users, illustrated by a few examples. A more precise insight in the workings of platform power is an important first step to better align the governance of the online ecosystem with vital public values.

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## Infrastructural services

The starting point of our framework is a 'relational understanding' of power. Power is not something that is held by a particular actor, but it both emerges from and structures unequal relations between actors (Emirbayer, 1997). Following this understanding of power, we focus on the relations between the five leading platform corporations and the many other digital properties (i.e. platforms, websites, and apps) that populate the platform ecosystem. Particularly striking is that a growing number of digital properties are integrated with, and increasingly dependent on, what we call, the *infrastructural services* offered by the GAFAM platforms. These services include: advertising networks, login services, cloud hosting, app stores, payment systems, data analytics, video hosting, geospatial and navigation services, search functionalities, operating systems, and more recently, artificial intelligence (AI) services. Such infrastructural services allow a wide variety of companies — from small local news outlets developing apps, to large *sectoral platforms*, such as Airbnb and Uber — to make their products and services available online, attract and target users, analyze their activities, and generate revenue. It is through the ubiquitous integration and consistent use of these infrastructural services that platform power emerges and is consolidated (Plantin et al. 2018).

To demonstrate how such power relations can be analyzed, the paper highlights two key infrastructural services: app stores and ad networks. Both services constitute *multisided markets*, which define the institutional and economic relations between GAFAM platforms, millions of companies, and billions of users (Evans & Schmalensee, 2016). In this market configuration, a platform company owns and operates infrastructural services, which brings together different actors or 'sides' in a market, including companies, public institutions, and users.

Starting with app stores, as prototypical multisided markets they facilitate transactions between the users of mobile media and app developers. App stores are *infrastructural* as they offer a standardized, techno-economic architecture for app developers. To reach billions of mobile media users, app developers have to go through either Apple's iOS App Store or Google's Play Store. To survey how platform power emerges through app stores, two initial levels of analysis open up. First, there is the question of *market entry* and *distribution*. Apple in particular follows a set of subjective and opaque submission guidelines. This allows the company to reject or (arbitrarily) remove any apps it deems offensive or unnecessary from the app store. While notably hard to investigate, greater insight into this issue can be gained through developer interviews or by surveying apps that are published and rejected. Second, app stores operators have full control over which apps are featured in their storefronts. Investigating *regimes of platform visibility* requires a sustained effort that draws on developer interviews, digital methods, and financial analysis in order to investigate which apps are featured when and, potentially, why.

Compared to app stores, advertising networks operate on a less visible level, but they are an equally entrenched and consolidated infrastructural service. The market for digital advertising is dominated by Facebook and Google, who aggregate users, and

connect these with advertising intermediaries, content developers, ad publishers, and advertisers. Investigating power relations in advertising networks starts with a deeper understanding of the emerging Facebook/Google duopoly, each of which follows a distinctive data strategy (Bechmann, 2013). Drawing on a mix of digital methods, financial analysis, and interviews with industry informants, two levels of analysis emerge. First, there is the question pertaining to *data-collection*, which can be explored through API analysis to determine Facebook and Google's data collection partners, a review of company documentation to gain insight in the type of data collected, and a software studies approach that tracks platform integration into third-party digital properties. Second, more challenging is the issue of *data-processing* and *data flow analysis*. Facebook and Google have data of billions of users, which allow these companies to offer unprecedented, real-time targeting capabilities. While it is nearly impossible to open the black box of platform data processing, it is possible to gain insight into manifestations of the 'metric power' of platforms (Beer, 2016), by examining data services such as Facebook's 'Lookalike Audiences'.

### **Governing the platform ecosystem**

The analysis of two exemplary infrastructural services is a first step towards a refined taxonomy of platform power relations, much needed to develop guidelines for the governance of the platform ecosystem. Current legislative and legal frameworks are ill equipped to govern online activities because they are based on traditional distinctions between economic sectors (i.e. transport, news, education), while online infrastructures are sector-agnostic. Indeed, the power of global platform companies emerges both between infrastructures and sectors, and across sectors, creating path dependency and algorithmic lock-in. Antitrust laws or consumer protection laws, for instance, can no longer be solely based on ownership relations; they need to take into account the above-discussed infrastructural services in which dependency relations are generated through data flows and analytics, guidelines, standards, review processes, hierarchies of visibility, etc.. Moreover, most legal systems relate to national or supra-national governing bodies, while platforms are global operators that tend to ignore national and regional boundaries. Consequently, they often bypass the democratic processes upon which legal frameworks are build. Rendering transparent the power relations through which platforms govern online ecosystems is a first step towards governing platforms.

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