

Toward Media Environment Capture: A Theoretical Contribution on the Influence of Big Tech on News Media

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This study aims at offering an overarching theoretical frame for analyzing different forms of direct and indirect influence of Big Tech on news media. It does so by expanding the concept of *media capture* to *media environment capture*. The latter provides an analytical tool that helps categorize various patterns of Big Tech’s influence on news media (as institutions) leading to the capture of information environments that journalism (as a practice) needs to work (well). The concept makes clear that tech giants do not simply capture “the news” or news media by means of acquiring media outlets and/or by producing and distributing the news. Instead, *media environment capture* stresses that Big Tech influences *entire* information environments, consequently shaping our lifeworld while privatizing the public sphere.

Keywords: media capture, Big Tech, news media, journalism, information infrastructures, public sphere

Oligopolized Media Corporations Meet Digital Conglomerates

Scholars around the world take an increasing interest in the growing, yet complex interdependencies between local and national news media and global digital conglomerates (Big Tech). Although Big Tech are convergent tech companies headquartered in various countries (e.g., China or India), it is in particular U.S.-based conglomerates (i.e., Meta, Alphabet, Amazon, Apple, and Microsoft) that take an increasing role in the production, dissemination, and content evaluation of journalism on a local, national,

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and global level.² This is partly because they—as commercial players and meta organizations (Kretschmer, Leiponen, Schilling, & Vasudeva, 2020)—are the profiteers and core drivers of what some call “platform capitalism” (e.g., Srnicek, 2016) or “digital economy” (e.g., Peitz & Waldfogel, 2012) and what we call digital capitalism (cf. Seignani, 2022a). Its defining feature is that digital conglomerates shape production processes and monopolize communication and markets by surveilling and assessing collected data (Crain, 2021), and by using this knowledge, they influence our social worlds.

Studies concerned with the influences of U.S.-based Big Tech on news media stress growing dependencies by means of financing (e.g., Fanta & Dachwitz, 2020), technology and infrastructure (e.g., Bell, Owen, Brown, Hauka, & Rashidian, 2017), and algorithm-based logic of news production and distribution (e.g., Brake, 2017; dos Santos, 2020), lately underlining the growing role of artificial intelligence (AI) and issues with journalistic autonomy (e.g., Simon, 2022; St-Germain & White, 2021). Other studies discuss the digital transformation of Public Service Media (e.g., Horz-Ishak & Thomass, 2021; Stollfuß, 2022) as a potential counterweight to the digital conglomerates’ “Internet Oligopoly” (Smyrniaios, 2018).

Although these research efforts are important and will likely increase in the near future, there are two overarching challenges: first, although the influences of tech conglomerates on news media production, distribution, and financing are global in scope, their analyses and research are often bound to national and/or cross-country studies (i.e., Trappel & Tomaz, 2021). Comparative analyses on *global* patterns of influence in and across countries and continents are rare (e.g., Flew & Martin, 2022; Tong & Lo, 2017). This closely relates to the second issue. Studies concerned with the different ways in which digital conglomerates influence local or national news media often conflate and juxtapose different strategies of direct and indirect influence (e.g., financing, education) with technological issues (e.g., algorithms) or economic questions (e.g., advertising), which—for purposes of analysis—should be separated. Thus, to grasp Google’s role in financing news media in Europe (Fanta & Dachwitz, 2020; Nunes & Canavilhas, 2020), its influence on media policy discussions in Australia (Brevini, 2021) or on “elite captured” policies in Latin America (Soledad Segura & Waisbord, 2016, p. 15ff.), it requires a theoretical frame that allows for a comprehensive approach across different strategies of influence and national boundaries, yet allowing for an analytical differentiation between them.

Based on these two concerns, this study offers an overarching theoretical frame to analyze different forms of Big Tech influence on news media. Broadening the concept of *media capture* used by scholars of political economy for the last decades (i.e., Schiffrin, 2021) and by media freedom initiatives, such as the International Press Institute (2023), this study pushes for a more flexible yet inclusive analytical concept of *media environment capture*.

Expanding the media capture analogy makes sense because of broader shifts of property in digital capitalism. *Media environment capture* gasps media ownership concentration, while also shedding light on

² Beyond the scope of this study, future research could focus on the question, if the capturing tendencies of globally operating U.S.-based Big Tech described in this study also apply to non-Western contexts, and if Big Tech headquartered outside the United States follows similar capturing strategies.

praxeological aspects—that is a shift from the property as a codified legal institution that guarantees exclusivity to “doing property” by means of controlling access and selective closure (cf. van den Ecker, Reitz, & Sevignani, 2023). This makes the term “capture” particularly fitting. It helps us understand current developments in the media industries, their political-economic power relations (such as appropriation, exploitation, and expropriation), and their underlying legal institution, including issues around regulating Big Tech concentration and cross-section influences.

Thus, the concept of *media environment capture* provides an analytical tool to categorize various patterns of direct and indirect influence of tech giants on news media (as institutions) leading to the capture of the entire information environment (Tröger, 2021) that journalism (as a practice) needs to work (well). Tech giants do not simply capture “the news” by means of acquiring news outlets. Instead, *media environment capture* stresses that Big Tech, by influencing our information environment, shapes our lifeworld consequently privatizing the public sphere.³ To make this point, this study draws on the theory of intellectual monopolization (expanding the idea of property), critical state theory, and Habermas’s idea of the “lifeworld,” all of which are situated within broader analyses of capitalism. The aim of this study is to provide a theoretical frame within which much of the current research on different capturing strategies of news media and journalism can be grasped, integrated, and set in relation to each other.

From Media Capture to Media Environment Capture

The term *media capture* goes back to the work of Besley and Prat (2006), who analyze issues of media dependencies on governments in democratic states. Despite legal notions of a free press, such “government capture” of mass media can work in different ways, such as by means of ownership, the provision of financial resources, media regulation, or corruption (Enikolopov & Petrova, 2015). A typical example of government capture is government-sponsored advertising, which might lead to more favorable coverage restraining the watchdog role of media (Dragomir, 2018). However, as further work has shown, such dependencies also occur in relation to private interests, such as commercial advertisers or private companies (Atal, 2018; Enikolopov & Petrova, 2015). Here, *media capture* strategies include, for instance, the purchase of media companies (such as newspapers) or the indirect influence on media by means of financing (especially by placing advertising). Similar to government capture, an effect of private interest capture can be that media content is influenced or even determined by the preferences of the sponsoring group (Petrova, 2008).

In the wake of digitization and major shifts in media systems around the world, the concept of *media capture* must be expanded if it wants to give credit to shifting production processes, infrastructures, and power relations (Schiffrin, 2021). Here, several interrelated developments come to the fore: on the one hand, the dominant commercial business model (an overreliance of news media on advertising revenue) collapsed. Although in the early 1980s, around two-thirds of global advertising revenue was generated in the print sector (newspapers and magazines), today, the print sector’s share is around five percent, whereas

³ This is why, based on Habermas (1984), we distinguish between the practice of journalism (based on communicative action) and news media institutions (with functional imperatives).

digital advertising accounts for almost two-thirds of global advertising volume (Theine & Grabner, 2023). This leads, first, to a deteriorated economic situation of privately owned media companies. For instance, the United States has lost almost a third of its newspapers and almost two-thirds of its newspaper journalists since the early 2000s. As a result, tens of millions of U.S.-Americans have no, or very limited, access to a reliable local news source (Abernathy, 2023; Pickard, 2019). Second, this leads to increasing competition for advertising and classifieds (Waisbord, 2019). At the same time, the general decline of profit prospects further implies that profit has become even less of a reason to own a media outlet, which increases the likelihood of media being owned for political or ideological reasons (Nielsen, 2017; Schiffrin, 2021).

On the other hand, new digital conglomerates have emerged whose intimate bonds with news media are growing. In fact, Big Tech has become an important financier of journalism. Google's Digital News Initiative is a prime example (Fanta & Dachwitz, 2020; Papaevangelou, 2023). But it is not only the economic power of digital conglomerates that makes them "media patrons" (Fanta & Dachwitz, 2020), but news media increasingly depend on their tools and applications. In this context, Schiffrin (2021) continues using the term *media capture*, whereas Usher (2021) proposes the concept of "platform capture" and Nechushtai (2018) speaks of "infrastructure capture." Although platform capture focuses on the shifting role of Big Tech in structuring the digital news economy at large, infrastructure capture refers to "circumstances in which an overseeing institution [news media] becomes incapable of operating sustainably without the physical or digital resources provided by the organizations [digital conglomerates] it formally oversees" (Nechushtai, 2018, p. 1052). Both approaches stress that any concept of shifting dependencies of news media must include the infrastructure that news media require.

Building on those discussions and responding to Papaevangelou's (2023) demand "to approach capture as a political-economic concept to study platform power" (p. 1), we propose the concept of *media environment capture*. Its aim is to grasp the multiple ways tech companies directly and indirectly influence news media:

- *Direct influence* refers to tech companies purchasing or financially supporting media companies.
- *Indirect influence* refers to altering the social, cultural, legal, and political framework conditions and information environments (media environment) that enable and allow for (the practice of) journalism.
- *Mediate influence* (that is direct and indirect influence) applies to the *media value creation*—that is the type of influence digital conglomerates exert on all upstream and downstream stages of value creation in the news media (as institutions) by means of technological dependencies.

The concept of *media environment capture*, thus, broadens classic capturing concepts by pointing at the manifold dependencies of news media and journalism on information and data, knowledge, and infrastructures (Nechushtai, 2018). News media are being captured when individual players, such as digital conglomerates, make indispensable contributions to the information environments without which journalism would no longer function. This currently happens from "within" news media companies (along all stages of

the value creation of news) and on the “outside” (via information environments and infrastructures essential for journalism).

Theoretical Foundations of Media Environment Capture

To better understand current media dynamics in digital capitalism and, thus, the concept of *media environment capture*, we combine and apply interdisciplinary capture theories. This makes sense because Big Tech capturing strategies, as outlined in this study, lend themselves to drawing from a tradition of broader critical theories of society. This, in turn, can give a new impetus to research, for instance, in the realm of critical political economy of media and communications.

First, we apply the theory of intellectual monopolization that focuses on the capabilities of digital conglomerates to absorb and claim knowledge, information, and data, influencing other industries, including news media. Second, we borrow from critical state theory offering conceptual clues as to how corporations influence media regulation. Third, we look at more recent theories of capitalism, in particular Jürgen Habermas’s (1984) “two-level” theory of modern societies and Nancy Fraser’s (2014) understanding of capitalism as an institutionalized social order. Although Habermas’s (1984) model of system-“lifeworld”-interchange helps to understand how Big Tech harnesses the underpinnings of journalism, Fraser (2022) emphasizes that any such capturing tendencies are inherent in capitalist reproduction. Combining these capture theories, we set the theoretical frame to then identify and classify empirical studies on the direct, mediate, and indirect influence of digital conglomerates on news media according to different capturing strategies.

Intellectual Monopolization in the Media Industries

Intellectual monopolies occur when there is a concentration of intellectual and technological capacities—such as knowledge, information, and data—that can be continuously traded, rented, or sold (cf. Pagano, 2014). Thus, intellectual monopolies result from some firms, institutions, or individuals depending on others who control infrastructure, information, and knowledge to be able to operate and “organize production (including distribution) processes” (Rikap, 2023a, p. 2). The key to intellectual monopolization, therefore, is to control the capacities to absorb knowledge, information, and data within complex intra- and intercorporate networks and to channel information flows (from the bottom to the top). This can be achieved, for instance, by building and controlling platform infrastructures (Dolata, 2019) or by renting out cloud services (instead of, e.g., selling software). Hence, there is a strong functional relationship between tangible capital (e.g., cloud computing infrastructures) and intangible capital (e.g., data). In this way, platform operators set universal sociotechnical rules: they design and restructure markets or set up other hierarchies of communicative interaction. They can monitor interactions, use relevant information in their interest (e.g., for demand analyses), and they are in the position of regulating conditions for individual players (e.g., by means of price discrimination). Simultaneously, platform operators can use available data for machine learning algorithms, enhancing their already existing technological leadership. In this way, they enter markets (e.g., pharma, media, film) disconnected from their core business (e.g., technology) and reshape these markets according to their business interests.

Put differently, intellectual monopolies, first “enter new sectors by building on insights from their intangible assets (knowledge and data)” and, second, “expand not only to establish dominant market positions in new sectors but also to acquire new knowledge and data sources to perpetuate their intellectual monopolies” (Rikap, 2023b, p. 2). This is why one of the most defining features of Big Tech is the “successful creation of product ecosystems and, with them, ecosystem-wide data-driven value creation” (Friederici & Graef, 2021, para. 7). Although the theory of intellectual monopolies has not yet been applied to the news media industry or journalism, both are excellent targets of intellectual monopolization leading to issues of a “platform press” (Bell et al., 2017).

Media Policy Regulations in the Interest of Big Tech

In the tradition of critical political economy, policy regulation and the media economy are closely intertwined. However, there are different approaches as to what that means, especially about theorizing the state (cf., Jessop, 1977). On the one hand, there is a more system-level functionalist approach according to which state policies repressively and/or ideologically secure production processes and class relations, also in the media industry, by guaranteeing the conditions of capital accumulation (e.g., labor qualification, technological developments, new markets, the enforcement of [new] property rights). Concerning news media, this can mean that the state provides regulatory framework conditions (cf., Knoche, 1999), for instance, by emphasizing the close connection between freedom of trade, freedom of the press, and freedom of advertising, or by means of copyright regulations or by building media infrastructure.

On the other hand, there is a more actor-based instrumentalist approach, according to which the state is an instrument of the ruling classes. Here, capital and the state are closely intertwined because economic power transforms into political power (e.g., by means of party financing, lobbying, or the revolving door effect). Although there can be conflicts among the ruling class and between different sectors of the economy (as to how and in whose interest state policies should be shaped), politically, this capital-state-complex undermines democracy leading to postdemocratic conditions (cf., Crouch, della Porta, & Streeck, 2016). About news media, a prime example of such a capital-state-complex is Italy’s media system under the leadership of Silvio Berlusconi (Durante & Knight, 2012) but also various revolving door effects, for example, relating to major media service conglomerates such as Bertelsmann (Tröger & Becker, 2023).

A potential synthesis of both approaches (actor-based and system-level analyses) is to understand state policy and the political public sphere (cf., Seignani, 2022b) as a condensed social balance of power (Jessop, 2013). Here, different interests clash and compromises need to be found. However, because of unequal power relations and resources, economic imperatives and the question of whose interests fit them best, these compromises still are part of specific subordinate and superordinate mechanisms. However, it is not only the state and capital that are part of these processes but various interest groups (e.g., civil society groups). They all aim for different goals (e.g., data protection and business interests), and it is in this process of consolidating interests that the state remains *relatively* autonomous from the economy—even in the face of capital interests. This makes it possible for state policy to help moderate and contain capitalist crises.

Thus, critical state theory helps to recognize connections between competition, market concentration of news media and consolidation of journalistic content, as well as economic self-regulation in the media sector. Although different interest groups might be involved in media policy processes and while capital interests may differ, state regulation is greatly (but not only) shaped by Big Tech (e.g., by means of disproportionate lobbying activities and success; Bank, Duffy, Leyendecker, & Silva, 2021) or by profiting from regulatory arbitrage and private forms of regulation (Birch & Cochrance, 2022). However, this ultimately depends on the social balance of power within the political public sphere. It should also be noted that platforms increasingly serve as regulators themselves, beyond state regulation. By curating “programmable social infrastructures” (Törnberg, 2023, p. 4), digital conglomerates privatize regulation through digital technology (Dolata, 2019; Staab & Thiel, 2022).

Expropriation of the Lifeworld Foundations of Journalism

In his *Theory of Communicative Action*, Jürgen Habermas (1984) develops a “two-level” societal theory within which he attempts to integrate system-level analyses with what he calls the “lifeworld,” that is the social background conditions to communicative action (which to him makes the public sphere that spans between individuals and civil society, state and mass media). Thus, for Habermas, the lifeworld includes social resources allowing culture, society, and mature personalities to reproduce themselves communicatively. This is because, according to Habermas (cf., 1984, p. 308ff.), every linguistic action contains implicit or explicit claims of validity about (propositional) truths, (normative) correctness, and (subjective) truthfulness. By making competing claims of validity, different actors (e.g., individuals, institutions, organizations) are connected—even if they criticize each other—in sharing this lifeworld.

Capitalist enterprises, including institutionalized news media relevant to democracy, depend on this cooperative-communicative reproductive process. In particular, mass media generate thematic impulses in the lifeworld, which are negotiated in the public sphere at the threshold of the political system (cf. Habermas, 1996, p. 359ff). Here, the reproductive function of the lifeworld consists of transmitting, critiquing, and acquiring (cultural) knowledge as well as coordinating action by means of intersubjectively recognizable interpretations and claims to validity. In particular journalism is part of and relies on such communicative processes. It enables people to become mature citizens by means of standards of “inclusiveness, responsiveness, justification, and civility” (Wessler, 2019, p. 86). This is because journalism elaborates on inputs from the lifeworld, whereas simultaneously providing outputs for it and the political system. In this way, journalism also structures the background conditions of interpersonal communication, namely by accessing knowledge, (re)organizing it, and by making it available for follow-up communications. Thus, if cooperative-communicative reproduction is weakened, for example, by capitalist interests, there is a threat to meaning and to anomie (cf., Habermas, 1987, p. 142ff). Put differently, in “Habermas’s view, public spheres are rooted in the informal interactions of the lifeworld, and this connection to the lifeworld must be defended against purely functional imperatives, that is, against the influence of power and money” (Wessler, 2019, p. 45).

In particular (news), media lie between such functional imperatives (e.g., of the economy or political sphere) and communicative action anchored in the lifeworld. When Habermas famously speaks of the colonization of this lifeworld, he refers to the role of new intermediaries in the public sphere today, for

instance, commercial platforms owned by digital conglomerates (cf., Habermas, 2022). Providing the communication infrastructures for different actors (e.g., civil society, state, mass media), these conglomerates occupy crucial positions of communicative power (Castells, 2011), thereby curating and controlling the public sphere.

Building loosely on this tradition of thought, Nancy Fraser (2014), in her recent work, develops an expanded understanding of capitalism as an institutionalized social order. She pushes the idea that colonization is not a side effect of capitalist reproduction but is inherent in it. This is because the official economy depends on cheap or free input from other social spheres to function. Nancy Fraser (2022) calls these processes of accumulation "*confiscation-cum-conscription-into-accumulation*" (p. 35; emphasis in the original). The boundaries between social, cultural, political, and also epistemic background conditions and the official economy with its logics of exploitation are notoriously contested and shifting in capitalist societies. Bob Jessop (2007) focuses on knowledge to be such a necessary, exploitable, and contested resource of the capitalist economy. Couldry and Mejias (2019), on the other hand, refer to "data colonialism," drawing broader historical connections to current processes of appropriation and social stratification. All of these approaches make it clear that digitalization comes with new forms of capitalist utilization that need to be analyzed in their broader social contexts.

Thus, what is the lifeworld to Habermas (1984) are the conditions of reproduction in capitalism to Fraser (2014). Both theories look at issues relating to capture: Habermas as a serious disturbance to the public sphere, Fraser as a necessity of capitalism. Combined, both theories explain why digital conglomerates (partly cooperating in an open-access manner and partly competing based on exclusivity) use and exploit free content (e.g., data) creating complex ecosystems that influence our information environments and social spheres beyond direct ownership.

Based on these theories, we conclude, first, that capturing media environments refers to extending corporate control to the lifeworld as well as to state regulation, both with different spheres of influence. Second, intellectual monopolization in the media industry allows for mediate (direct and indirect) capture processes when media organizations become dependent on the services of tech giants for organizing their own value supply chains. Third, these stages of "doing property" in news media have (micro) effects on the public sphere (which would be worthwhile researching empirically). In the following section, we apply this framework to the practice of *media environment capture*.

The Practice of Media Environment Capture: Direct, Indirect, Mediate

We now illustrate *media environment capture* by means of research examples, drawing closer connections between theory and practice (for an illustration, see Figure 1). In doing so, we focus on highlighting shifts in the structure, production, and distribution of news media and journalism. The following examples are only the first steps. Our theoretical framework allows for a broader range of studies to find their contextual space in the capturing strategies of the information and media environments by digital conglomerates. Thus, much of the current research on the effects of different capturing modes can be grasped, integrated, and set in relation to each other.

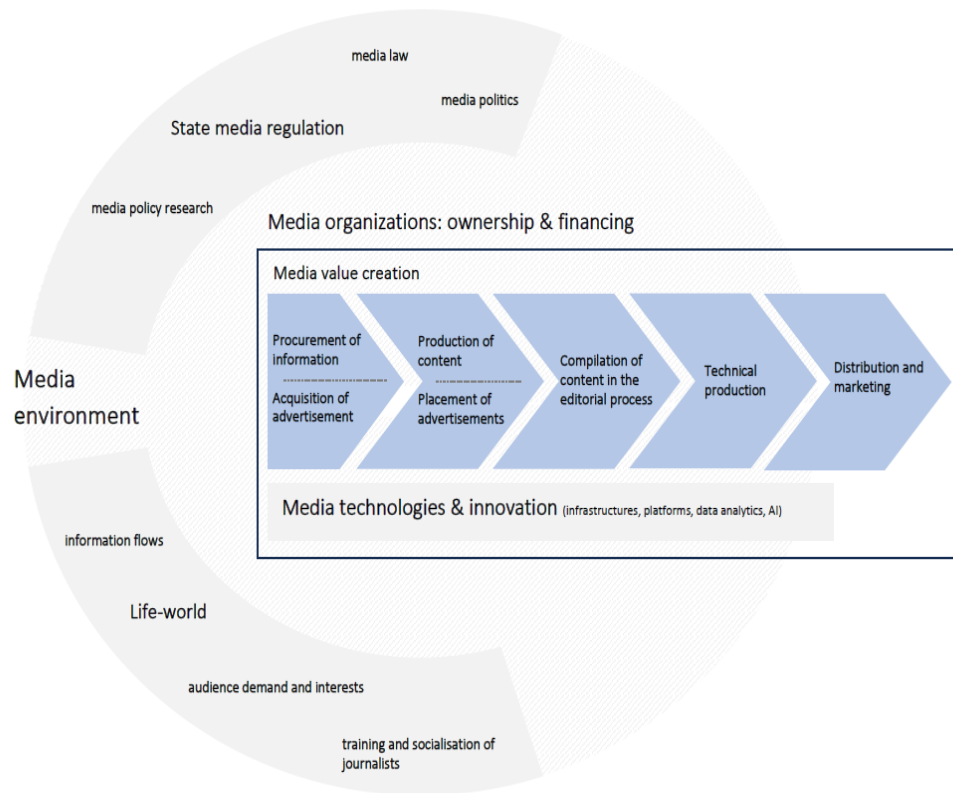


Figure 1. Media environment capture.

Big Tech exerts *direct influence* on news media by (financially) *supporting* them. As with the traditional concept of *media capture*, this can happen when (the owners of) digital conglomerates buy and own media outlets (*media ownership*), as is the case with Jeff Bezos who bought the *Washington Post* in 2013. Although these cases are rare, direct influence also happens when digital conglomerates finance news media outlets (*media funding*) or journalists and journalism more generally (*journalism funding*). These financing schemes are more common and must partly be understood as appeasement strategies because their main beneficiaries (large media conglomerates) threaten to defend their core businesses (e.g., advertising revenue) by means of antitrust lawsuits. This is why, according to LobbyControl (Bank, Duffy, Leyendecker, & Silva, 2021), in particular, the traditional news media sector lies “at the core of Big Tech’s lobbying efforts” (p. 35) via sponsorships and public relations work. Fanta and Dachwitz (2020), for instance, show how Google has spent about 210 million euros on news media and journalism projects in Europe, much of which was allocated to major publishing houses in Western Europe, especially Germany. Google also sponsors content initiatives, technical projects, fellowships for journalists, and industry conferences, aiming at *socializing journalists* and generating technological innovations by means of trainings for digital and data journalism (Nechushtai, 2018).

Big Tech influences media and information environments *indirectly* by means of shaping *state media regulation*. Recent studies stress the need for more regulation to account for organizational diversity in the digital sphere (e.g., Friederici & Graef, 2021; Winseck, 2022). However, regulators typically address different normative issues separately (such as data protection, competition, mergers, and acquisitions), which to digital conglomerates are interconnected (Friederici & Graef, 2021). For example, all regulations that increase data protection potentially pose threats to Big Tech's business models of extracting, collecting, and organizing data according to their interests. This means that, with cross-section property not being regulated, digital conglomerates have a high interest in overseeing regulatory initiatives in various countries for various interrelated business areas.

Based on these imperatives, Big Tech exerts and maintains influence in *media law and policy*, generally at a formative stage using different lobbying strategies and organizations (e.g., direct lobbying, professional consultancies, trade associations). According to Duffy (2021), in 2020, Facebook and Amazon spent more money on lobbying than ever before. In the United States, together with Google, Apple, and Microsoft, the Big Five spent more than 61 million U.S. dollars in total—of which Facebook accounted for about 20 million and Amazon nearly 18 million. In the European Union (E.U.), the digital industry as a whole spends over 97 million euro per year on lobbying E.U. institutions and employs 1452 lobbyists (LobbyControl, 2021). However, although the combined lobbying power of the sector is very high, lobby expenses vary greatly (as does the industry). According to LobbyControl (2021), in particular, Google, Facebook, and Microsoft stand out with lobby budgets of more than 5 million euros each. Thus, they are the top spenders in Brussels, even when comparing corporate lobby spending across sectors. This means, "U.S. tech giants are not only outspending other digital industry actors, they are outspending all actors" (LobbyControl, 2021, p. 11). In addition, in 2019 and 2020, Google, Apple, Amazon, Facebook, Microsoft, and Qualcomm hired the most lobby consultancies (e.g., Fleishman-Hillard, E.U.-Strategy, and FTI Consulting). Google remains at the top, spending 1.28 million euros on 12 consultancies, almost a quarter of the company's total lobbying budget (LobbyControl, 2021, p. 16).

The reasons for such huge spending on lobbying were the drafting of the Digital Markets Act and the Digital Services Act, both of which aim for stricter E.U. regulations for digital platforms. In consequence, in particular, the Big Five, as industry leaders, have been successful in pushing for privileged access to the E.U. Commission. According to LobbyControl (2021) "75% [*sic*] of digital services act package meetings were with the industry" (p. 19), that is every "three of four meetings of the Commission" (p. 19). The rest of the meetings about both acts took place with professional consultancies (2%) and think tanks (1%). In accordance with these findings, Bernisson (2021), using the example of defining the concept of "data" as part of the E.U. General Data Protection Regulation (GDPR), shows that prominent technological and economic interpretations of the term can be found in privacy policies, "while the human rights interpretation does not have much space left" (p. 65). However, it should be added that digital conglomerates not only join forces to influence state regulation but they also provide financial support to numerous associations and think tanks working in the background to amplify proindustry narratives influencing public opinion (i.e., Bank, Duffy, Leyendecker, & Silva, 2021; Campaign for accountability, 2018). In the European Union alone, there are 14 think tanks and other policy groups with close ties to Big Tech. Together, they declare an overall lobby budget of 2.29 million euros. Google alone is connected to 19 think tanks in the European Union (LobbyControl, 2021, p. 34ff).

Of course, there are ways of influencing state media regulation other than government-related lobbying. For example, *media (policy) research institutions and universities* have increasingly become a target of digital conglomerates (e.g., Rikap, 2023c). This is no new phenomenon. For the case of Germany, Kreiß (2015) shows how, for years, tech companies have been targeting research institutions aiming at influencing their agenda and strengthening their own political positions. What seems new, however, is the amount of financial support across relevant fields: Facebook, for example, gave 6.5 million euro to AI research at the Technical University of Munich, Germany; Google provided financial support to the Alexander von Humboldt Institute for Internet and Society (HIIG) in Berlin, one of the German flagship digital research institutes.⁴ By 2018, HIIG had published more than 240 scholarly papers and reports on Internet policy issues, many on issues of central importance to Google's bottom line (Campaign for Accountability, 2018, p. 4). Different studies and reports show that Google is a major academic sponsor on a global scale, building academic institutions and financing research in the United States (e.g., Brody & Nicas, 2017), in the European Union and in countries such as France, the United Kingdom, and Poland (e.g., Campaign for Accountability, 2018). In this way, Big Tech aims to steer academic research in a favorable way with similar strategies to Big Tobacco in the second half of the 20th century (Abdalla & Abdalla, 2021).

Finally, digital conglomerates *indirectly influence* our broader *lifeworld*, for instance, by providing attractive platforms (some of which can be used for free). Journalists and editors can use these platforms to meet with their audiences, while audiences can interact with news content and their producers. In this way, tech companies obtain informed access to both communicators and audiences, meaning they have privileged access to journalists as well as *news audiences*, their *interests and preferences*, and, thus, to potential customers and advertising targets. This allows digital conglomerates (such as Meta) to monitor and evaluate all interactions on these platforms (such as Facebook) and provide an informational space, within which social actions can be mapped out (Dolata, 2019). For instance, about news content, Facebook tailors its news feed according to consumer behavior and information preferences (DeVito, 2017). However, platforms also influence *journalism practices*. Bell et al. (2017) speak of the "platform press" analyzing how the logics of Silicon Valley change journalism. Adding to this, several studies from different countries show how journalists discover, monitor, and contact *relevant sources* with the help of platform infrastructures (e.g., Humayun & Ferrucci, 2022). Facebook's position as the primary portal to millions of readers, for example, forces journalists to tailor their reporting according to algorithmic and click-bait criteria (Pickard, 2022).

Capturing the Value Creation of News Media

Mediate influence on our media environment occurs when Big Tech directly and indirectly influences the value creation of news media within which automation has become a core principle (Herrero, Direito-Rebollal, Silva-Rodríguez, & López-García, 2020). On a broader level, this means that news media depend on *technologies and technological innovations* to produce and distribute journalistic content. Such digital products, services, and innovations are the core business of digital conglomerates. This means Big Tech provide, develop, and operate the technological infrastructures and services of the Web (Dolata, 2019)

⁴ Accordingly, a representative of Google, Germany also sat on the eight-member HIIG supervisory board.

necessary for the production and distribution of journalistic content (Bell et al., 2017). These technologies not only shape social, political, and economic interactions on the Internet by making them easy and convenient. Simon (2022) shows how for news media companies, for example, the search engines, e-mail and calendar management programs, and social media provided by Big Tech are part of the (often free) Internet. This means news media producers organize their work according to the logics of digital conglomerates' whose (profit) interests are manifest in the design of their products and services (Nielsen & Ganter, 2018). Looking specifically at the role of AI supported by digital conglomerates, Simon (2022) and St-Germain and White (2021) analyze the growing dependencies of newsrooms and journalistic practices.

Thus, if journalism is virtually "captured" by digital conglomerates by means of influencing its manifold environments (e.g., state regulation and the lifeworld) and by providing external services, their reach goes far into the core of journalism's economic organization—that is the value creation of news media. Of course, the use of such external services for individual stages of value creation is not a new phenomenon. Long before digital transformations, news media companies used telephone and telegraph services for communicating with external sources and for their internal organization, they used computers with software licenses for news production or postal services for distributing print media (Nechushtai, 2018). What is new today is the multitude of services provided by a single source: (individual) digital conglomerates provide necessary services for journalism—not just at one or two points in the value chain, but across the entire board (Bell et al., 2017). Put differently, digital conglomerates "equip news organizations with tools for news production, provide them with data on the reach of stories, and offer tools for analytics and insight" (Nechushtai, 2018, p. 143).

First, news production: Although in principle there are noncommercial, often mutually compatible alternatives available for *acquiring information*, for *producing and compiling content*, and for their *technical production*, journalists largely rely on Big Tech digital services, some of which are free, popular, and intuitively more easily accessible. Thus, journalists conduct research using Google's search services, and Meta's messenger services (WhatsApp) or Microsoft's video conferencing systems (such as Skype and Teams) for communicating. In addition, Big Tech services are being used for producing interactive content for mobile devices (e.g., Facebook 360 and Facebook Instant Articles) and for compiling content (from one or different news media) according to user preferences (i.e., Fanta & Dachwitz, 2020; Marshall, 2021). For example, half of the responders that participated in a survey of German media companies in March 2020 had participated in trainings for using Google products for research or business purposes (e.g., Google Earth, Google Maps, and Google Trends) as well as search engines and Google's ad products (Fanta & Dachwitz, 2020).

However, the capturing of traditional journalism shows most clearly in the value-added stages of *distribution* and *marketing* of (the coproducts) journalistic content and advertising, as well as the associated acquisition and placement of advertising. Digital conglomerates offer technologies for analyzing markets and recipients, measuring users' demands and interests. Marshall (2021), for instance, shows the influence of Google services on journalism, in particular Google Analytics for user data, page views, and geographic distribution. For similar purposes, Facebook has developed the Insights service, which allows news organizations to analyze and optimize their content performance on Facebook (Nechushtai, 2018).

Beyond analyzing user and performance data, digital conglomerates are attempting to fundamentally monopolize any privileged access to users (Lobigs, 2018). They are successful in this because news content is increasingly being consumed online. Hence, any contact with professionally produced journalistic products often occurs on their platforms (e.g., search engines and social media). Here, individual news items are no longer professionally edited, but they are compiled according to automated algorithms based on the monitored user preferences and interactions (de Oliveira & Guimarães da Costa, 2020; dos Santos, 2020). This forces traditional media companies—aiming to counteract their losses in (advertising and subscription) revenues from their once privileged access to recipients—not only to invest and cooperate with each other. But they also have to collaborate with the “capturing” tech companies. For example, Lobigs (2018) argues that news media, lacking alternative distribution channels, are adapting their content to the distribution logics of the marketing strategies of Google, Facebook, and YouTube. This leads to a further loss of control and changes journalism itself (Bell et al., 2017). In turn, Fanta (2022) shows how, at times, news media even slip into the role of news service providers for the new gatekeepers, for example when the German Press Agency (dpa) takes over editing and quality control for Facebook.

Conclusion

By means of various examples, we have established that the combined influence of Big Tech on the different levels of news media is considerable. Thus, even if digital conglomerates such as Facebook (Meta) or Google (Alphabet) do not dominate journalism on their own, the platform-economy and the logic of individual tech companies to integrate as many players as possible into their ecosystems, to generate many exploitable data and to create various structural dependencies, make them major players in journalism. This makes Big Tech the key drivers of surveillance-based (news) media production (Crain, 2021; Turow & Couldry, 2018) and the winners of accompanying infrastructure and power shifts in media systems worldwide.

Digital conglomerates have acquired this role because they are capable of building large-scale communication systems consisting of enormous, energy-intensive server infrastructures, including data transportation, which they are able to scale and disseminate. This hardware infrastructure sets the material conditions for the running of software applications that are not being sold, but that are being used in the cloud. At the same time, they are developing software tools for extracting and analyzing user data, allowing them to classify, sort, and—according to the companies’ marketing—predict future behavior. Thus, they use data to improve existing products, develop new services, or build entirely new business segments. All of these points—hardware infrastructure, software logics, and data use—become relevant when looking at the role and influence of these conglomerates on news media and journalism, for it is them who provide the technological infrastructure of the digital public sphere.

To grasp these shifts and their consequences for news media theoretically, we use the classical concept of *media capture* but argue that it needs adaptation. Although “capture” does grasp media ownership concentration and sheds light on the praxeological side of media property, its political-economic power relations, and underlying legal institutions, it does not give credit to broader communication environments or current shifts in the constitution of media property. Because when knowledge, information, and data (e.g., copyable software, cultural goods, scientific insights) become important goods and means

of production in news media, property arrangements make it difficult to establish clear boundaries between ownership and nonownership (and, thus, different capturing modes).

We, thus, argue that the influence of Big Tech on the value creation and the information environments of news media demand analyses of capturing processes that must be broader than the focus on potential influences of ownership and financing. Looking at the influence of digital conglomerates on *all* stages of value creation in the news media sphere, as well as on the information environments surrounding this sphere, it becomes clear that it is no longer only individual sites or influential players that are subject to private interests. Rather, the communicative space between and around *all* players participating in the public sphere is subject to the logics of Big Tech.

Starting from there, the concept of *media environment capture* provides an analytical tool to categorize various patterns of direct and indirect influence of Big Tech on news media (as institutions) leading to the capture of the entire information environment that journalism (as a practice) needs to work (well). This means Big Tech do not simply capture “the news” or news media by means of acquiring news media outlets and/or by producing and distributing the news. Instead, drawing on issues of intellectual monopolies, critical state theory and Habermas’s (1984) idea of the “lifeworld,” *media environment capture* stresses that digital conglomerates influence our entire information environments.

The concept further implies that progressive media policies must entail thinking beyond individual players within the public sphere. In line with “transversal politics” (Monsees, Liebetrau, Austin, Leander, & Srivastava, 2023), it demands a reorganization of the infrastructures of the entire public sphere. In this sense, *media environment capture* strengthens calls for “platform socialism” (Muldoon, 2022), “platform cooperativism” (Scholz & Schneider, 2016), or a “public service internet” (Fuchs & Unterberger, 2021).

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