Google's Advertising and Capital

Shane Terence Miller
University of Utah, 380 1530 E. RM 301, Salt Lake City, UT 84112, USA.
Email: shane.miller@soc.utah.edu

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Abstract

Google has been studied by scholars as exemplifying the contemporary conjuncture of "big tech" and capitalism. Zuboff, Varoufakis, and Durand argue that companies such as Google mark an end to capitalism as we know it. A different group of scholars—Fuchs, Harvey, Srnicek, Foster, McChesney, Lebowitz, Kangal, Reveley, and Huato—see Google as a capitalist firm, but have major disagreements about its role within capitalism. This problem may be addressed by assessing Google within Marx's typology of capital. Various forms of evidence are relevant in this regard: financial statements, legislative inquiries, Google's service pages, and supporting material. This evidence may be used to assess Google's revenue and model the forms of exchange that the company mediates in the digital advertising market. When assessed thus, Google is shown to be an example of merchant capital, a genus of capital in Marx's typology that mediates exchange in the sphere of circulation. To fully account for the case of Google, however, Marx's framework must be expanded to include media-marketing capital as a hybrid species of merchant capital.

Keywords

Google, advertising, Marx, capitalism, surplus value, political economy

Google exemplifies the contemporary conjuncture of "big tech" and capitalism. Amongst scholars, the nature of this conjuncture is interpreted in divergent ways. Zuboff, Varoufakis, and Durand see companies such as Google as an end to capitalism as we know it. While others—such as Fuchs, Harvey, Srnicek, Foster, McChesney, Lebowitz, Kangal, Reveley, and Huato—companies like Google as symptomatic of capitalism, exhibiting particular features of capitalism as a mode of production. The above scholars, with the exception of Zuboff, claim to be Marxist or operating within Marx's framework. Despite this shared orientation, there are major disagreements amongst them. I argue that the core, and often unstated, problem is in classifying big tech companies using Marx's typology of capital. Many of the above analyses fail to do this, missing the finer details of Marx's framework and thus starting out on the wrong foot. In Capital, Marx identifies two spheres of capital—the sphere of production and the sphere of circulation—and describes the types of capital that operate within these spheres—industrial capital and merchant capital, respectively. For Marx, industrial capital and merchant capital have different functions for capital and thus a different relationship to labor, profit, and value. Classifying big tech companies into one of these categories, therefore, has major implications for how we understand them and their relationship to capitalism.

I will review this scholarship on "big tech," Marx, and capitalism below. (I will hereafter refer to "big tech" companies as information and communication technology companies (ICTs)). I will then evaluate Marx's Capital to firmly establish his typology of capital. For the rest of the paper, I will investigate Google using multiple forms of evidence from service pages to financial statements. This will allow me to assess the company within Marx's typology of capital—and to develop this typology in response to my findings. Below, I find Google to be a case of merchant capital operating in the sphere of circulation. I then designate Google as a species of merchant capital not specified in Marx—media-marketing capital. Regarding the contemporary literature, this has implications for the relative power of capitals and the form that Google's capital accumulation assumes. I find that Google obtains its revenues from industrial capital for the realization of value. This makes Google an important, if not essential, firm for capitalist circulation and capitalism as a whole. It also indicates that Google has certain fundamental limitations and that it is not transforming capitalism into a new mode of production.

Google, Marx, and Capitalism

Several influential interpretations of ICTs and capitalism have argued that Google, and companies like it, have ended capitalism as a mode of production. Zuboff (2019), a non-Marxist scholar, claims that companies such as Google are indicative of surveillance

capitalism—marking an end to capitalism as we know it. Zuboff provides multiple, and contradictory, definitions of surveillance capitalism defining it as a set of business practices, a sector within capitalism, and a new type of capitalism altogether. In this latter connection Zuboff claims that surveillance capitalism marks a "new modernity" and a "new instrumentarian power" that imposes a system of "total certainty" (Zuboff 2019, v). Overall, her work fails to define capitalism as it existed before Google and how Google systematically changed it as a mode of production. Varoufakis, a self-described "libertarian Marxist" working within the "tradition of the classical economists," argues that technology firms have been developed into "cloud fiefs" by "cloud capital" (Varoufakis 2023, chap. 1, Appendix 1). Cloud capital has thus overturned capitalism and refashioned it into a new mode of production—"technofeudalism" (Varoufakis 2023). In my view, Varoufakis fails to substantiate the claim that big tech companies have vassalized the rest of the economy. Durand, working in the Marxist tradition, argues along similar lines (The New Institute n.d.). He claims that digital technologies have transformed capitalism into "a medieval-style social metabolism... technofeudalism" (Durand 2024). Despite outlining distinctions between three modes of production—slavery, feudalism, and capitalism—Durand fails to successfully show how contemporary economic phenomena fulfill, or even approximate, the conditions of feudalism that he outlines (Durand 2024, chap. 4). Durand makes several major mistakes in his analysis conflating monopoly capitalism with feudalism: he fails to discuss the business models of tech firms, misses the importance of advertising, and mischaracterizes elements of Marx's framework. For instance, Durand bases part of his argument on Marx's analysis of how various capitals appropriate surplus-value. But, Durand misses Marx's distinction between parasitical rentiers and necessary forms of merchant capital which leads him to the conclusion that firms which do not produce surplus-value are non-capitalist (Durand 2024, chap. 4). (As I discuss in the following section, Marx described capitalist firms that do not produce surplus-value.) In a notable article Morozov (2022) critiques Varoufakis, Durand, and other writers that advance the "technofeudal thesis," arguing that relating the digital economy to feudalism marks an inability of contemporary theory to understand the function of ICTs within capitalism. Morozov makes an appeal to scholars for returning to classical Marxist concepts and a clear analysis of the business models of ICTs.

I argue that Zuboff, Varoufakis, and Durand intuit that ICTs do not operate according to the logic of an industrial firm, the paradigmatic example of capitalism. They develop this intuition in the wrong direction, however, relating ICTs to non-capitalist economic forms such as surveillance capitalism and feudalism. An analysis based in a careful reading of Marx offers a different explanation: ICTs are not industrial firms, but they are still part of the capitalist mode of production. While the analysis of industrial

capital figures prominently in Marx's work, it is not the only type of capital that constitutes the capitalist mode of production. One of Marx's core arguments is that the transition to capitalism entailed the formal subordination of merchant capital to industrial capital. This raises the question: could ICTs be an example of merchant capital, operating as a support to industrial capital and capitalism as a whole? Marxist scholars that see ICTs as indicative of contemporary capitalism can be divided according to their position on this question. One group argues that ICTs operate as industrial capital, deploying labor productive of surplus-value in commodity production. This is the core position of Smythe, Fuchs, and the many scholars that follow their lead. A different group argues that ICTs do not operate as industrial capital, but act as merchant capital in the circulation of commodities—Foster, McChesney, Lebowitz, and the current author are part of this group. Other scholars such as Harvey and Srnicek occupy a more ambiguous position, but are more closely aligned with the latter scholars.

The blindspot paradigm, founded by Smythe in the 1970s and carried forward by Fuchs today, treats ICTs as a form of industrial capital that deploys labor productive of surplus-value in commodity production. I argue that this is a fundamental error which led Smythe to formulate three problematic hypotheses. In his 1977 article "Communications: Blindspot of Western Marxism," Smythe claims that authors within Western Marxism "have neglected the economic and political significance of mass communications systems" (Smythe 1977, 1). Smythe argues that historical materialists should identify the economic function that mass communications systems serve in reproducing capitalist relations of production. He then poses a question: "What is the commodity form of mass-produced, advertiser-supported communications under monopoly capitalism?" He answers by identifying the audience as the commodity form and asserts that "all non-sleeping time under capitalism is work time" (Smythe 1977, 7). Smythe writes that the audience commodity is produced by the owners of mass communications industries and by the family. He also writes that "in 'their' time which is sold to advertisers, workers (a) perform essential marketing functions for the producers of consumers' goods, and (b) work at the production and reproduction of labour power" (Smythe 1977, 3). Here Smythe suggests that audiences are actually performing work through their consumption of media. I refer to these positions of Smythe as the three theses of the blindspot paradigm: audience labor, the audience commodity, and ubiquitous work. I argue that these are based on a series of conflations. In his thesis of audience labor Smythe conflates consumption with production, through the audience commodity thesis he conflates selling commodities with producing commodities, and in the thesis of ubiquitous work he conflates mediation with the sale of labor power. These three theses are significant today because they have been carried forward to shape current debates on the role of ICTs within capitalism.

Fuchs is a contemporary Marxist scholar who has published extensively on the connection between surveillance, internet platforms, and capitalism. While his work is wide ranging, the core of his analyses rests on reproducing and extending the theses of the blindspot paradigm. Fuchs reproduces Smythe's thesis of audience labor arguing that when users engage with platforms they are, in fact, performing labor (Fuchs 2014, chap. 5). This labor may take the form of producing content, viewing content, or any other type of activity that produces data. Following Smythe, he argues that this labor produces surplus-value which, from the Marxist perspective, means it is deployed by industrial capital (Fuchs 2014, 131; Smythe 1977, 19). He also argues that this audience labor is exploited and unpaid—making it "infinitely exploited" (Fuchs 2014, 131). Fuchs extends the audience commodity thesis of Smythe arguing that user labor produces two forms of commodities which are sold to advertisers: a "data commodity," and an "internet prosumer commodity" (Fuchs 2014, 109–10). Notably, prosumer is a combination of the terms producer and consumer and refers to the productive labor that users perform when they are consuming different use-values from social media, platforms, or the internet. Finally, Fuchs reconstructs Smythe's thesis of ubiquitous work, considering users' time online as "work time" and all of life as part of a labor process he calls "the social factory" (Fuchs 2014, 109–10). I argue that the theses advanced by Fuchs and Smythe originate in their mistaken placement of ICTs within Marx's typology of capital.

My critique of Fuchs and the blindspot paradigm is consistent with the work of several Marxist scholars—Lebowitz, Foster, and McChesney. Lebowitz argues that advertiser supported mass communications are located within the sphere of circulation and not within the sphere of production. This means that ad space only takes on the audience commodity form as an appearance, being in actuality a necessary cost in the circulation of capital (Lebowitz 2009). Smythe is explicitly against this position: "the denial of the productivity of advertising is unnecessary and diversionary: a cul de sac derived from the pre-monopoly-capitalist stage of development, a dutiful but unsuccessful and inappropriate attempt at reconciliation with Capital" (Smythe 1977, 16). Lebowitz critiques the notion that audiences are commodities on the grounds that advertisers do not possess audiences and cannot sell them—two essential features of commodities (Lebowitz 2009, 20:223). The blindspot paradigm, he argues, departs from Marx's method by assuming the illusions of competition held by merchants in the sphere of circulation and by failing to assume the perspective of capital as a whole (Lebowitz 2009, 20:221–22). Overall, Lebowitz argues that advertising-supported mass media is organized by merchant capital, operates in the sphere of circulation, and performs the function of realizing value. Realizing value entails converting value from the commodity form into the money form—this is the opposite of Fuchs's and Smythe's claim that advertising is productive and that audiences produce surplus-value. Lebowitz emphasizes

the importance, and complexity, of mass media producing two use-values: a user-oriented use-value, and an advertisemented use-value writing that there is a "considerable basis to explore the contradictions and the interpenetration between the media as commodity-producer, and the media as moment within the sphere of circulation of capital" (Lebowitz 2009, 20:222–23).

Foster and McChesney come to a similar conclusion, discussing advertising-supported mass communications as part of "the sales effort" (Foster and McChesney 2014). This is a concept from Baran and Sweezy that refers to the economic importance of advertising in the post-WWII period for absorbing surplus and staving off economic crisis through selling commodities. Importantly, Baran and Sweezy state that the sales effort "is identical" to Marx's costs of circulation (Baran and Sweezy 1968, 114). Foster and McChesney extend the sales effort to Google, arguing that today the surveillance of Google is determined by the needs of surplus absorption within monopoly capitalism, making Google a necessary firm for staying off economic crisis (Foster and McChesney 2014).

Other scholars have critiqued the use of the blindspot paradigm to describe social media and the internet. Kangal (2017) argues that Fuchs departs from Marx's conception of labor, production, and value in his attempt to apply these to online economic activity (Kangal 2017, 129). Reveley similarly critiques Smythe's audience commodity and Fuchs's concept of social media's exploitation of users as a "category error" (Reveley 2013, 531). He correctly points out that Smythe's audience commodity is founded on a misunderstanding of Marx, arguing that audiences realize value rather than create it: "wage-earners' purchases of consumer goods realize surplus-value but do not create it" (Reveley 2013, 527). Reveley also argues that Fuchs has "sent the Marxist analysis of social media off course" (Reveley 2013, 526). He proposes that critical communication theorists should reread Capital "in order to situate social media within the capitalist circuit" (Reveley 2013, 532). Huato proposes a similar methodological point—rather than "casually discarding the old categories and imposing new ones" scholars should identify the theoretical continuities of general Marxist categories, reinterpreting them in our context (Huato 2024, 242).

It is worth considering Harvey and Srnicek positions on ICTs and capitalism. Harvey's concept of "accumulation by dispossession" is used by Zuboff to describe the appropriation of user data (Morozov 2022; Zuboff 2019, 69–67, 99). Despite this, it seems that Harvey does not assume Zuboff's positions. He does, however, make an interesting comment on Google, calling it "a massive merchant capitalist operation" (Harvey 2020, chap. 12). Smicek, operating within a Marxist framework, has been successful in shaping debates on ICTs using his concept "platform capitalism." For Smicek, platforms are digital infrastructures owned by the capitalist class which operate as "an extractive

apparatus for data" which function as raw material for production processes (Srnicek 2020). He frames Google as an advertising platform, one of five types of platforms that he defines. A key question for Smicek is whether online interaction is part of capitalist production. Smicek implies that a company is productive of value and thus useful for capitalism, or unproductive of value, "parasitical," and therefore not capitalist (Srnicek 2020). I argue that this is a false dichotomy that arises from a lack of engagement with Marx. Here Smicek is juggling with several issues in an unclear way: the production of value, the relative power of capitals, and the mode of production. Marx argues in multiple places across all three volumes of *Capital* that enterprises which circulate capital do not produce value but are essential to capitalism and are capitalist. I argue that the question should not be whether platforms are examples of capitalism or not. The most pressing questions is: what type of capital is deployed in online platforms?

Marx's Typology of Capital

To establish Marx's typology of capital I will review key passages from Capital and make three arguments pertaining to his typology. I will argue that the spheres of production and circulation are two spheres of capital determined functionally and in relation to the movement of capital as a whole. I will then argue that merchant capital and industrial capital are the genera that Marx uses to specify the functions of capital as a whole and that he further specifies these as species of capital. Finally, I will argue that commercial capital is a species of merchant capital that Marx uses to demonstrate that labor, exploitation, surplus-value, profit, etc. operate differently in the case of merchant capital than they do in the case of industrial capital.

The Spheres of Production and Circulation

The sphere of production and the sphere of circulation are two spheres of capital determined functionally and in relation to the movement of capital as a whole. In Capital, Marx represents the movement of capital as a whole using the following formula: M—C < $\frac{L}{MP}$ ... production ... C'—M' (Marx [1885] 1992, 2:2:132). This describes the combination of three circuits of value in the capitalist production process: the money circuit, the production circuit, and the commodity circuit (Marx [1885] 1992, vol. 2, vol. 2, chap. 4). Money is used to buy commodities as factors of the labor process taking the form of labor (L) and means of production (MP). These are then put into production (production) to produce commodities embodying, or containing, surplus-value (C') which are then sold for an augmented sum of money (M') (Marx [1885] 1992, 2:2:111–18). This is indicative of capitalism as a mode of production that produces economic surplus through exploiting labor in commodity production. Under capitalism,

this economic surplus takes the form of surplus-value (Marx [1867] 1990, 1:1:273–79). It is the relationship that economic activity has with the production and circulation of surplus-value that Marx classifies in his distinction between the spheres of production and circulation.

In the above formula the production sphere is represented by "production" where value is added through labor acting on the means of production. In this sphere, labor conveys value from the means of production to the final product but it is from labor that value is added to the production process and embodied in commodities (Marx [1867] 1990, vol. 1, vol. 1, chaps. 8, 9). This value is the origin of economic surplus under capitalism (Marx [1867] 1990, 1:1:325, 978). Under capitalist relations of production there is an "extortion" of surplus-value from labor by industrial capital, where industrial capital receives "an extra quantity of unpaid labor, surplus-value" (Marx [1867] 1990, 1:1:325, 1009). This marks the private appropriation of economic surplus produced by labor (Marx [1867] 1990, 1:1:709).

The sphere of circulation includes two stages, one preceding the production process and one following it (Marx [1885] 1992, vol. 2, vol. 2, chap. 4). In the stage before the production process the factors of the labor process are bought using the money invested in production. Marx represents this as M—C < $\frac{L}{MP}$. In the second stage the commodities that have been produced are sold converting the value contained within them into the form of money. This includes the value conveyed from the means of production by labor power and the value added by labor power. The capitalist thus converts the surplus-value contained in the commodity form into money—realizing a profit on his original investment. Marx represents this as C'—M'. The same capitalists that organize labor in the production process may themselves operate in the sphere of circulation. Marx states that these activities do not produce value but realize value (Marx [1885] 1992, 2:2:207–11). As the division of labor advances, these activities are further specialized, becoming the sole function of agents of circulation—these agents, likewise, do not produce value but realize value.

The distinction between the spheres of production and circulation is essential for assessing economic phenomena within Marx's framework. While these spheres bear superficial similarities, Marx argued that in terms of their function and their relationship to capitalism as a whole they are fundamentally different. The function of the sphere of production is the organization of a labor process and a valorization process for the production of economic surplus. This product assumes the commodity form. The function of the sphere of circulation is twofold: (1) to transform capital in the form of money into the means of production for the production process, and (2) to transform the commodities from the production process into money. In the latter case it transforms

the economic surplus embodied in commodities into economic surplus assuming the money form.

Industrial Capital and Merchant Capital

Merchant capital and industrial capital are the genera that Marx uses to specify the functions of capital as a whole—he further develops these genera as species. In the first volume of Capital, Marx is almost exclusively occupied with identifying the origins, forms, and laws that govern industrial capital. In Volume II and Volume III, he introduces complexity to his overall picture of capitalism through developing merchant capital in various presentations. These include a chapter in Volume II on "The Costs of Circulation," and chapters in Volume III such as "Commercial Capital," "Commercial Profit," and "Historical Material on Merchant's Capital."

Marx differentiates his two genera of capital according to their activities in the spheres of production and circulation. Industrial capital is the capital that is deployed in the sphere of production, and merchant capital is the capital that is deployed in the sphere of circulation. The essence of industrial capital, which (with the exception of transportation) is always deployed in the sphere of production, is the production of commodities and the "extortion" of surplus-value from labor (Marx [1867] 1990, 1:1:324–25). The essence of merchant capital, which is always deployed in the sphere of circulation, is the mediation of exchange (Marx [1894] 1991, 3:3:441 f.45). This entails diverse activities such as exchanging money for commodities which will act as factors of the labor process, selling produced commodities to recoup the investment made in production plus profits, or selling financial services to industrial capital, etc. (Marx [1894] 1991, vol. 3, vol. 3, chap. 20). Merchant capital and the labor that it deploys are not productive of surplus-value but are financed by surplus-value transferred to it from industrial capital (Marx [1894] 1991, 3:3:407, 432). From the perspective of industrial capital, merchant capital is necessary to realize profits through circulation activities, but payment for these services is a loss of potential profits (Marx [1894] 1991, 3:3:416; [1885] 1992, 2:2:208–9). It is, therefore, only economical for industrial capital to employ merchant capital if it can reduce the costs of circulation that industrial capital would otherwise have to pay.

Marx further specifies these genera to the level of species. Unlike the genera, these species of capital are not exhaustive—but they bear the form of the genera that they belong to. Marx lists the most prominent species of industrial capital as his examples: mining, agriculture, stock raising, manufacture, and transport. He also lists the two most prominent species of merchant capital: commercial capital, and money-dealing capital (Marx [1894] 1991, 3:3:440). The essence of commercial capital is buying and selling. The commercial capitalist specializes in buying commodities in order to sell

them, performing a necessary function for capital as a whole. The essence of money-dealing capital is trading in money. This is done to support the production process and marks a specialization of managing the stock of money necessary for capitalist production (Marx [1894] 1991, 3:3:431–32). Both species are subordinate to industrial capital and support it, but these activities are costs deducted from the surplus that industrial capital could otherwise appropriate. This makes them a necessary evil.

It is important to consider Marx's category of transportation. For Marx, transportation is an extension of industrial capital into the sphere of circulation. The essence of transportation is the movement of people and commodities, taking an actual course through space. In the case of commodities this occurs in the sphere of circulation by industrial capital. It is, therefore, a secondary production process that produces economic surplus.[1] The key point is that Marx specifies transportation to entail commodities or people taking a course through terrestrial space. In Figure 1, I represent Marx's typology of capital by genera and species, noting the functions specific to each species.

Commercial Capital

Commercial capital is a species of merchant capital that Marx uses to demonstrate that labor, exploitation, surplus-value, profit, etc. in the case of merchant capital operate differently than they do in the case of industrial capital. From the perspective of the commercial capitalist, who purchases commodities for resale, their activity generates a profit. But from the perspective of capital as a whole, the profit of the commercial capitalist is actually a loss and marks a cost in the transformation of commodities into money. This disjuncture Marx calls "the illusions of competition" which his analysis aims to cut through (Marx [1885] 1992, 2:2:209). The agents of circulation, therefore, possess a pernicious illusion that their economic activity is not fundamentally different from that of industrial capital.

In Capital, Marx provides a detailed look at commercial capital as a species of merchant capital to show just how different the operations of merchant capital are from industrial capital (Marx [1894] 1991, 3:3:441). The commercial capitalist buys commodities from producers at a price which is below the real value of those commodities. They then sell these commodities at their real value and thereby profits (Marx [1894] 1991, 3:3:397). Commercial capital takes over the function of selling from industrial capital, reducing the overall costs of selling, thereby rationalizing social reproduction (Marx [1894] 1991, 3:3:388–89). To accomplish this, commercial capital deploys the means of production and labor which function as constant capital and variable capital (Marx [1894] 1991, 3:3:402). It obtains profits since it makes more money than it deploys in purchasing these commodities, but this profit does not come from the

labor deployed by commercial capital (Marx [1894] 1991, 3:3:406). Commercial capital's profit is obtained from surplus-value redistributed to it from industrial capital (Marx [1894] 1991, 3:3:407). In other words, commercial capital does not create economic surplus, but performs a necessary function of converting economic surplus from one form to another—financing itself out of a portion of this surplus. From the perspective of capital as a whole, commercial capital's functions are costs and mark a loss of overall surplus. In short, the essence of commercial capital is the buying and selling of commodities in the mediation of exchange.

After reviewing Marx's typology of capital, and how integral it is to his theory of capitalist production, we may better understand the misapplications in the literature. To apply Marx's framework to a case study of Google we must distinguish: the sphere of capital that Google operates within, the type of capital it embodies as genus, and the type of capital it embodies as species.

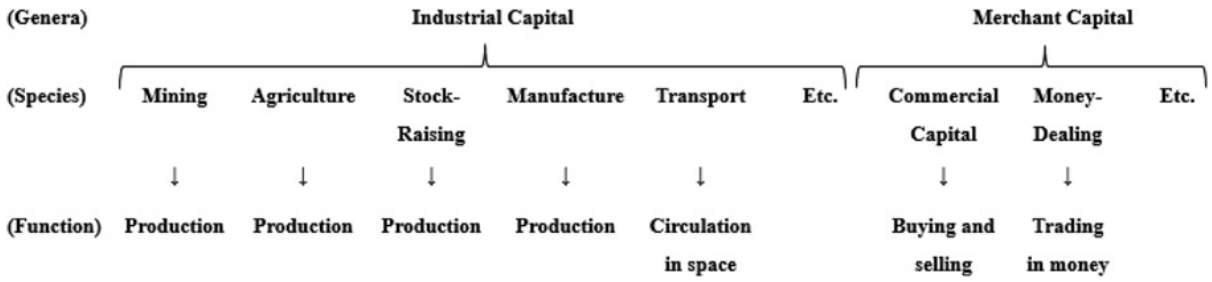

Figure 1: *Typology of capital.*

Google and Merchant Capital

Considering the company as a whole, Google deploys multiple forms of capital making it a heterogeneous case. Nevertheless, its business activities are dominated by merchant capital. Here I investigate Google's digital advertising using financial reports, company service pages, and government inquiries. First, I argue that Google's financial statements show its business to be predominantly composed of merchant capital. Second, I argue that Google's financial statements and service pages show its different lines of business to be representative of industrial and merchant capital, making it a heterogeneous case.

Google as Merchant Capital

Google's business is predominantly composed of merchant capital. Google must submit an annual financial report to the Security and Exchange Commission. This report, the 10-K, is the best publicly available document showing Google's revenue. Alphabet's 2022 10-K was published in 2023 and shows the relative proportion of Google's revenue by business type (Alphabet Inc. 2023). In Table 1, I present the revenue categories that

Google reports. Of these categories Google Advertising comprises the largest share of its revenue, approximately 79 percent.

How do we categorize Google's advertising using Marx's framework? Advertising works on behalf of the seller of commodities to find a buyer. If advertising is taken over by a third party, then this third party facilitates the exchange between the buyer and the seller. Functionally, this is the mediation of exchange, making it an instance of merchant capital. If we are to fit this activity into either "buying and selling" or "trading in money"—the essential characteristics of commercial capital and money-dealing capital—we would have to choose the former, even though the advertiser does not buy goods for resale as the commercial capitalist does. This suggests that advertising is best categorized as a subset of commercial capital or an independent, yet related, species of merchant capital. Considering advertising from the perspective of capital as a whole, we must place this activity within the sphere of circulation as a mediation of exchange occurring either before or after the production process. In this connection, advertising may mediate a number of different exchanges between producers, commercial capitalists, and consumers.

Given the above, I categorize Google's advertising line of business as merchant capital operating in the sphere of circulation. In terms of species, it is either a specialized form of commercial capital or an independent and related species. In a following section I will model the exchanges that Google performs in its advertising line of business to evaluate it as commercial capital.

Revenue Category	Revenue	% of Total Revenue
Google search & other	$162,450	57
YouTube ads	29,243	10
Google network	32,780	12
Google advertising	224,473	79
Google other	29,055	10
Google services total	253,528	90
Google cloud	26,280	9
Other bets	1,068	<1
Hedging gains (losses)	1,960	<1
Total revenues	$282,836	100

Table 1: *Yearly Revenues of Alphabet in 2022 by Revenue Category Represented in Millions of Dollars and as Percent of Total Revenue. Based on Alphabet's 2022 10-K Form (Alphabet Inc. 2023, 32).*

Google as a Heterogenous Case

Categorizing Google's lines of business by genera of capital shows that Google is representative of both industrial and merchant capital, making it a heterogeneous case. Google's advertising category is a comprehensive representation of the revenue it obtains from advertising. It is composed of subcategories that report its revenues according to advertising networks. These advertising networks include Google Search & other, YouTube ads, and Google Network (Alphabet Inc. 2023, 28). The networks "Google Search & other" and "YouTube ads" consists of the advertisements that Google places on its own properties such as Google Play and YouTube. This revenue is not included in Google Other, which reports revenue obtained through app sales and subscriptions from these same services—Google Play and YouTube.

Under Google's revenue category "Google Other," Google reports revenue from a group of businesses: Google Play, "hardware," YouTube Premium, and YouTube TV. The Google Play business category generates revenue through the sales of apps and in-app purchases (Alphabet Inc. 2023, 28). I argue that Google Play, framed thusly, is an example of industrial capital. It produces commodities/services for sale suggesting that it is industrial capital. Furthermore, I argue that these commodities/services are consumed for their use-values and not used in the mediation of exchange. This makes Google Play an unspecified form of industrial capital, which I will provisionally term industrial media.

Google Hardware includes Google businesses that primarily sell hardware such as Fitbit, Google Nest, and Pixel (Alphabet Inc. 2023, 28). I argue that these three businesses are examples of industrial capital. They generate their revenue through commodity sales to users who are the consumers of those use-values. Furthermore, these commodities are not used in mediating exchange. These products consist of hardware accompanied by media services, making them a combination of manufacturing and industrial media.

YouTube non-advertising generates revenue through YouTube Premium subscriptions, YouTube TV and "other products and services" (Alphabet Inc. 2023, 28). As with the other businesses in this category I argue that this is an example of industrial capital, likely industrial media. Here Google is selling products and services which are not used in the mediation of exchange. In sum, I argue that all of the businesses grouped under "Google Other"—Google Play, "hardware," YouTube Premium, and YouTube TV—are forms of industrial capital producing commodities and/or services for sale that do not mediate exchange.

Google's third major revenue category, "Google Cloud," generates revenue through "fees for infrastructure, platform, and other services" (Alphabet Inc. 2023, 29). It includes revenue generated from Google Workspace through fees for cloud-based communication and collaboration tools including Gmail, Docs, Drive, Calendar and

Meet, and other (Alphabet Inc. 2023, 29). I consider these activities to constitute industrial capital since a commodity/service is being sold for their use-values and not in the mediation of exchange. Again, these may be classified as industrial media. (It should be noted that I am excluding Google's last revenue categories from this analysis, the categories Other Bets and Hedging Gains (Losses).)

In Table 2 I represent my categorization of Google lines of business according to Marx's typology. The table shows Google to be split between merchant capital and industrial capital making it a heterogeneous case. (Marx obliquely references heterogeneous cases but brackets them from his analysis (Marx [1894] 1991, 3:3:395)). It should be noted that this table may present an illusory division between the different businesses that Google has developed. Google has been characterized as a multisided business model, meaning that it generates its revenues through advertising in order to subsidize other elements of its business (Osterwalder, Pigneur, and Smith 2010, chap. 2). In terms of revenue this is called cross-subsidization, but there is no reason to believe that Google does not also cross-subsidize the sides of business through data sharing. This would entail taking data from its minor, and possibly unprofitable, businesses to inform its advertising line of business. In the literature Google is considered to have a hidden business model, meaning that it is secretive about how its services are financed and how it collects user data (Pereira 2020). From an outsider's perspective, therefore, aspects of Google's business are unclear marking a limitation to this analysis.

Revenue Category	Business Category	Genera of Capital	Revenue (in m)	%
Google advertising	Google Search & other YouTube ads Google network	Merchant capital	$224,473	79
Google other	Google Play Hardware YouTube Premium YouTube TV	Industrial capital	$29,055	10
Google cloud	Google cloud	Industrial capital	$26,280	9
Other bets	Other bets	Not classified	$1,068	<1
Hedging gains (losses)	Hedging gains (losses)	Not classified	$1,960	<1

Table 2: *Google's Revenue Categories According to Business Categories, Genera of Capital, Yearly Revenue (in Millions), and Percent of Total Yearly Revenue. Based on Alphabet's 2022 10-K Form.*

Google's Digital Advertising

Google's digital advertising operates within three segments of the digital advertising market as merchant capital. In this section I continue my analysis of Google using antitrust investigations and Google's service pages. I first establish market definitions that delimit the types of exchanges that Google participates within the broader digital advertising market. Then, I analyze Google in three market segments of the digital advertising market: search, owned and operated display, and open display. For each of these analyses I develop exchange models that represent how Google transacts within these market segments. I use these models as a basis for classifying Google's advertising as a genus and species of capital. If Google's advertising is an example of merchant capital, then these models should show that Google is mediating the exchange between producers and consumers—thereby realizing value. If Google's advertising is operating as commercial capital, a subspecies of merchant capital, then the models should show Google taking commodities into its possession before reselling them to another party. Finally, if Google's advertising is operating as money-dealing capital, a subspecies of merchant capital, then they should show Google operating as a bank does managing capital in the money form. If the models do not show Google assuming one of these forms, then they will serve as a basis for positioning a new species of merchant capital.

Three Segments of the Digital Advertising Market

I use market definitions from antitrust investigations to delimit three segments of the digital advertising market for analysis: search, owned and operated display, and open display. Market definition is a key part of antitrust investigations. In an antitrust analysis a market is "a collection of products and geographic locations, delineated as part of an inquiry aimed at making inferences about market power and anticompetitive effect" (Baker 2007, 130). It forms the preliminary step for an antitrust analysis which then uses other methods to make inferences about the number of firms, their size distribution, or anticompetitive effects (Baker 2007, 130). I use the market definition from two antitrust investigations to delineate the types of economic activity that I model. The UK government's Competition and Market Authority's "Online Platforms and Digital Advertising Market Study" report defined three digital advertising markets in its analysis: search, display, and classified (Competition and Markets Authority 2020b, 58–56). These markets are separated by the specific types of ads sold and cover the geographical area of the United Kingdom. The U.S. Congress's report "Investigation of Competition in Digital Markets," includes the market categories as search and display advertising covering the geographic areas of the United States. Search advertising refers to advertising on search engines where display advertising refers to advertising on webpages and apps across the internet (House Judiciary Committee 2020). Classified advertising

consists of product and service listings on specialized websites (Competition and Markets Authority 2020b, 60–66). For this analysis I will exclude the classified category because it is of marginal significance compared to the other categories. I will also disregard the geographical distinctions made in the above market definitions since in this case they do not affect the form of exchange being modeled. The first market segment that I will consider is search advertising which places advertisements on search and navigation pages across the internet. The second and third market segments I will consider are derived from splitting the display category discussed above. The purpose for this division is that within the display advertising market there are two forms of exchange which are very different: owned and operated display, and open display. In owned and operated display advertisers buy ad space on platforms through in-house ad services. In open display, advertisers buy ad space through platforms that use real-time bidding. So, the second and third market segments in my analysis will consist of owned and operated display and open display, respectively.

Google in the Search Advertising Market

In the search advertising market Google operates as merchant capital. In search advertising, a search provider such as a traditional search engine or a navigation service sells ad space on its results page (Competition and Markets Authority 2020b, 213; House Judiciary Committee 2020, 129). This ad space is targeted, meaning that when users visit a page data about their visit determines the content of the ads displayed. This can be contextual data such as keywords and location or personal data about the user. Advertisers buy this targeted ad space and pay for it on a per click basis—for every click that their ad receives from users, they must pay the provider at an agreed upon rate (Competition and Markets Authority 2020b, 222). Advertisers typically purchase this ad space through an online sales interface provided by the search provider (Competition and Markets Authority 2020b, 59). Search engines sell their ads through ad auctions using second price auctions and ad relevance to determine the outcome of bids (Competition and Markets Authority 2020b, 222–23).

In Figure 2, I represent Google's role in the search market. On the right side of the diagram small and large advertisers purchase ad space and marketing services through Google's advertising facing services—Google Ads and Google Marketing Platform, respectively (Google, n.d.g, n.d.f). This ad space is then assigned through a real-time bidding process appearing on ad properties in the Google Search Network (Google, n.d.g; n.d.b; n.d.k, 7–1). Users encounter these ads as part of the user-oriented services offered on these properties such as search, navigation, or shopping. I represent this as an exchange where users receive user-oriented services in exchange for Google recording their consumption in data and serving them advertisements.

In this exchange model we can see that money is entering from the advertiser side of the exchange. Advertisers are, however, working on behalf of producers to sell commodities/services. These are sold indirectly, meaning that the commodities do not take a course through Google's possession. It is notable that Google is mediating an exchange of commodities between producers and users—the essential feature of merchant capital—but since the commodities do not take a course through Google's possession, the company does not fit as an example of commercial capital. In the following section, I will further specify this type of activity as a new species of merchant capital.

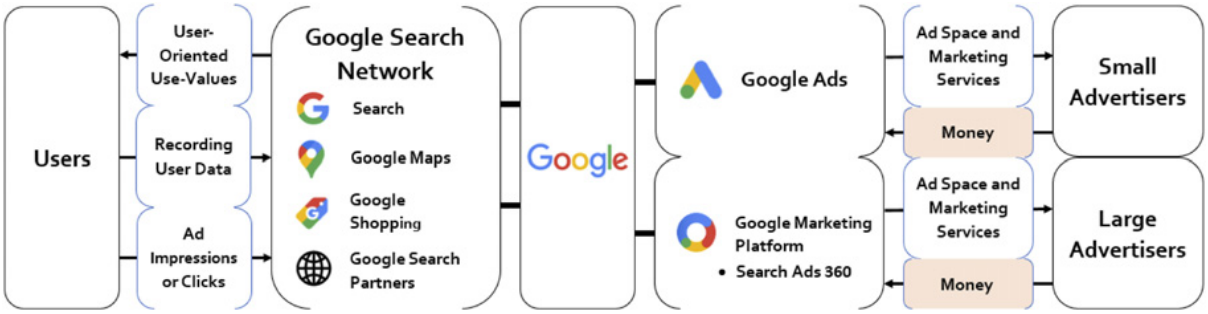

Figure 2: *Exchange model for Google in the search advertising market.*

Google in the Owned and Operated Display Market

In the owned and operated display market Google operates as merchant capital. In the display advertising market, two distinctions are generally made, that between owned and operated display and open display (Competition and Markets Authority 2020b, 6; House Judiciary Committee 2020, 128). In both forms of display advertising user data plays a more important role than in search advertising. In this ecosystem, data are compiled into user profiles which are then segmented into audiences as a basis for serving targeted ads (Competition and Markets Authority 2020b, 243). In owned and operated display, also known as "walled garden" advertising, social media play a major role in attracting user attention, getting user data, and creating targetable ad space (Competition and Markets Authority 2020b, 242). Platforms sell this ad space to advertisers using their own proprietary interfaces such as Facebook Ads Manager, Snapchat Ads Manager, and YouTube Ads. (Competition and Markets Authority 2020b, 60, 242; House Judiciary Committee 2020, 129). Typically, this form of advertising is sold using real-time bidding or through direct deals, with most inventory being sold using programmatic technology (Competition and Markets Authority 2020b, 243). Real-time bidding is a type of programmatic trading in which ad space is auctioned in real time to advertisers (Competition and Markets Authority 2020b, 243).

In Figure 3, I represent Google's role in the owned and operated display market. Google sells ad space on several of its services as part of the owned and operated display

market. Google categorizes this ad space as part of the Google Display Network which includes ad space located on YouTube, Gmail, Google Play, Blogger, etc. (Within the Google Display network Google also places ad space that it has purchased from publishers in the open display market, this ad space is not part of the owned and operated display market and will be considered in the following section.) Small advertisers access this ad space through Google Ads, where they purchase display ads, video ads, and app ads (Google, n.d.h). Large advertisers access this ad space through Display and Video 360 which is part of the Google Marketing Platform (Google, n.d.d). These two services offer specific campaign types, broad access to Google's ad properties, and methods for a more refined selection of ad inventory. Display ads are sold through an automatic auction process and may be sold according to different metrics including cost-per-click, or cost-per-conversion (Google, n.d.i). Targeting is managed through manual or automatic audience segment selection (Google, n.d.i). Google also offers verification and conversion tracking services with its display advertising where advertisers can monitor campaign performance.

The owned and operated exchange model bears similarities to the one developed for Google for the search advertising market. The biggest difference between the two is that large advertisers access the Google Display ad network through Google's Display & Video 360 service. Another difference is that ads are served on a different ad network and accompanied by different user-oriented services. In Figure 3 we can see that advertisers exchange money for ad space and marketing services. In turn, Google is provides users use-values in exchange for recording user data and presenting users with ads. As in Figure 2, money is entering into the exchange through advertisers who are being paid by the owners of the production process. In this case, Google is mediating the exchange between the producers of commodities and the consumers of commodities. This is the essential feature of merchant capital. Again, these commodities are not taking a course through Google's possession meaning that it is not operating as commercial capital does. In the next section, I will further specify this type of activity as a new species of merchant capital.

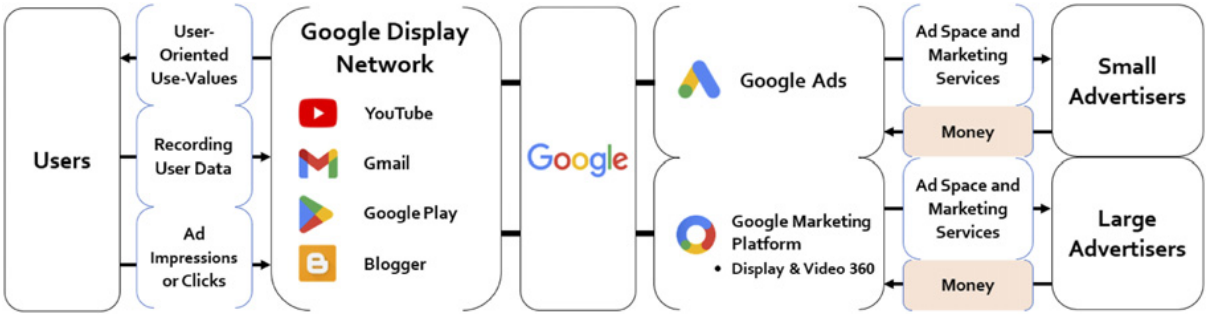

Figure 3: *Exchange model for Google in the owned and operated display market.*

Google in the Open Display Market

In the open display market Google operates as merchant capital. In this market, publishers use content or apps to attract users to their websites where they are presented with ads (Competition and Markets Authority 2020b, 262). (The open display market is also referred to as "advertising intermediation" and the "ad tech stack.") Here publishers sell their ad space to advertisers in an open market competing with other publishers. Since they are offering ad space for sale, publishers are considered to be on the supply side of the market. They are monetizing their services through ads, offering content or services to users for little to no charge. Advertisers, in contrast, are considered to be on the demand side since they are purchasing ad space in order to reach consumers and make sales. Between the publishers and advertisers, a series of intermediaries exist which make the sale of ad space possible.

To illustrate how this market works, I will consider a typical transaction. When a user opens a publisher's webpage, an automated process begins where multiple Supply Side Platforms (SSPs) receive ad requests for the advertising space on the website. The SSPs manage a real-time bidding process where they collect bids from another type of intermediary, Demand Side Platforms (DSPs).[2] DSPs evaluate the ad space in terms of the parameters set out by their various advertising customers, automatically generating bids which are sent back to the SSPs. The SSPs rank the bids according to price and priority sending them to the publisher. (SSPs are, in some cases, used to organize direct deals between advertisers and publishers.) The publisher receives the bids through a publisher ad server making the final decision on which ad to serve in the ad space (Competition and Markets Authority 2020a, M5–6). Finally, the ad is delivered on the page (Competition and Markets Authority 2020a, M5–6).

Google has integrated the entire advertising intermediation value chain, where it controls the largest shares of supply amongst providers. This means that in some exchanges the functions and roles that are described in the above example are assumed by different Google services rather than independent agents. In Figure 4, I present an exchange model that depicts exchanges occurring wholly within the Google-integrated open display market. On the sell side, Google offers services to publishers through which they create and sell ad space alongside their content. On the buy side, Google offers services for advertisers to access the open display market. Some of these transactions, from the selling of ad space to the buying of ad space, take place wholly between Google-owned businesses. Other transactions, however, begin on a Google platform (on either the sell side or buy side) and subsequently access the open market via other services.

Along the top line of Figure 4, I represent the roles in the ad tech stack that each agent and service represents. On the bottom line I label the sell side and buy side of the open display market divided by a dotted line. The horizontal lines dividing Google's

services indicate the corresponding advertisers on the buy side and publishers on the sell side. Instead of representing individual exchanges between the two types of advertisers and three types of publishers with Google's services, these have been simplified into single exchanges.

On the buy side, Google brings advertisers into the market to buy ad space. Small advertisers can access the open display market through Google Ads. Google ads offers display campaigns that place ads across websites that are a part of the Google Display Network (Google, n.d.a). The Google Ads service allows advertisers to upload ad creative and manage advertiser bids, audience targeting, ad verification, and conversions thus combining the functions of an advertiser ad server and a DSP. Large advertisers access the open display market via two services in the Google Marketing Platform, Display & Video 360 and Campaign Manager. Campaign Manager operates as an advertiser ad server allowing advertisers to manage ad creative across multiple channels and to measure ad performance (Google, n.d.c). It integrates with Display & Video 360 which operates as a DSP through audience targeting, ad inventory selection, and bidding on third party exchanges (Google, n.d.d).

On the sell side, Google brings publishers into the market to sell ad space on their websites. Google has services tailored to specific types of publishers. Through AdSense Google offers small publishers a means to monetize their websites through selling ad space. AdSense assumes the roles of a publisher ad server and an SSP through selling ad space in a bidding process, placing ads on publisher's websites, and measuring ad performance. Through Google Ad Manager large publishers and media companies may sell ad space, manage ad delivery on their websites, set direct deals with advertisers thus integrating the roles of a publisher ad server and a SSP (Google, n.d.j). Through AdMob mobile app publishers are offered the ability to monetize their apps through selling ad space through bidding, and, like the other publisher oriented services, it performs the functions of a publisher ad server and a SSP (Google, n.d.e). Users are given user-oriented use-values by publishers in exchange for being recorded in data and being served ads. User activity is recorded by publishers and Google via web tracking that is used for ad targeting, ad verification, and conversion tracking.

For sales that take place wholly within Google's ecosystem, these sell-side services connect to Google's integrations on the buy side of the open display market, namely, Google Ads and Google Marketing Platform. Google categorizes the ad space that it buys from publishers as part of the Google Display Network. From the perspective of the market as a whole, the Google Display Network is just one ad network that can be accessed through the ad tech stack. For Google, the Google Display Network consists of the ad properties it sells in its owned and operated display exchanges and in its open display exchanges. This network is also a revenue category that Google uses in its

financial reporting. For the types of exchanges being considered here, ads are only displayed on publisher's sites that work with Google through its sell-side services and not on the Google properties considered in the previous exchange model.

Like the other models, we can see that in the open display market Google is selling ad space in the mediation of exchange—the essential feature of merchant capital. In this case, it is selling ad space on behalf of publishers, through a series of intermediary steps to advertisers, or vice versa. Advertisers are selling ads on behalf of producers who must sell their products to consumers. As in the other cases, the commodities that are sold by the producers to the consumers do not take a course through Google's possession meaning that this exchange is not an example of commercial capital.

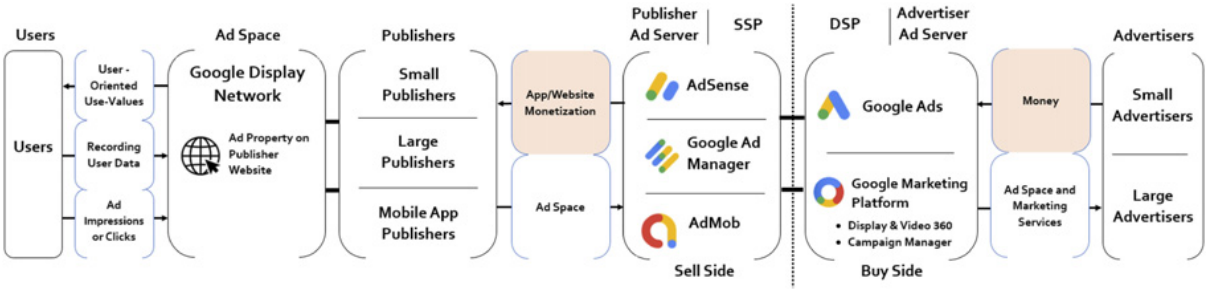

Figure 4: *Exchange model for Google in the open display market.*

In the above analysis, I develop three exchange models of Google's operations in the digital advertising market. In all three models Google is shown to operate as merchant capital mediating an exchange between producers and consumers. The commodities sold in these exchanges do not take a course through Google's possession meaning that Google is not operating as commercial capital. This suggests that it is operating as a yet unspecified form of merchant capital. Below, I will weigh the above evidence with Marx's typology of capital and designate a new species of merchant capital that accounts for Google's role in the digital advertising market.

Google as Media-Marketing Capital

In the digital advertising market Google operates as media-marketing capital, a hybrid species of merchant capital which I am designating here. In the above sections, I established that Google is a heterogeneous case consisting primarily of merchant capital. It executes three distinct forms of exchange in the digital advertising market each characteristic of merchant capital. But a major question remains unaddressed: in these exchanges what species of merchant capital does Google represent? Below, I answer this question designating media-marketing capital as a hybrid species of merchant capital composed of two distinct species: commercial media capital and marketing capital. I

then outline how Google assumes the essential functions of media-marketing capital in its operations in the digital advertising market.

Media-Marketing Capital as Commercial Media Capital and Marketing Capital

Media-marketing capital is a hybrid species of merchant capital composed of two distinct species: commercial media capital and marketing capital. The essential function of commercial media capital is the production of ad space in the mediation of exchange. To perform this function commercial media capital (1) uses media to cultivate audiences, (2) surveils users and records user activity in data, and (3) creates an ad delivery system. These operations are combined to produce a targetable ad space for sale in the mediation of exchange. Marketing capital works on behalf of the sellers of commodities in performing a sale. Its essential function is the matching of buyers and sellers. To accomplish this, marketing capital must (1) produce ad copy, (2) organize ad delivery, and (3) find buyers. It uses surveillance as a support for these operations. In Figure 5, I represent these species as additions to Marx's typology of capital.

Google as Media-Marketing Capital

In the digital advertising market Google matches buyers and sellers through its production of ad space, thereby acting as media-marketing capital. Google accomplishes the first operation of commercial media capital (using media to cultivate audiences) through producing free user-oriented use-values in its services such as search, navigation, and email. In some cases, it will perform this first operation through monetizing publisher's content, effectively hiring out media production to third-parties. Google accomplishes the second operation of commercial media capital (surveilling users and recording user activity in data) through user tracking technology, developing user profiles, and creating audience segments from user profiles. Finally, Google performs the third operation of commercial media capital (delivering ads) through its advanced ad delivery systems by which advertisers can reach audiences with targeted ads in real time. Google also functions as marketing capital, working on behalf of small business, large businesses, and marketing agencies. Google accomplishes the first operation of marketing capital (producing ad copy) through its interface where customers upload their own ad copy to ad servers or by producing ad copy on behalf of customers. Google accomplishes the second operation of marketing capital (organizing ad delivery) by developing its digital advertising services within the digital advertising market. Finally, Google accomplishes the third operation (finding buyers) through its surveillance system of ad targeting, ad verification, and conversion tracking.

I argue that Google has assumed the essential functions of commercial media capital and marketing capital combining their components together through its ecosystem of services. I have also expanded Marx's typology of capital positing commercial media capital and marketing capital as species and media-marketing capital as a hybrid species of merchant capital. From the perspective of capital as a whole, Google takes over the operations of commercial media capital and marketing capital producing ad space and matching buyers and sellers in the mediation of exchange.

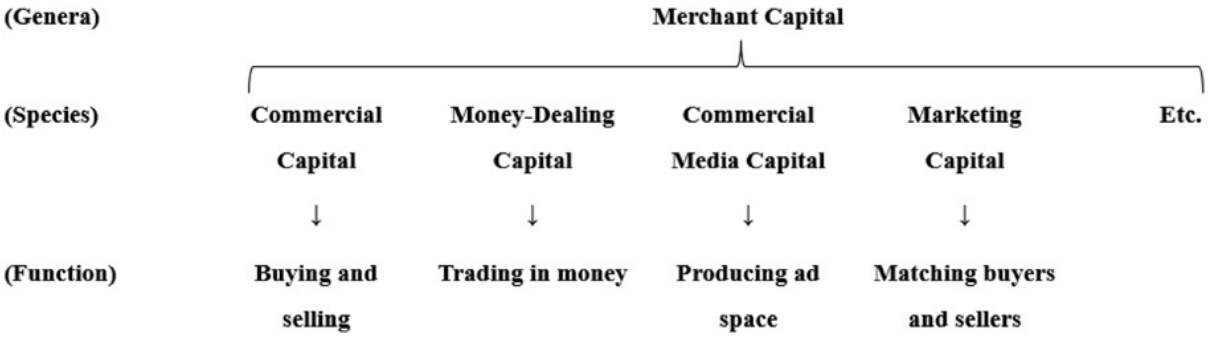

Figure 5: *Merchant capital with two new species of capital added.*

Conclusion

I began this article with a review of the scholarly literature relating Google and ICTs to contemporary capitalism. Zuboff, Varoufakis, and Durand argue that ICTs represent a dramatic break from the capitalist mode of production—marking either a new form of capitalism or a reconstruction of feudalism. These arguments are based on a valid insight that many ICTs do not operate as industrial firms. They fail, however, because they equate industrial firms with the capitalist mode of production itself. They do not recognize that Marx's framework identifies multiple types of capital operating within the capitalist mode of production—a firm can be capitalist without being industrial capital. A different set of scholars—Fuchs, Harvey, Srnicek, Foster, McChesney, Lebowitz, Kangal, Reveley, and Huato—are divided on the question of what type of capital ICTs represent. Fuchs, operating within the blindspot paradigm, argues that ICTs are types of industrial capital for which audiences labor to produce audience commodities. This, in turn, produces surplus-value for ICTs and transforms all of life into work. Lebowitz, Foster, McChesney, Kangal, and Reveley argue that this is the wrong approach and that it amounts to a conflation of circulation for production. To address this issue I have followed the methodological principle articulated by Huato (2024, 242) that scholars should identify the theoretical continuities of Marxist categories and reinterpret them in our context.

Through revisiting Marx's categories and analyzing Google's lines of business I found that Google, as a type of capital, is a heterogenous case. Its business activities consist of lines of business that may be variously categorized as industrial capital and merchant capital. Nevertheless, the majority of its revenues come from advertising which is an example of merchant capital. I further analyzed Google's advertising line of business modeling its operations in three sectors of the digital advertising market. I found Google to be operating in this market as a yet unspecified species of merchant capital. I then posited this as media-marketing capital—an expansion of Marx's typology of capital. Media-marketing capital has two essential functions: it produces ad space and matches buyers and sellers. It also performs six operations. It (1) uses media to cultivate audiences, (2) surveils users and records user activity in data, (3) creates an ad delivery system, (4) produces ad copy, (5) organizes ad delivery, and (6) finds buyers.

This analysis is an attempt to re-orient Marxist analyses of ICTs to Marx's framework. Placing Google within Marx's typology of capital suggests that Google is structurally limited in its growth and in its economic power. While Google may value its particular interests over the general interests of society, it is structurally subordinated to the requirements of capitalist accumulation. This means that Google is neither a new mode of production nor a different form of capitalism. Google represents a revolutionary technological and social development of the sphere of circulation where society is further mediated by capital to reduce the costs of circulation. Far from marking an end to capitalism, Google marks an intensification of capital's social mediation.

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References

Alphabet Inc. 2023. "Alphabet Inc. Form 10-K 2022." https://www.sec.gov/ix?doc=/Archives/edgar/data/0001652044/000165204423000016/goog-20221231.htm.

Baker, Jonathan B. 2007. "Market Definition: An Analytical Overview." *Antitrust Law Journal* 74 (1): 129–73. http://www.jstor.org/stable/27897544.

Baran, Paul A., and Paul M. Sweezy. 1968. *Monopoly Capital: An Essay on the American Economic and Social Order*. 1st ed. Monthly Review Press.

Bashir, Muhammad Ahmad, Sajjad Arshad, Christo Wilson, and William Robertson. n.d. "Tracing Information Flows Between Ad Exchanges Using Retargeted Ads." In *Presented at USENIX Security Symposium*. https://www.usenix.org/system/files/conference/usenixsecurity16/sec16_paper_bashir.pdf.

Competition and Markets Authority. 2020a. "Appendix M: Intermediation in Open Display Advertising." https://assets.publishing.service.gov.uk/media/5fe495c28fa8f56afaf406d4/Appendix_M_-intermediation_in_open_display_advertising_WEB.pdf.

———. 2020b. "Online Platforms and Digital Advertising: Market Study Final Report." https://assets.publishing.service.gov.uk/media/5fa557668fa8f5788db46efc/Final_report_Digital_ALT_TEXT.pdf.

Durand, Cédric. 2024. *How Silicon Valley Unleashed Techno-Feudalism: The Making of the Digital Economy*. Translated by David Broder. Verso.

Foster, John Bellamy, and Robert W. McChesney. 2014. "Surveillance Capitalism: Monopoly-Finance Capital, the Military-Industrial Complex, and the Digital Age." *Monthly Review* 66 (3): 1. https://doi.org/10.14452/MR-066-03-2014-07_1.

Fuchs, Christian. 2014. *Social Media: A Critical Introduction*. Sage.

———. 2015. "Ideological Transport Workers." In *The Routledge Companion to Labor and Media*, edited by Richard Maxwell. Routledge.

Google. n.d.a. "About Targeting for Display Campaigns." https://support.google.com/google-ads/answer/2404191.

———. n.d.b. "Ad Rank." https://support.google.com/google-ads/answer/1752122.

———. n.d.c. "Campaign Manager 360." https://marketingplatform.google.com/about/campaign-manager-360/.

———. n.d.d. "Display & Video 360." https://marketingplatform.google.com/about/display-video-360/.

———. n.d.e. "Earn More Revenue with Your Apps." https://admob.google.com/home/.

———. n.d.f. "Faster, Smarter Marketing." https://marketingplatform.google.com/about/.

———. n.d.g. "Get More Customers & Generate Leads with Online Ads." https://ads.google.com/home/.

———. n.d.h. "Get More Customers with Paid Search Advertising." https://ads.google.com/intl/en_us/home/campaigns/search-ads/.

———. n.d.i. "How to Plan a Display Campaign." https://support.google.com/google-ads/answer/172627.

———. n.d.j. "Take Control of All Your Ad Sales." https://admanager.google.com/home/capabilities/.

———. n.d.k. “Unlock the Power of Search.” https://services.google.com/fh/files/misc/unlock_the_power_of_search_2022.pdf.

Harvey, David. 2020. *The Anti-Capitalist Chronicles*. Pluto Press.

House Judiciary Committee. 2020. “Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations.” https://purl.fdlp.gov/GPO/gpo145949.

Huato, Julio. 2024. “The Political Economy of Digital Technology.” *Science & Society* 88 (2): 212–49. https://doi.org/10.1521/siso.2024.88.2.212.

Kangal, Kaan. 2017. “Sean Sayers’ Concept of Immaterial Labor and the Information Economy.” *Science & Society* 81 (1): 124–32. https://doi.org/10.1521/siso.2017.81.1.124.

Lebowitz, Michael A. 2009. *Following Marx: Method, Critique and Crisis*. Vol. 20. Historical Materialism Book Series. Brill. https://search.ebseohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=308474.

Marx, Karl. (1867) 1990. *Capital: A Critique of Political Economy*. Reprint. Vol. 1. Penguin Classics.

———. (1894) 1991. *Capital: A Critique of Political Economy*. Vol. 3. Penguin Classics.

———. (1885) 1992. *Capital: A Critique of Political Economy*. Vol. 2. Penguin.

Morozov, Evgeny. 2022. “Critique of Techno-Feudal Reason.” *New Left Review* 133/134: 89–126.

Osterwalder, Alexander, Yves Pigneur, and Alan Smith. 2010. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Edited by Tim Clark. Strategyzer Series. Wiley. https://library.ncl.ac.uk/openurl/?u.ignore_date_coverage=true&rft.mms_id=9900083254201024 11.

Pereira, Daniel. 2020. “Google Business Model.” 2020. https://businessmodelanalyst.com/google-business-model/.

Reveley, James. 2013. “The Exploitative Web: Misuses of Marx in Critical Social Media Studies.” *Science & Society* 77 (4): 512–35. https://doi.org/10.1521/siso.2013.77.4.512.

Smythe, Dallas W. 1977. “Communications: Blindspot of Western Marxism.” *Canadian Journal of Political and Social Theory* 1 (3): 1–27.

Srinivasan, Dina. 2020. “Why Google Dominates Advertising Markets.” *Stanford Technology Law Review* 24 (1): 55–115.

Srnicek, Nick. 2020. *Platform Capitalism*. Polity.

The New Institute. n.d. “Fellows. Cédric Durand.” n.d. https://thenew.institute/en/people/cedric-durand.

Varoufakis, Yanis. 2023. *Technofeudalism: What Killed Capitalism*. The Bodley Head.

Zuboff, Shoshana. 2019. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. 1st ed. Public Affairs.

1. This special instance in Marx has been abused in the secondary literature. For example, Fuchs argues that Facebook employees are "ideological transport workers" making Facebook productive of surplus-value and its users industrial laborers (Fuchs 2015, chap. 5).
2. The Competition and Market Authority notes that the historical development of the "ad tech stack" has been marked by SSPs effectively taking over the functions of ad exchanges. Many models of the ad tech stack include ad exchanges as discreet entities that join DSPs and SSPs (Bashir et al. n.d.; House Judiciary Committee 2020; Srinivasan 2020).