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RESEARCH PAPER

Commodification and Disruption

Theorizing Digital Capitalism

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ABSTRACT

There is little debate that digital technologies are transforming contemporary economies and societies. However, scholars have only recently begun to systematically think about how digitalization—the process whereby more and more of what we say, think, and do becomes mediated by digital technologies—is both driven by and transformative of capitalism. This paper argues that three digital revolutions—the platform, (big) data, and artificial intelligence revolutions—have given rise to digital capitalism. Under digital capitalism, platform-based, data-driven, and artificial-intelligence-powered business models capture an increasing share of profits, directly or indirectly control an increasing share of economic life, and increasingly serve as role models for both start-ups and established companies. Reviewing and systematizing the social-scientific literature on capitalism and digitalization, the paper offers a conceptual framework that scholars and practitioners can use to better understand and analyze the drivers, dynamics, and challenges of digital capitalism.

1 Introduction

We live in times where hardly a day goes by without some digital company making headlines by revolutionizing yet another aspect of our lives. Digital behemoths such as Google and Amazon “disrupt” existing industries from retail to health care; “unicorns” such as Uber and Airbnb transform the ways we work, dwell, and travel; and a host of start-ups – often backed or bought by larger tech companies – sets out to develop “an Uber for everything” (Fowler, 2015), or indeed “smart-everythings” (whether homes, factories, cities, or hairbrushes). Crucially, this process of digitalization – whereby more and more of what we say, think and do becomes mediated by digital technologies – is both transformative of and driven by capitalism.

On the one hand, capitalism slowly takes on a new garb – the garb of digital capitalism – as platform-based, data-driven, and artificial-intelligence-powered businesses become ever more central to modern economies and societies. On the other hand, being largely propelled by a capitalist logic, digitalization has followed a peculiar double dynamic. This dynamic has a *commodifying* and a disruptive thrust. Digitalization is commodifying in that it i) undermines institutions that protect individuals and societies from unfettered markets and ii) pushes economic logics ever deeper into the social fabric (Ebner, 2015). Work, for example, is reorganized on digital platforms in ways that avoid or challenge existing (labor) regulations (Prassl, 2018). Meanwhile, personal data are increasingly extracted for and sold on ever more intrusive markets for human attention (Zuboff, 2019).

Digitalization is *disruptive* in that it can more or less radically i) alter the requirements for success on the individual, firm, and national levels and ii) shift the balance of power between economic actors. For example, advances in artificial intelligence (AI) require workers to develop new skills to keep up in the race against the machines; similarly, firms face existential challenges as new products make existing business models obsolete (Frey, 2019; McAfee & Brynjolfsson, 2017). Meanwhile, digital platforms engage in private “marketcraft” (Vogel, 2018): Rather than merely operating in markets, they design and shape markets by setting rules, solving coordination problems, policing access, and adjudicating disputes (Lehdonvirta, 2022; Staab, 2019; Törnberg, 2023). In doing so, they can exploit power and information asymmetries that allow platforms to “take” or “co-opt” much of the value that is created on them while subjecting users to new forms of algorithmic control and manipulation (Calo & Rosenblat, 2017; Stark & Pais, 2020).

Understanding this double dynamic requires that we think more systematically about how digitalization and capitalism are intertwined, and how the logic of the latter shapes the trajectory of the former. When one speaks of digitalization, one cannot be silent about capitalism.¹ But digitalization changes capitalism too. In this paper, I argue that the common pull of three digital revolutions – the platform revolution, the (big) data revolution, and the AI revolution – give rise to a new historical form of capitalism: digital capitalism (e.g., Fuchs, 2021; Pace, 2018; Rivera, 2020; Staab, 2019).² In digital capitalism, platform-based, data-driven, and AI-powered business models capture an increasing share of profits, directly or indirectly control an increasing share of economic life, and increasingly serve as role models for start-ups and established companies.

The argument here is not one about radical discontinuity: Not all contemporary capitalism is digital capitalism, and digital capitalism itself remains intimately connected to financial capitalism, for example by the “structuring” power of venture capital (Cooiman, 2022). Still, the logic of financialization itself is increasingly inadequate for understanding the central role of digital technologies in economic and social life (Törnberg, 2023). Existing approaches have captured this central role only partially, focusing, for example, on the growing importance of immaterial or “cognitive” factors (Moulier Boutang, 2011), the power of platforms (Srnicek, 2017), the ubiquity of algorithms (Mittelman, 2022), and the pervasiveness of surveillance (Zuboff, 2019). What the concept of digital capitalism offers is a more comprehensive perspective on how digital technologies interact to shape capitalist activity across economic sectors (Dolata, 2019, pp. 185–186) and ultimately come to “mediate the accumulation of capital and power” *tout court* (Fuchs, 2021, p. 28).

This paper provides a conceptual framework ([summarized in Figure 1](#)) that can help scholars and practitioners think more clearly and systematically about the drivers, dynamics, and challenges of digital capitalism. The goal is to review, reconstruct, and systematize an array of existing arguments and observations and use them as building blocks for “theorizing” (Swedberg, 2012) digital capitalism. The paper can thus be understood as a “theory-shaping site” (Peck, 2019, p. 1194): It introduces concepts that sensitize researchers to key drivers, dynamics, and challenges of the digital age but also invites and is “in constant dialogue (and tension) with empirical inquiries” into the actually existing dynamics of digitalization (*ibid.*).

¹ To be clear, digitalization does not have to be capitalist, as the example of Wikipedia demonstrates. Nonetheless, that there has not been a “second Wikipedia” – i.e., that it is very difficult to scale digitalization in a non-capitalist manner – indicates that to understand actually existing digitalization, we must take capitalism seriously.

² Although used as early as 1993 (cf. Fuchs, 2021, pp. 25–26), the term digital capitalism was first systematically introduced in Dan Schiller’s 1999 *Digital Capitalism. Networking the Global Market System* (Schiller, 1999) and Peter Glotz’ *Die beschleunigte Gesellschaft. Kulturkämpfe im digitalen Kapitalismus* from the same year (Glotz, 1999).

The paper follows the structure of the overall argument outlined in [Figure 1](#). It first provides an overview of the three digital revolutions that give rise to digital capitalism: the platform, (big) data, and AI revolutions. This section attempts to identify key enablers of digital capitalism via a more fine-grained conceptualization of what is often simplified as “the digital revolution.” Its contribution is to distill central arguments and findings from a vast and often disconnected literature on digitalization. The next section introduces the term digital capitalism in more depth. It makes a case for why it is useful to use the term digital capitalism instead of related concepts that selectively focus on just one or two of the three digital revolutions, as in the case of surveillance capitalism. It also discusses the relationship between digital and financial capitalism and prepares the argument for why the concept of financial capitalism (or financialization) is insufficient for understanding the central dynamics and challenges of digital capitalism. The following sections detail this argument. They demonstrate how commodification and disruption represent key dynamics in capitalist societies and how digital capitalism has created a new wave of commodification-cum-disruption. Detailing the nature of these dynamics and the consequent political and social challenges in the form of adapting rules, re-embedding markets, redistributing resources, and rebalancing power is this paper’s key contribution. The paper concludes with a discussion of limitations, focusing on the importance of politics for understanding the trajectory of digital capitalism.

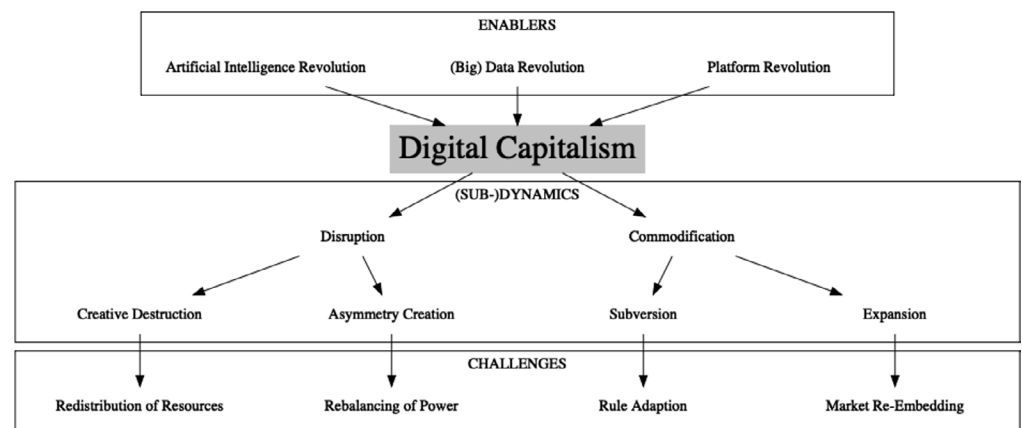


Figure 1: The Enablers, Dynamics, and Challenges of Digital Capitalism

2 Three Digital Revolutions

Digital technologies are not new. In fact, they have been integral to the three most important economic transformations of recent decades: the financialization, globalization, and post-industrialization of the economy (Törnberg, 2023, p. 4). However, digital technologies have only recently reached an inflection point where they have become “as important and transformational to society and the economy as the steam engine” (Brynjolfsson & McAfee, 2014, p. 9).

Not only have there been continuous and often rapid improvements in the availability, affordability, and capacity of digital technologies (McAfee & Brynjolfsson, 2017) but, like the steam engine or electricity, digital technologies also represent “general purpose technologies,” rendering them building blocks for a broad variety of future innovations (Brynjolfsson & McAfee, 2014, pp. 75–80). Furthermore, as in the case of previous general-purpose technologies, it took some time for their potential to be fully harnessed because this requires “organizational and [...] conceptual changes in the ways tasks and products are defined and structured” (David & Wright, 2003, p. 147). For example, the platform structure itself only “emerged as a dominant model after decades of experimentation and trials in search of an organizational structure that would fit the affordances of digital technology” (Törnberg, 2023, p. 1).

Thus understood, the rise of digital capitalism represents the product of the “confluence” of technological and conceptual enablers (Sundararajan, 2016, p. 47). Together, they deliver a “shift from the simple digitization that characterized the third industrial revolution to a much more complex form of innovation [that characterizes the fourth industrial revolution]” (Schwab, 2016, p. 52). Digital technologies no longer simply supercharge cognitive capitalism, which is based on “the accumulation of immaterial capital, the dissemination of knowledge and the driving role of the knowledge economy” (Moulier Boutang, 2011, p. 50). Instead, they create entirely novel challenges that are no longer about refining existing but about creating new business models that leverage the power of three mutually reinforcing digital revolutions: the platform revolution, the (big) data revolution, and the AI revolution.

3 Platform Revolution

The first revolution is the platform revolution (Cusumano et al., 2019; Parker et al., 2016). In 2015, Tom Goodwin made a now-famous observation: “Uber, the world’s largest taxi company owns no vehicles. Facebook, the world’s most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory. And Airbnb, the world’s largest accommodation provider, owns no real estate. Something interesting is happening” (Goodwin, 2015). What Goodwin put his finger on is that a new breed of companies has begun to extend and disrupt markets by leveraging the power of platform business models. According to a recent quantitative assessment, over roughly the last two decades, platforms have become “ever more pervasive in the global economy and, as a result, are shifting the locus of power and value capture to the platform as the intermediary. They are becoming the infrastructure of and intermediaries for an ever larger number of industrial sectors of the economy” (Kenney et al., 2021, p. 1471).

Platforms are digital infrastructures that intermediate the interactions of two or more groups (Grabher & König, 2020, p. 104; Prassl, 2018, p. 13; Srnicek, 2017, p. 43). By making it easier for people to find, trust, and transact with each other, platform companies often transform existing markets or create entirely new ones (Lobel, 2016, p. 93). Their value does not derive from the things they produce but from their ability to benefit from the matches they both facilitate and organize. Low marginal costs (implying extreme scalability) and large network effects not only give digital platforms an edge over traditional and smaller competitors (Parker et al., 2016, pp. 5 – 12; Rivera, 2020, pp. 726 – 727). Platforms also engage in increasingly state-like forms of “marketcraft” (Vogel, 2018), centrally designing and enforcing bundles of complementary formal institutions that regulate everything from what is allowed to how disputes are resolved (Lehdonvirta, 2022). In short, a defining feature of platforms is “the privatization of governance through digital technology” (Törnberg, 2023, p. 2; cf. Staab, 2019).

Thus, platforms are not markets, hierarchies, or networks. Instead, they constitute a form of economic organization *sui generis*. Whereas “the mode for the market form is contract, for hierarchy command, and for networks collaborate, platforms co-opt” (Stark & Pais, 2020, p. 53). Platforms co-opt the behavior of their users for three purposes, taking advantage of the triangular geometry that connects platform owners to user-providers and user-consumers. First, by blurring the boundaries between work and leisure and consumption and production, they co-opt the “free labor” (Terranova, 2000) of users or “prosumers” to reduce costs (Frayssé & O’Neil, 2015). For example, Amazon benefits from free customer reviews, and Google once trained its algorithms using uncompensated CAPTCHA authentications.

Second, platforms co-opt user behavior “to control and manipulate markets” (Peck & Phillips, 2020, p. 79). Extensive data extraction, in combination with strong information asymmetries between platform owners and platform users, creates fertile ground for such “digital market manipulation” (Calo, 2014) and behavioral modification (Zuboff, 2019). “When a company can design an environment from scratch, track consumer behavior in that environment, and change the conditions throughout that environment based on what the firm observes, the possibilities to manipulate are legion” (Calo & Rosenblat, 2017, p. 1628). For example, Uber has been documented charging consumers on low mobile battery more, having discovered that they are more likely to pay higher prices (Calo & Rosenblat, 2017, p. 1629). Similarly, both Uber and Lyft experiment with psychological tricks to learn about and manipulate their drivers, such as employing loss instead of gain frames and dispatching new pickups to drivers before their current dropoff (Scheiber, 2017).

Third, platforms co-opt user behavior for the purpose of algorithmic management (Stark & Pais, 2020). Specifically, platforms distribute and decentralize control over functions including content creation, work scheduling, or performance evaluation while retaining control over, for example, pricing, task allocation, and data collection (Stark & Pais, 2020, p. 60; Vallas & Schor, 2020, p. 282). Thus, on platforms, control can be “radically distributed, whilst power remains centralized” (Kornberger et al., 2017, p. 79). For example, prominent labor platforms rely extensively on reputation algorithms for worker management (Prassl, 2018, pp. 53–54), with Rosenblat (2018) observing that the “rating system at Uber effectively makes management omnipresent, because it subtly shifts how drivers behave on the job. [Effectively, passengers] perform one of the roles of middle management, because they are responsible for evaluating worker performance” (p. 149).

This means platforms are not mere match-makers. Instead, they “constitute ‘regulatory structures’ that dictate the terms of interaction – between workers and employers, buyers and sellers, clients and contractors, creators, and viewers, and advertisers and consumers” (Rahman & Thelen, 2019, p. 179). That is, platforms do not merely enter markets and give market participants access to each other. They organize markets and make market participants legible to each other and to the platform itself (Cohen, 2019, p. 38). Similar to Braudel’s “great predators,” platforms position themselves not in but “above markets,” enabling them to control and benefit from market transactions (Peck & Phillips, 2020, pp. 76–81). In doing so, they rely less on hierarchical control and disciplinary supervision than on constant monitoring and decentralized and often opaque algorithmic accountability (Stark & Pais, 2020, pp. 59–61).³

4 (Big) Data Revolution

The second revolution is the (big) data revolution.⁴ While the platform represents the organizational form of digital capitalism, data are its main resource. Digitization “turbocharges datafication” (Mayer-Schönberger & Cukier, 2013, p. 83), the process of converting the world into information. The resulting data deluge is a boon to companies that have access to such data, have the technical and organizational ability to extract value from them, and the “big-data mind-

³ In all this, platforms are not just nodes in networks but “represent infrastructure-based strategies for introducing friction into networks” (Cohen, 2019, p. 40). They “operate with the goal of making clusters of transactions and relationships stickier—sticky enough to adhere to the platform despite participants’ theoretical ability to exit” (Cohen, 2019, p. 41). For example, Facebook’s API “locks [app developers and users] into a landscape defined and controlled by Facebook” (Plantin et al., 2018, p. 303).

⁴ Data are a non-rivalrous type of intangible asset that often feature positive externalities, meaning that they become more valuable when combined with other data (for a more detailed discussion, see Coyle et al., 2020, pp. 4–7). Hence, there are brackets around “Big” in the term (big) data revolution: The value of data in digital capitalism usually (but not necessarily) stems from combining large amounts and diverse types of data (Zuboff, 2019, p. 201).

set” to understand their full (and often dormant) potential (Mayer-Schönberger & Cukier, 2013, p. 124; cf. Coyle et al., 2020; Haskel & Westlake, 2017). Thus understood, data can be used to create new forms of value, be it by using e-commerce data to better predict prices for consumer goods, using Google queries to track the spread of viruses, or using large amounts of medical records to detect comorbidity patterns (Mayer-Schönberger & Cukier, 2013).

At the same time, companies do not only capture data to create value. They also create or extract data to capture value. Although we should not underestimate the practical difficulties and financial costs involved, companies are increasingly incentivized to collect more and more data (Sadowski, 2019, p. 5) by, on the one hand, an economic “extraction imperative” (Zuboff, 2019, p. 87) – we collect data because that is what we must do to survive and thrive economically – and, on the other hand, by a more cultural “data imperative” (Fourcade & Healy, 2017, p. 16) – we collect data because this is what successful companies do, even if we don’t exactly know what to do with them yet. For example, a recent outgrowth of these incentives is the rise of the “voice intelligence industry,” which uses smart speakers and personal assistants to analyze our “vocal-cord sounds and speech patterns for information about [our] emotions, sentiments, and personality characteristics, all so that they can better persuade [us]” (Turow, 2021, p. 1). For example, a person coughing or sniffing during voice commands can be used to sell them chicken soup or cough drops, while keywords such as “love” and “enjoyed” can be used to learn about the proclivities and hobbies of users (Turow, 2021, p. 5).

The capture of not only voice data but also textual, biological, location, and other data stems from a desire to better understand, predict, and control the physical and social world. Beyond improving production processes, the central goal might be framed as the use of data to better capture, direct, and sell human attention. This desire to manipulate human attention lies at the heart of today’s surveillance capitalism (Zuboff, 2019) and drives its army of attention merchants (Wu, 2016) to find ever-new ways to extract and refine data about what humans think, feel, want, and do. Consequently, data turn into a “raw material (...) to be extracted, refined, and used in a variety of ways” (Srniczek, 2017, p. 40), rendering data a new “kind of capital, on par with financial and human capital in creating new digital products and services” (MIT Technology Review & Oracle, 2016, p. 2). In short, data have become “a foundational form of capital for everything from the ‘smart home’ to the ‘smart city,’ finance to governance, production to distribution, consumer devices to enterprise systems, and much more. Without data, many of these technologies and organizations would not be able to operate, let alone be able to generate value” (Sadowski, 2019, p. 2).

5 Artificial Intelligence Revolution

The third revolution is the AI revolution.⁵ Following the European Commission's High-Level Expert Group (2018), we can understand AI as “systems that display intelligent behavior by analyzing their environment and taking actions – with some degree of autonomy – to achieve specific goals.” AI has made rapid progress in recent years, driven not only by ever more data but also by exponential increases in computing power and advances in computer science (McAfee & Brynjolfsson, 2017). As a result, A.I. can do more and more at less and less cost. One consequence is that machines can now increasingly perform human-like functions, including driving, diagnosing, writing text, and wrangling data. Therefore, more and more, AI does for mental power what the technologies of the first machine age did for muscle power: It allows humans to surpass existing limitations in manipulating their physical and social environment (Brynjolfsson & McAfee, 2014, pp. 7–8).

Although this is not fundamentally different from the introduction of (personal) computers, its effects are much more sweeping: “The next wave of automation is likely to have effects similar to those of earlier computer technologies, but it is likely to affect more people” (Frey, 2019, p. 339). Digital technologies – be it those of the fourth industrial revolution which currently gathers steam, or those of the third industrial revolution which slowly runs out of it – have a tendency to make “highly skilled labor the main complement of capital in the production process” (Boix, 2019, p. 23) while rendering technological change increasingly labor-replacing (Frey, 2019; Gallego & Kurer, 2022).

Here, the point is not to peddle apocalyptic (or Panglossian) narratives about the “end of work.” Still, it seems incontrovertible that AI will place further pressure on jobs that have survived the first wave of automation (e.g., ad writers, cashiers, food preparers, call center agents, and translators) and place a further premium on complex analytic, social, and technical skills, creating new opportunities for workers with those skills (MIT Work of the Future Task Force, 2020). Furthermore, it is equally important that when “algorithms become your boss,” labor markets will be reconfigured beyond automation, with changes observable across “organizational procedures, workplace practices, talent acquisition, retention[,] and enhancement” (Aloisi & Stefano, 2022, p. 5). Meanwhile, services such as instantaneous accent removal might intensify outsourcing dynamics and shift the balance of power between employers and workers (Chan, 2022), while the growing use of AI in areas such as sentencing, credit scoring, or content creation poses novel societal challenges (O’Neil, 2016).

⁵ Data are a non-rivalrous type of intangible asset that often feature positive externalities, meaning that they become more valuable when combined with other data (for a more detailed discussion, see Coyle et al., 2020, pp. 4–7). Hence, there are brackets around “Big” in the term (big) data revolution: The value of data in digital capitalism usually (but not necessarily) stems from combining large amounts and diverse types of data (Zuboff, 2019, p. 201).

6 The Rise of Digital Capitalism

Together, these three revolutions give rise to a new historical form of capitalism: digital capitalism. Invoking the concept of digital capitalism does not imply that “all of capitalism” is now digital capitalism (Fuchs, 2021, p. 27). Digital capitalism simply denotes an ascendant historical form of capitalism in which platform-based, data-driven, and AI-powered business models capture an increasing share of profits, directly or indirectly control an increasing share of economic life, and increasingly serve as role models for start-ups and established companies. The interconnectedness of the three digital revolutions distinguishes the concept from related but more narrowly focused concepts such as algorithmic (Mittelman, 2022), platform (Srnicek, 2017), and surveillance capitalism (Zuboff, 2019). For example, the concept of surveillance capitalism unduly fixates on issues of data-driven behavioral prediction and manipulation, screening out or even obscuring “broader and arguably more important problems of private power in the information age,” such as market power and labor exploitation (Kapczynski, 2020, p. 1474).

However, these “other problems” are not only important (to understand) in themselves. They are also integral to (understanding) surveillance capitalism. This became evident when surveillance capitalist Facebook clashed with oligopolist gatekeeper Apple over its App Store policies.⁶ The platform, (big) data, and AI revolutions interact in complex and often self-reinforcing ways, making it critical to not treat them in isolation. For example, the AI revolution has symbiotically evolved with the (big) data revolution. Just as AI needs large amounts of data, so are large amounts of data only useful with AI to analyze them. At the same time, platformization enables companies to control the data that are generated by the interactions they monitor and organize. In turn, this allows them to further entrench their positions, such as by improving their recommendation algorithms (Cohen, 2019, pp. 40–42; Törnberg, 2023, pp. 4–5). Thus, while the notion of surveillance capitalism can help us understand specific dynamics of digital capitalism (e.g., commodification-as-expansion), it provides less insight into other dynamics (e.g., disruption as asymmetry creation) or the interactions between these different dynamics and the challenges they pose.

Importantly, digital capitalism concerns more than just the continuation of existing trends toward the growing importance of “cognitive” or “immaterial” factors in capitalism (Moulier Boutang, 2011). Instead, it concerns the intensification of existing trends via novel means that, together, create something qualitatively different (Rivera, 2020; Törnberg, 2023). For example, the (big) data and AI revolutions add to the growing importance of intangible assets (Haskel & Westlake, 2017; Moulier Boutang, 2011) while also introducing

⁶ This fixation leads Zuboff to lionize Apple as the frontrunner in a “new rational capitalism” that finally confirms “our inner sense of dignity and worth, ratifying the feeling that we matter” (Zuboff, 2019, p. 30) and vilify Google and Facebook as dangerous agents of surveillance capitalism.

radically different possibilities (e.g., achieving human-like or better performance across an array of tasks) and dangers (e.g., surveillance and behavioral manipulation) (Mayer-Schönberger & Cukier, 2013; Zuboff, 2019). Similarly, the platform revolution grows out of existing trends of “workplace fissurization” (Weil, 2014) and the financialization of the firm (Davis, 2015) but also exacerbates and transcends these developments by creating new and easily scalable business models and organizational logics (Rahman & Thelen, 2019).

Notably, the rise of digital capitalism does not imply a “total rupture” (Jessop, 2001, p. 287) or radical discontinuity (Fuchs, 2021). Digital capitalism does not replace the previously dominant form of capitalism, financial capitalism. Instead, the two forms co-exist and interact in complex ways, as was the case in previous periods of capitalist transformation (Kocka, 2016, p. 123). Much like financial capitalism in the 1970s and 1980s, digital capitalism is “simultaneously a continuation and a break from the previous era, contested and not yet fully formed, and characterized by a plurality of often contradictory institutional forms and strategies” (Törnberg, 2023, p. 2). For example, the centrality of venture capital in the digital economy imprints a financial logic of assetization on the business models of many digital companies, affecting, among other things, their growth strategies (Cooiman, 2022; cf. Staab, 2019). Similarly, digital advertising markets have been closely modeled on financial markets, as exemplified by their proclivity to standardize and abstract attention into discrete units, such as “viewable impressions” (Hwang, 2020).

Nonetheless, the concept of financialization is increasingly inadequate for understanding what is happening not only at the capitalist frontier but also (increasingly) in the capitalist hinterlands. After all, today’s most valuable business and most well-regarded business strategies do not *primarily* involve financialization but revolve around the exploitation of key positions in platform ecologies, the ability to collect and use data, and the ability to develop, control, and utilize AI. As Törnberg (2023) [p. 2] puts it, “digital proprietary markets operate under conditions and pressures that are qualitatively different from those of post-Fordism.” Financialization might be a key driver behind many of these processes, but it does not help us understand the processes themselves. Thus, although financial capitalism has not and likely will not disappear, financialization is no longer the only game in town. Still, just as the presence of industrial logics has not stopped scholars from acknowledging the rise of financial capitalism, so should the continued presence of financial logics not preclude taking the rise of digital capitalism seriously or studying the ways in which financial and digital capitalism have been “hybridized” (Piletić, 2022; cf. Jessop, 2001).

In short, capitalism remains more than digital capitalism, and digital capitalism remains in important ways entangled with financial capitalism. At the same time, understanding the central dynamics of contemporary capitalism requires new and historically specific concepts that do justice to the ways that digital capitalism differs from its predecessors and poses particular challenges (cf. Fuchs, 2021; Pace, 2018). As such, the concept can further illuminate and uncover connections between empirical processes such as the continuous expansion of surveillance and data collection (Sadowski, 2019; Zuboff, 2019), the growing concentration of economic power in digital platforms (Srnicsek, 2017; Staab, 2019), the digital transformation of labor markets (Prassl, 2018; Vallas & Schor, 2020), and the new realities of market governance by private tech companies (Birch, 2020a; Lehdonvirta, 2022; Törnberg, 2023).

7 The Nature and Challenges of Digital Capitalism

To understand the specific dynamics of digital capitalism and the challenges it poses, we first need a better conceptual understanding of capitalism. For the purposes of this paper, we can understand capitalism as a social order in which institutionalized profit-seeking creates an internal dynamism that not only incessantly revolutionizes the economy (and the distribution of power therein) from within (*disruption*) but constantly (and contestedly) runs up against, subverts, and incorporates the institutions in which the economy is (beneficially) embedded and which limits what can become a commodity (*commodification*).

This definition is based on a thorough reconstruction of the literature on capitalism that builds on not only recent historical and sociological scholarship on capitalism (Fulcher, 2004; Kocka, 2016; Sewell, 2008; Streeck, 2012) but also insights from capitalism's great theorists (Grabher & König, 2020; Peck & Phillips, 2020). It considers Polanyi's insights into the embedded nature and disembedding dynamism of capitalism (Polanyi, 2001), Schumpeter's work on the central role of creative destruction (Schumpeter, 2008), Braudel's investigations of the information and power asymmetries between capitalism's "great predators" and other market participants (Braudel, 1992), and Weber's (and Marx's) scholarship on the institutionalized nature of profit-seeking that underlies capitalism's commodifying and disruptive thrust (Weber, 2007). This is not the only way to understand capitalism, but one well grounded in social-scientific scholarship (for a more detailed discussion, see the online appendix).⁷

⁷ This perspective sees an invariant logic at capitalism's core, a "strange stillness," as Sewell (2008, p. 526) puts it. However, it also suggests that capitalism will vary historically (and geographically) depending on three factors (Grabher & König, 2020, pp. 100–103): i) the technologies or "machines" available to entrepreneurs (Polanyi, 2001, pp. 42–43); ii) the current ideational "constellation," which refers to the scientific theories, organizational ideas, future imaginaries, or social values that inform and justify economic decisions and conditions (Polanyi, 2001, p. 125); iii) the extent to and ways in which the state (and, through it, different social coalitions) constrain or support capitalism's dynamism (Bohle & Greskovits, 2012).

Nonetheless, while understanding “the abstract logic of capitalism is the best starting point for (...) distinguishing and periodizing phases of capitalist development” (Jessop, 2001, p. 299), it is only a starting point. Accordingly, the next sections demonstrate the usefulness of thinking about digital capitalism through the lens of commodification and disruption, showing how the three digital revolutions have rekindled capitalism’s endogenous, disruptive dynamism and system-extending, commodifying character and how this has created new and distinct challenges for contemporary societies that require new conceptual tools (see also Figure 1).⁸

7.1 Digital Commodification

There are two ways that digital capitalism is commodifying (Cioffi et al., 2022). On the one hand, digital firms circumvent or challenge existing decommodifying institutions (e.g., labor laws). On the other hand, they extend the reach of markets into previously non-commodified spheres of life.

Commodification as Subversion

A central feature of platform-based business models is their “definitional defiance” (Lobel, 2016, p. 93). Platform firms “straddle the very categories that we use to organize our understanding of the political and economic world. [This places them] in the institutional cracks of the regulatory system [which they] consciously exploit [...] to thwart challenges to their power” (Atal, 2021, p. 336). That is, attempts to exploit legal grey areas (regulatory arbitrage) or actively change the law (regulatory entrepreneurship) are part and parcel of platform-based business models. Platform firms “are built around and based upon a plan to change the law – and, in some instances, to simply break the law in the meantime. For these companies, political activity has become a critical part of business strategy” (Barry & Pollman, 2017, p. 386).

Thus, institutions that protect individuals and societies from unfettered markets are systematically challenged and sometimes rolled back. In fact, “many of the legal arrangements now under threat trace their origins to Polanyi’s countermovement” (Cohen, 2019, p. 25). This re-commodification is most apparent with regard to labor regulations, which platform companies famously try to avoid by classifying workers as independent contractors despite exerting considerable control over them (Prassl, 2018). Nonetheless, we can also see this in transportation markets, where the relatively restrictive licensing and safety regulations that Uber challenges were introduced to mitigate

⁸ This process clearly resembles the rise of financial capitalism, which has also been characterized by the financial logic’s encroachment on more and more spheres of life, subjecting them to market pressures (e.g., public services). Similarly, financialization has disrupted the balance of economic power between financial and non-financial firms, giving the former increasing control over personnel and investment decisions.

the negative externalities of unregulated markets for cities (congestion) and workers (cut-throat competition) (Rogers, 2017). In short, digital capitalism is commodifying to the extent that it systematically subverts regulations that are meant to re-embed markets and decommodify labor.

Commodification as Expansion

Digital capitalism extends the reach of the market in three ways. First, contemporary digital companies control and curate most of the channels that people use to inform themselves and communicate with each other (Dolata, 2019, p. 187; van Dijck et al., 2018). This *commodification of social infrastructures* creates potential externalities in the form of polarization, radicalization, and deteriorating mental health. Second, the so-called sharing economy “formalize[s] and systematically record[s] previously informal exchanges” (Lobel, 2016, p. 109). By making it easier to find, trust, and pay people, companies such as Airbnb or have commercialized activities that were previously limited to altruistic settings, such as renting a spare bedroom or a drill on. This *commodification of cooperation* also comes with potential externalities in the form of alienation and the crowding-out of altruistic motivation.

Third, digital companies increasingly record, analyze, and profit from private and mundane activities (Sadowski, 2019). Driven by the desire to capture and control human attention and to predict and manipulate human behavior, digital attention merchants (Wu, 2016) and surveillance capitalists (Zuboff, 2019) have drilled ever deeper holes into people’s personal lives, including areas that were “previously walled off from commercial exploitation” (Wu, 2016, p. 6). Activities such as reading books, watching videos, searching for information, and connecting with friends are now all recorded and mined for insights that can be subsequently sold as “prediction products” on “behavioral futures markets” (Zuboff, 2019, p. 8). This *commodification of personal lives* does not end on the internet, with surveillance capitalists increasingly taking over the real world too, from sideboards to sidewalks (Zuboff, 2019, pp. 199–232).

The intrusive expansion of markets can be seen as a “digital enclosure” (Cohen, 2019, p. 62) or “digital dispossession” (Zuboff, 2019, p. 99) in which human experience – expressed by text, voice, gait, or pulse – is recast as “a source of raw materials that are there for the taking and that are framed as inputs to particular types of productive activity” (Cohen, 2019, pp. 48–49). This recasting of human activity as “unowned but potentially appropriable” (Cohen, 2019, p. 49) constitutes a powerful performative act in which the law plays a key “productive role” (Cohen, 2019, p. 33) in constituting contested practices as “lawful and preordained” (Cohen, 2019, p. 62). For example, in *Moore v. Regents of the University of California*, the court ruled that a patient’s discarded blood and tissue samples are not their personal property and that individuals do not have rights to a share in the profits earned from commercial products or research derived from their cells. This logic of productive appropriation now serves as legal justifica-

tion for digital firms touting the “innovativeness” of the “proprietary” algorithms that allow them to profit from the data of others (Cohen, 2019, p. 72).

Thus, via legal mechanisms, digital capitalism has involved the assetization of more and more “things,” driving their conversion into identifiable and tradeable property (Birch, 2020a; Sadowski, 2019). On the one hand, this has enabled digital companies to capture “technoscience rents” and entrench their dominant economic positions (Birch, 2020a). On the other hand, it has expanded the reach of markets, turning data into another fictitious commodity in the Polanyian sense: “they are brought to the market, but are not produced for sale. Utilizing Google maps or hitting the “like”-button on Facebook [...] are not [actions] motivated by the intention to produce data, but rather to get directions and to signal approval respectively” (Grabher & König, 2020, p. 105). Thus, digital capitalism is commodifying to the extent that it expands the reach of the market into previously non-commercial spheres via the combined power of technology and the law.

The Challenges of Commodification

Commodification poses two types of challenges. First, it requires that policymakers adapt or “refocus” the rules and regulations that digital platforms have blurred in the name of technological exceptionalism (Rosenblat, 2018). However, although it is important to minimize the social costs of digital business models (e.g., precarity, tax avoidance, congestion), it is also important to acknowledge their social benefits (e.g., flexibility, consumer welfare) (Rogers, 2017). This does not mean that the regulatory wheel must be reinvented. For example, existing employment law already offers the tools to limit exploitation and extreme volatility while retaining flexibility. As Prassl (2018) remarks, “Any suggestion that employment rights are inherently incompatible with flexibility is a myth (...) By treating gig workers as employees and (most) platforms as employers, we can throw out the bath water – and save the baby” (pp. 116, 128).

In addition, digital technologies are not inherently subversive. They can also be used to better enforce regulations. For example, the goal of the “Nordic approach to platform regulation” is “to lower the transaction costs for platform firms to comply with existing regulations” (Söderqvist, 2017, p. 350). Thus, collective bargaining agreements could be written into the code of platforms and discriminatory practices could be more easily monitored and sanctioned. This indicates that adaptive responses that avoid the Scylla of extreme regulatory conservatism and the Charybdis of regulatory capitulation are possible, though, of course, not inevitable (Thelen, 2018).

Second, commodification requires policymakers to protect societies from the unfettered expansion of markets without destroying those markets altogether. After all, little is achieved if the specter of a “commodification of everything” (Lobel, 2016, p. 92) scars policymakers into banning everything. Although

health data from smart devices can represent an important source of diagnostic insight, there are dangers associated with letting markets decide how such data are collected, processed and priced. Careful regulation may even engender legal certainty, consumer trust, and fair data-sharing, furthering the development and adoption of new technologies and services. Margrethe Vestager (2021), for example, recently remarked that while “it may sound strange,” “the point of the [EU AI] regulation is to embrace AI fully. That is how you ensure that customers feel safe and that those deploying the technology feel comfortable in the regulatory environment.”

Similarly, data may be valuable, but they cannot become something people have to be able to afford not to disclose.⁹ Of course, societies themselves have begun to defend themselves against the encroachment of markets, ranging from a “certain ‘disenchantment’” to “full-fledged ‘revolt[s]’” (Wu, 2016, p. 7). Policymakers need to acknowledge and constructively channel these first stirrings of a countermovement against markets for human attention, carefully balancing market-creating and market-correcting policies (Cioffi et al., 2022).¹⁰ Law and policy have played an active role in shaping the current expansionist trajectory of digital capitalism, and they can also re-embed it in a more stable riverbed without forcing societies to forgo the benefits of its thrust (Cohen, 2019).

7.2 Digital Disruption

Digital capitalism not only disembeds markets via subversion and expansion. It also changes these markets in two ways, changing what makes individuals, firms, and societies successful and creating novel asymmetries of information and power.

Disruption as Creative Destruction

While there are debates about the speed and precise nature of those changes, there is little disagreement that AI is set to transform the world of work while upending existing and creating entirely new industries. Similar to previous general-purpose technologies, it will require further complementary organizational and conceptual changes – and therefore time – to fully realize its potential, but this potential is enormous (Frey, 2019, pp. 301–341; MIT Work of the Future Task Force, 2020). As we have seen, AI will put a premium on certain skills while putting pressure on others. As Brynjolfsson and McAfee (2014) observe, “There’s never been a better time to be a worker with special skills

⁹ Apple, for example, increasingly justifies the higher prices of its products by its higher privacy standards, implicitly branding privacy as a luxury good.

¹⁰ Newman positions the twin strategies of market-creation and market-correction at the heart of the “dual policy agenda” behind the EU’s digital policies (Newman, 2020, p. 276).

or the right education, because these people can use technology to create and capture value. However, there's never been a worse time to be a worker with only 'ordinary' skills and abilities to offer, because computers, robots, and other digital technologies are acquiring these skills and abilities at an extraordinary rate" (p. 11).

Similarly, companies that assemble intangible assets, such as databases, patents, or algorithms, have an ever-increasing advantage over traditional companies characterized by tangible assets (Haskel & Westlake, 2017). Furthermore, the ability of platforms to control profit and data flows while outsourcing the bulk of operating costs to users gives them an additional advantage over traditional competitors, with Airbnb and hotels and Uber and taxis representing textbook examples (Rahman & Thelen, 2019). Thus, the success of individuals, firms, and countries increasingly depends on whether their asset profile is complementary to the structure of the digital economy: Do they possess knowledge-based capital, whether individually-held human capital (e.g., education, skills) or collectively-held innovation capital (e.g., scientific knowledge, algorithms, data) (OECD, 2013; Seidl, 2022b)? Are they benefiting from the "platformization" of the economy, or are they out-competed by new, platform-based competitors? In short, by creating new jobs and businesses while rendering old ones obsolete, digital capitalism disrupts the economic pecking order and produces new winners and losers (Gallego & Kurer, 2022).

Disruption as Asymmetry Creation

Digitalization is not only changing the relative value of skills and business models. It also creates novel asymmetries between different economic actors. Specifically, it concentrates power in the hands of those that own platforms, control data flows, and design AI systems. Their role as intermediaries allows platforms to exploit asymmetries of market power between them and other companies and to capitalize on information asymmetries between them and their users. Platforms, in other words, operate in a "shadowy zone" (Braudel, 1992, p. 22), a "zones d'opacité" (Peck & Phillips, 2020, p. 75), hiding their power behind proprietary algorithms inscrutable to their uninitiated users. This is also true in the workplace, where workers might be exposed to new forms of algorithmic control and surveillance that are difficult to understand and contest (Aloisi & Stefano, 2022).

The winner-take-most nature of many – although not all – platform markets also incentivizes platforms to put growth over profits, blunting the traditional weapons of competition law focused on short-term consumer welfare (Khan, 2017). For example, Uber's "venture capital war chest" enables the company to subsidize rides to gain market share, which some view as predatory pricing. Likewise, when the then-up-and-coming online retailer for baby products Diapers.com declined an acquisition offer from Amazon, Amazon used its

deep pockets to massively (cross-)subsidize its own baby products.¹¹ This not only dented Diapers.com's market share but also undermined investor confidence. After all, who wants to invest in an Amazon competitor? Eventually, Diapers.com was forced to sell to Amazon, which integrated the company into its own product line (Khan, 2017, pp. 768–774). As a result, there is talk of a “kill-zone” around tech giants (The Economist, 2018), with venture capitalists increasingly wary of investing in companies that compete against dominant platforms (Peck & Phillips, 2020, p. 81). Because consumers are not immediately hurt by higher prices, companies such as Amazon can march “toward monopoly by singing the tune of contemporary antitrust” (Khan, 2017, p. 716).

In a related phenomenon, the dual role of platforms as participants in and intermediaries of markets enables them to “exploit information collected on companies using its services to undermine them as competitors” (Khan, 2017, p. 803). Amazon, for example, is a marketplace, an advertising platform, and a retailer in its own right. Third-party sellers rely on and may benefit from these services, but they enter a Faustian pact of sorts. After all, Amazon can use the data it gathers about which products sell best to offer its own, cheaper products (Khan, 2017, pp. 780–783). This means that while Amazon can use the data it collects regarding what people search for and what they buy to enter lucrative markets, third-party sellers bear the risk of experimentation and risk becoming the victims of their own success, without really having an alternative to Amazon.

Platform firms also benefit from information asymmetries vis a vis their users. While digital technologies have reduced transactions costs in the Coasian sense (Coase, 1937), they have not eliminated the firm or cut out the middlemen. Instead, digitalization has produced a new breed of powerful middlemen – the platforms themselves – with “the power to transform (...) markets into a controlled space that gives a huge advantage [to themselves]” (Pistor, 2020, p. 117). First, platforms can use the data they collect about consumers to predict their behavior, benefitting from an “asymmetry of predictive power at the expense of the consumers” (Pistor, 2020, p. 102). Second, platforms can use the same data and their control over the design of user interfaces to manipulate what users see, feel, and think, exploiting both common and idiosyncratic biases and limitations (Calo & Rosenblat, 2017). This “produces unprecedented asymmetries of knowledge and power” (Zuboff, 2019, p. 187): Corporations have “unprecedented knowledge of the minutiae of our daily lives, while we know little to nothing about how they use this knowledge to influence the important decisions that we – and they – make” (Pasquale, 2015, p. 9).

¹¹ Dominant platforms can out-compete competitors on price by either incurring debt without losing investor confidence or cross-subsidizing a less profitable part of their business with a more profitable one (Srnicke, 2017, p. 46).

The Challenges of Disruption

Disruption poses two types of challenges. The first challenge, originating from disruption as creative destruction, rebalancing the distribution of resources, socially and intertemporally, not least to avoid a political backlash (Gallego & Kurer, 2022). On the one hand, digital technologies substitute capital for labor, meaning that they have a “destruction effect” (Schwab, 2016, p. 36). On the other hand, they complement labor with capital, producing a “capitalization effect” (Schwab, 2016, p. 36). Addressing the destruction effect requires redistributing the fruits of technological change from winners to losers. The historical record shows that “episodes of job-replacing technological change have regularly brought social unrest and, at times, a backlash against technology itself” (Frey, 2019, p. XI). This suggests that redistribution can help avoid the “technology trap” that sees technologies with long-term benefits resisted because of their negative short-term effects on some groups (Frey, 2019). This means that compensatory policies (e.g., a universal basic income) can shore up technological progress because the acceptance of a novel technology “depends on whether those affected by it stand to gain from it” (Frey, 2019, p. xi).

Addressing the capitalization effect requires redistributing resources from the present to the future, that is, investments in knowledge-based capital that carry a present-day cost but whose benefits materialize in the future (Seidl, 2022b). As A.I. rings the bell for the next round in the race between technology and education (Goldin & Katz, 2008) it becomes imperative that the runners are well trained, can refresh themselves along the way, and have access to the best gear and science (MIT Work of the Future Task Force, 2020). In fact, investments in education, life-long learning, and research and development contribute to not only fully realizing the capitalization effect of digital technologies but also mitigating their destruction effect. If governments “pursue policies to kickstart productivity growth while helping workers adjust to the onrushing wave of automation, [people] race alongside the machine, [making them] less likely to rage against it” (Frey, 2019, p. 349). The difficulty, however, is that redistributing resources involves not only distributive conflicts between different groups but also intertemporal tradeoffs between present and future consumption, making them politically thorny (Jacobs, 2016; Seidl, 2022b).

The second challenge involves the centrifugal redistribution of knowledge and power, which counters the centripetal tendencies of the digital economy. As we have seen, digital companies pose “new and fundamental challenges to the formal equality of market participants because of their one-sided control over predictive and manipulative data power” (Pistor, 2020, p. 113). This challenge can be addressed via rebalancing power relations between the “great predators” of the digital economy and everyone else in this digital ecosystem. If platforms effectively “compete with states for the right to regulate” (Törnberg, 2023, p. 6), democratic states should reassert their “regulatory sovereignty” (Vestager, 2020; cf. Cioffi et al., 2022). First, a renewed competition policy – insisting, for example, on interoperability requirements – could break the

market dominance of digital platforms and oxygenate digital markets; alternatively, public utility regulations could domesticate the digital giants (Khan, 2017, pp. 790–802). Second, a data ownership regime could undo the one-sided appropriation of data by tech firms, allowing data producers to decide when and for what purpose data are collected and used or at least giving them a fair share of the revenue that flows from those data (Pistor, 2020, p. 119).¹² Finally, algorithmic power – the design choices and the opacity in which they are clouded (Braudel, 1992) – could themselves be contested via increased transparency and accountability and, ultimately, the democratization of design choices and even ownership (see also, Aloisi & Stefano, 2022; Lehdonvirta, 2022; Muldoon, 2022a).

8 Conclusion

This paper has argued that to understand digitalization one needs to reckon with the simple fact that most digital technologies are developed, designed, and deployed by capitalist firms. Building on the theoretical and historical scholarship on capitalism, the paper has identified *commodification* – the “expansion of market mechanisms into non-market coordinated social domains as well as their intensification in already market-dominated settings” (Ebner, 2015, pp. 369–370) – and *disruption* – the transformation of the requirements for economic success and of the sources of economic power – as key elements of capitalist development. Combining these insights with contemporary scholarship on digitalization, the paper has argued that the intertwined platform, (big) data, and AI revolutions have led to a new historical form of capitalism: digital capitalism. Although entangled with financial capitalism, digital capitalism’s emergence has created new dynamics and challenges that require new conceptual tools, which this paper begins to formulate.

There are at least three limitations to the framework presented here. First, it treats the invention of digital technologies as somewhat exogenous, even though this development is deeply dependent on the social context in which it takes place. By engaging more closely with the literature on the social shaping of technologies, future research should consider, in more detail, how the dynamics of capitalism influence the technologies that are (further) developed, how this happens, and who does it. Without denying that technologies are profoundly shaped by social contexts, one should acknowledge that technologies can have certain intrinsic features that make certain practices (e.g., connecting) easier (not inevitable) while making others (e.g., anonymity) harder (not impossible) (MacKenzie & Wajcman, 1999).

¹² Ideally, this data ownership regime would be collective in nature (e.g., a public data trust), reflecting the fact that value mainly stems from the combination of multiple data points (Pistor, 2020).

Second, by focusing on the platform, (big) data, and AI revolutions, the paper downplays a potential “fourth” digital revolution characterized by the emergence of blockchain technologies and Web3. For many, this revolution will put some of the dynamics of today’s digital capitalism in reverse gear, marrying the participatory and egalitarian ideals of Web 1.0 with the convenience and richness of Web 2.0. However, leaving aside how transformative or practical blockchain technologies will ultimately be, there are good reasons to assume that they will reinforce rather than reverse capitalism’s commodifying and disruptive dynamics. We can already observe “centralization *through* platforms” in the crypto space, with most people interacting with blockchains through platforms such as Infura or OpenSea (Marlinspike, 2022). Furthermore, as Muldoon (2022b) argues, although Web3 is “pitched as a return to aspects of Web1,” similar to Web 2.0, it “extends the logic of monetizing digital interactions even further into our daily lives.” By making it possible to attach property rights to everything (e.g., images, tweets, digital perfume), tokenization might well imply the “super-financialization of everything” (Bria, 2022; cf. Birch, 2020b, pp. 22–24).

Third, just as one cannot be silent about capitalism when one speaks about digitalization, one cannot be silent about politics when speaking about digital capitalism. After all, technological change is not social destiny. Rather – to use a terminology introduced by Toynbee (1972) – the double dynamic of digitalization confronts societies with numerous “challenges” to which they can and do “respond” in different ways. Capitalism has always been shaped by not only technology but also the ideas, social relations, and state institutions in which it is embedded. As the historian of technology Melvin Kranzberg remarked, technology “might be a prime element in many public issues [but] nontechnical factors take precedence in technology-policy decisions” (Kranzberg, 1986, p. 550; MacKenzie & Wajcman, 1999). This means that the nature and trajectory of digital capitalism is shaped and refracted by politics, whether congealed in institutions or mobilized to change them.¹³

To understand the politics of digital capitalism, it seems particularly important to focus on coalitional and ideational politics (Seidl, 2022a). On the one hand, commodification spawns protective countermovements, and disruption has “strong distributive implications” (Gallego & Kurer, 2022, p. 464). The ensuing coalitional fluidity creates “a particular kind of politics, intrinsically more open than usual” (Hall, 2016, p. 41), that gives actors more freedom to challenge the social coalitions underlying existing institutions. On the other hand, digitalization creates “profound and pervasive” uncertainty (Taeihagh et al., 2021, p. 3). Ideational battles over the definition and legitimacy of novel business models have therefore been central to the rise of digital capitalism. For example, the term platform, with its neutral-sounding, facilitating connotations, has allowed

¹³ Digitalization also affects the very nature of politics itself. For example, the rise of digital media has transformed at least the economics if not the culture of news; in turn, this has important implications for the transformation of the public sphere (cf. Jungherr & Schroeder, 2022).

tech companies “to pursue current and future profits, to strike a regulatory sweet spot between legislative protections that benefit them and obligations that do not, and to lay out a cultural imaginary within which their service makes sense” (Gillespie, 2010, p. 348). Similarly, digital companies use the “myth of technological exceptionalism” (Rosenblat, 2018, p. 34) and the promise of technological solutionism (Nachtwey & Seidl, 2023) to exempt themselves from regulation and avoid too much scrutiny (Zuboff, 2019). Nonetheless, tech companies are not unassailable, and popularity and power can also be weaponized against them (Culpepper & Thelen, 2020; Seidl, 2022a).

These limitations notwithstanding, this paper offers a theoretically sound and historically grounded framework for thinking about the current digital transformation that takes capitalism seriously. It situates the existing scholarship on digitalization within the history and theory of capitalism, it brings together a wide-ranging and often disconnected literature, and directs the attention of scholars and practitioners toward the drivers, dynamics, and challenges of digitalization. This paper remains agnostic about how exactly commodification and disruption are operationalized. Commodification can be understood in a Polanyian (Cohen, 2019; Polanyi, 2001), Habermasian (Habermas, 1987), or Marxist sense (Harvey, 2010; Rosa et al., 2017) and disruption can be understood in a Braudelian (Peck & Phillips, 2020) or a Schumpeterian sense (Schumpeter, 2008). Nonetheless, these concepts capture the key dynamics and challenges associated with digital capitalism. As financialization gradually loses its explanatory power, the paper offers scholars and practitioners a heuristic for where to look next and what to look for when studying the transformations of contemporary capitalist societies.

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Online Appendix

Commodification and Disruption: Theorizing Digital Capitalism

The following section grounds the definition of (digital) capitalism used in the paper in a longer discussion of the social-scientific scholarship on capitalism.

What is Capitalism?

Capitalism is an essential yet essentially ambivalent social scientific concept. This ambivalence plays out in at least three ways.¹⁴ First, capitalism refers to both a certain type of economy and a “capitalist society” (Streeck, 2012, p. 2), a term that signals the broader social preconditions and ramifications of such an economy. Second, capitalism denotes both a trans-historical “logic” and the particular historical formations within which this logic takes shape (Sewell, 2008). Finally, capitalism is meant to capture both the varieties and commonalities of capitalist societies (Streeck, 2010). To do justice to these ambiva-

¹⁴ One could add a fourth ambivalence that shall not concern us here, namely that the concept of capitalism has both an analytic and a critical function, that it is “at once a tool of scholarly insight and of social critique” (Kocka, 2016, p. vii).

lences, any analytic conceptualization of capitalism must fulfill three criteria: i) It has to be sufficiently abstract to capture capitalism's distinct logic; ii) It has to be sufficiently versatile to do justice to diachronic and synchronic particularities; iii) It has to be sufficiently encompassing to capture the dialectic relationship between a capitalist economy and society at large.

Max Weber (2007) provides the first element of such a conceptualization when he puts the realization of "(formally) peaceful chances of profit" (p. xxxii) center stage. What unites early-modern merchants, modern industrialists, and today's entrepreneurs is not the nature of their activities but the motivation and expectation of profiting from those activities (Fulcher, 2004, p. 14). Modern capitalism, or "capitalism proper" (Fulcher, 2004, p. 14), emerges when this profit-seeking attitude becomes institutionalized, that is, widely expected, practiced, and enforced "under penalty of ruin" (Marx, 2010, p. 173). Historically, this happened in the late 18th century, when "the whole economy [became] dependent on the investment of capital and [when it was] not just trade that [was] financed in this way but production as well" (Fulcher, 2004, p. 14; Kocka, 2016, p. 53). Not long after that, the "constant revolutionizing of production" and "uninterrupted disturbance of all social conditions" were recognized as capitalism's distinguishing features (Marx & Engels, 1848, p. 16).

This points to the second element of our conceptualization: Due to the institutionalization of profit-seeking, capitalism “incessantly revolutionizes the economic structure from within” (Schumpeter, 2008, p. 83). Joseph Schumpeter saw this most clearly, noting that capitalism “is by nature a form or method of economic change and not only never is but never can be stationary” (Schumpeter, 2008, p. 82). For Schumpeter, the “fundamental impulse that sets and keeps the capitalist engine going” (Schumpeter, 2008, p. 82) is the constant creative destruction and construction of markets and business models by profit-seeking, “disequilibrating” entrepreneurs (Schumpeter, 2008, p. 132).

This is the great paradox at the heart of capitalism: Although change is its only theme and an “immense mutability” (Kocka, 2016, p. 168) or “unlimited flexibility [and] capacity for change” (Braudel, 1992, p. 433) are its defining features, a peculiar constant gives these changes direction. For Streeck (2009), “The direction is expansion and its mechanism (...) is innovation. (...) Capitalism (...) is a social order that changes in an orderly way by systematically encouraging disorder” (p. 236). At capitalism’s core, as William Sewell (2008) puts it, is a “strange stillness,” with capital “always churning, always self-valorizing, moving endlessly in Marx’s sequence of M–C–M” (p. 526). The direction of this dynamism, however, is not toward increasingly competitive markets but toward an increasing concentration of economic power. For Braudel (1992), this “zone of the anti-market, where the great predators roam,” is “the real home of capitalism” (p. 230).

Furthermore, although this dynamism arises from within the economy, it is not limited to it. Capitalism – and this is the third element of this conceptualization – features a “system-extending character” (Kocka, 2016, p. 23). That is, it is not only an economic order but also a social order. Capitalism, as Karl Polanyi (2001) observed most powerfully, is integrated or embedded in society in a relationship that is both supportive and subversive.

It is *supportive* in that social trust or social norms grease the wheels of an economy that would otherwise break down under the weight of transaction costs (Granovetter, 2017; Hirschman, 2013); in that capitalism’s innovativeness depends not only on the public provision of public goods such as education and basic research but also on entrepreneurial states steering and crowding in investments (Block, 2008; Hacker & Pierson, 2016; Mazzucato, 2013); in that capitalist dynamism in all its “four Cs” of credit, competition, commodification, and creativity (innovation) is driven by “fictional expectations” and the constant conjuring of imagined futures that reassure, galvanize, or mobilize creditors, businesses, consumers, and entrepreneurs (Beckert, 2013, 2016); and in that capitalism benefits from the obligations or “beneficial constraints” (Streeck, 1997) that society imposes on it, in terms of both economic efficiency due to the collective facilitation of coordination (Hall & Soskice, 2001) and political and ecological sustainability due to the collective mitigation of social costs (Streeck, 2016).

It is *subversive* in that capitalism constantly expands into or “colonizes” social spheres that have hitherto operated under different logics and undermines institutions, such as labor law, that have constrained markets (Ebner, 2015; Habermas, 1987; Polanyi, 2001). Such dynamics of spatial or social land-grabbing or *Landnahme* directly follow from capitalism’s accumulative imperative, the very engine of its dynamism (Harvey, 2010; Rosa et al., 2017). Decommodifying institutions that contain and constrain capitalism’s commodifying drive – even when to its own benefit – are never safe from this subversive dynamism. Capitalists, after all, make “a living by specializing in the subversion of social constraints” (Streeck, 2009, p. 242). Nonetheless, the “strong utopia” implied by capitalism without constraints – by a self-regulating “market society” that commodifies even the “fictitious commodities” of land, labor, and money – will not go uncontested. Such a society “could not exist for any length of time without annihilating the human and natural substance of society” (Polanyi, 2001, p. 3). Society will take decommodifying measures to protect itself from the vagaries of unfettered markets. This social contestation of capitalist expansion is what Polanyi refers to as the “double movement” (Polanyi, 2001, p. 136).¹⁵

This reconstruction of capitalism’s disruptive and commodifying dynamics serves to historically and theoretically ground the main papers’ discussion of digital capitalism.

¹⁵ In their extremely insightful article, Grabher & König (2020), p. 103 argue that from “a Polanyian perspective (...) discontinuities in economy-society configurations and transformations of socio-economic coordination are not a quasi-natural process, but triggered by the interplay of technological affordances, performative effects of science and efforts to re-organize political and societal institutions.” While I share this overall perspective, my paper differs in several ways. First, it is interested in not only the drivers of discontinuities or variation but also the continuities that stem from capitalism’s core logics of dynamic disruption and expanding commodification. Second, it more explicitly distinguishes between the (more Polanyian) idea of commodification and the (more Schumpeterian and Braudelian) idea of disruption. Finally, it offers a broader conception of the (performative) role of ideas, including not only scientific theories but also various cognitive and normative ideas.

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