

Rethinking Capitalism in the Age of digitalization: Analysis on the Basis of Digital Labor Theory

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ABSTRACT

This article discusses the changes of capitalism in the era of digitalization, including factors of production, digital markets, capital forms, and the scope of capital exploitation, arguing that despite the specificity of digital commodities, companies dealing with such products have managed to gain control of the market, they have done so on the basis of the exploitation of human labor. The core forces of capitalist exploitation, commodification, and inequality, rather than being mitigated, are growing and accelerating in the development of a networked and digital political economy, concluding that digitalization is an extension of capitalist hegemony

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Introduction

The flourishing and widespread use of contemporary information technologies such as networking, informatization and digitization has transformed digital existence from a prophecy to a reality and is changing the definition of labor, the forms of labor and the relations between labor in different ways. Some scholars see digitalization as a sign of the end of capitalism, justifying this by the logic of zero marginal cost of digital goods (Rifkin, 2014), which based on the fact that in the digital age there is almost no cost for the reproduction of products, thus making goods almost free. The possibility of a future in which things are virtually free makes it very difficult for capitalist firms to make a profit, because they lose control over the reproduction of their goods. In Mason's (2016, p. 181) words, "Info-tech makes the abolition of work possible," which means that labor is freed from the chain of control.

However, Dan Schiller believes that digitalization will gradually become the new support for the evolving political and economic structure of capitalism (Schiller, 1999), which he calls "digital capitalism." The main reason for this

is that the internet is expanding the social and cultural scope of the capitalist economy in a way that has never happened before. In the digital age, the bourgeoisie has used its global dominance and capital advantage to transform networked information technology into the most effective and insidious new means of exploitation, and in the process has produced a large number of "free digital laborers" to serve the accumulation and reproduction of its capital and the global expansion. The most distinctive feature of digital capitalism is its use of the internet to radically break down the closures and isolation between regions of the world, to facilitate the further expansion of the world market, and to promote a significant increase in the organization of global capitalist production, thus becoming an extension of capitalist hegemony.

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market, they have done so on the basis of the exploitation of human labor. The core forces of capitalist exploitation, commodification, and inequality, rather than being mitigated, are growing and accelerating in the development of a networked and digital political economy, concluding that digitalization is an extension of capitalist hegemony.

The New Changes in Digital Capitalism

The capital discussed in this article is digital capital, which is another form of capital that distinguishes itself from industrial and financial capital. Digital capital forms a digital platform rooted in general data, and because of the realization of general data, our society manifests itself as an accumulation of massive amounts of data, and people and things, as well as any being, must be digitized in order to exist and be visible under digital capitalism. Compared to other stages of capitalism, digital capitalism has shown profound changes in the composition of the factors of production, the digitization of markets, the form of capital and the scope of capital exploitation and exhibits digital features of development.

With the development of modern technology and the improvement of the intellectual property system, technology and information have become relatively independent factors of production and are increasingly the protagonists of the real world. Data are an example of the combination of human and material factors in the digital age, a factor of production that can bring greater returns and has a certain degree of scarcity. Although there is disagreement as to whether digital labor is material or immaterial, such as information production, cultural content and services, emotional labor, etc. However, it is generally accepted that digital labor is a new 'labor process' and an important form of labor.

In the digital economy, big data based on the analysis of the behavior of users of digital products is applied to the production, distribution, exchange and consumption processes of the modern capitalist economy, which not only helps people to plan and organize production and business activities, but also to make correct judgments and predictions about the economic situation and market development. All of this has created a great deal of material and spiritual wealth for society. However, if the density of information contained in the data is very low, when the scale of the data is small, the dimensionality is small and the timeliness is poor, it will be of little use for production and business decisions. Only large-scale, high-dimensional and timely big data can effectively play the role of economies of scale and scope and have economic value and become

a factor of production in the true sense of the word. Today's digital capitalism is an economic and political system constructed on the basis of such big data as the latter, using extremely advanced technology.

A digital marketplace is the process of trading goods or services through digital information processing and networked information transmission. In digital markets, the entire network capacity becomes a potential sales market for products, as do internet users in all countries and regions of the world. The role of digitization for markets cannot be underestimated. On the one hand, the digitization of the market facilitates the extension of the domestic market to the international market, helping the bourgeoisie to advertise, promote and sell their goods within the global network coverage and to maximize sales and profits. Almost all mobile app applications and programs, search engines and shopping websites are equipped with the ability to collect and integrate search data, transaction data and quantitative analysis in the cloud in the background. Once users or consumers reveal their personal needs, buying tendencies, consumption habits, interests and other information in the course of their use, they are recorded. After that, a large number of accurate recommendation information of relevant products will appear to induce users to spend. This is also known as the "data double" (Papacharissi, 2018), which data shapes the virtual individual and the way the actor (capitalist) treats the individual.

On the other hand, internet companies' big data statistics on consumers' search information and transactional behavior play a leading role in production and sales, helping these companies to develop their product strategies more precisely. They sell or feed the results of their calculations to the producers and sellers of goods. The former can obtain a large amount of relatively accurate information on consumer demand and adjust production in time to maximize profits; the latter can obtain references for adjusting sales patterns and optimizing marketing strategies. Data is the "new oil," giving the digital marketplace its superpower.

The digitization of data as a new factor of production and market has given rise to a new form of capital - digital capital. Digital capital does not arise out of thin air; it is a form of capital that exists on top of other capital and is based on digital for profit. By linking other capital online and offline, it allows for the effective use of previous capital in the digital sphere and also facilitates the development of these capitals for the reproduction of profit in the offline sphere, and the result of this interaction has important implications for both the digital and social spheres (Ragnedda, 2018). For Marx, the greatest

drawback of industrial capital is the blindness of production. It cannot accurately predict and judge whether the goods produced will satisfy and adapt to the diverse and multi-level real and potential needs of consumers. While financial capital solves the problem of industrial capital turnover and optimizes the allocation of industrial capital, it does not solve the problem of blindness; credit bankruptcy and the bursting of financial bubbles are based on a lack of relevant information. Data capital combines the technological advantages of the Internet with the circulation advantages of financial capital, enabling producers and providers of capital to see clearly the needs of consumers and to make effective use of capital.

In the digital age, Internet companies or shopping platforms have established a new and powerful marketing order with the core advantage of technology and data, and manufacturers who were originally relatively independent must depend on these companies or platforms to survive. If they move away from or disengage from this maximized marketing order, their product sales will plummet, and they will inevitably be eliminated from the market. On the other hand, financial capital needs to assess investment risks, investment directions and credit ratings through relevant data calculations, so as to guide financial capital to avoid risks and choose where to invest, and to achieve the preservation and enhancement of financial capital. Digital capital has restructured the capitalist system of production and the digitization of markets has integrated digital capital into the economic and political structure of contemporary capitalism in all its dimensions.

High-tech internet companies such as Google and Facebook, where data is generated and shared with every search and social activity of users, are experiencing exponential growth in the total amount of data, which will contribute capital to Google and Facebook. But it is these internet companies that hold the data that ultimately benefit, not the average user. The capital of these tech companies, i.e., user data, is produced by all users, but the returns are privatized. These tech companies use the free labor to gain more capital. This labor is known as 'digital labor' (Sherman, 2015) and the laborer include content producers and content consumers. Content producers, through the platforms provided by tech companies, spontaneously produce content in the form of free videos for content consumers to consume, which are supposed to be services provided by the platforms.

Content consumers, on the other hand, provide their own data, and on the one hand capitalists can use these contributions to realize in the capital markets. On the other hand, through in-depth analysis of the data, content creators can be

guided and directed to produce content in the form of videos, etc. Nicolas Carr sees this as a modern form of tenureship (Carr, 2018). Social platforms allocate each person a small piece of virtual land on which users can grow their own internet crops, such as by posting texts or photos. The texts or photos are then used by the platform to attract viewers, advertisers and to make profits. These digital sharecroppers are generally happy and do not feel exploited, because they are trying to showcase themselves or socialize with strangers, not to make money.

For content consumers, the seemingly free pastime of Internet activity is, in fact, an attention product in digital capitalism. In the 2018 Disney animated film *Ralph Breaks the Internet* (Rich Moore, 2018), the penniless Wreck-It Ralph (John C. Reilly) in the Internet world is the one who runs to Yesss (Taraji P. Henson) of the Buzz Tube website to make money with videos that attract attention on the Internet. This is the basic law of political economy in today's digital age, or in digital capitalism: Internet attention or public attention is money. This law is the basic foundation that underpins the economy of Internet celebrity (digital producers). On Instagram and Tiktok, whoever can attract more attention and focus will get more advertisers and economic revenue, and the users of digital platforms in general are mired in this commodity ideology, as the lowest level of porters with dreams of success, providing free digital labor for digital capital, allowing the big digital platform companies to fully exploit the surplus value of digital labor. Even if digital laborers are successfully transformed into digital producers, they or the organizations they form will be deeply tied to digital platforms, and it will be difficult for them to resist capital exploitation.

Changes in the composition of the factors of production and the emergence of digital markets, which guarantee extensive and effective competition among producers of different commodities. Changes in the form of capital alleviate the blindness of capitalist production. Even the theory of "zero marginal cost of digital goods", which predicts that the capitalist firm will lose control over the reproduction of goods and will not be able to make a profit, fails because of the change in the scope of capital exploitation.

From the digital labor theory, it can be argued that these digital capitalist firms gain profits through other means, even evolving into monopoly capitalism in digitalization. The idea that digitalization will end capitalism has failed. Next, I will use the theory of digital labor to analyze the mobile and imperceptible way in which digitalization has penetrated people's lives and provided a new way of capitalist hegemony.

From “Audience Commodity” to “Digital Labor”

In 1974, Smythe published “Communications: Blindspot of Western Marxism,” which pointed to the Western Marxist research path that dominated half of communication research at that time (Smythe, 1977). In this article, Smythe argues that communication research at the time was too focused on the cultural dimension and neglected the economic basis of communication research, thus beginning the path of political economy of communication research. In this paper, Smythe pioneered the theory of “audience goods”, suggesting that the activity of watching television is the labor process of audience contributing to the accumulation of capital. On this basis, Smythe proposes that “there is no leisure under capitalism;” in other words, all the time outside of sleep time is working time, and even daily sleep and occasional relaxation and recreation are also replenishing energy for working time.

With the advent of the digital era, the theory of audience goods has been further developed, and some scholars have proposed the concept of “digital laborers.” In the digital era, the subjectivity and dynamism of Internet users in the media ecology are constantly affirmed. From audiences to users, from mere recipients of content to consumers of production, people gradually participate in the production and dissemination of content, and the subjectivity of Internet users is elevated to the point of having free rights. However, from the perspective of the political economy of communication, these apparently elevated status are precisely the lies of the digital economy. With their strong financial power, huge loyal user base, massive data and rich technical experience, the major digital platforms store data, use it to accumulate capital, use algorithms for personalized content and advertising, and engage in multilateral cooperation, global operation and expansion through platform organizations. On the one hand, users' basic personal information and information generated by their online behavior are data-driven, privatized and sold to advertising companies by the platform; on the other hand, users' online activities contribute their “labor” to the platform for free in various ways. With such a strong control of digital platforms, the seemingly active audience still cannot escape the fate of being exploited without pay similar to the era of audience commodity theory.

If the audience commodity theory focuses on the self-development mechanism of the media industry at the macro level, digital labor research focuses on the micro-level labor forms from the perspective of “labor,” while re-focusing on the productivity and action power of the “audience”,

which is hidden by the macro level, to explore the complexity, exploitation and struggle behind the production in the digital era.

Labor, the central concept of the Marxist system, is regarded by Marx as the essential act that distinguishes human beings from other living beings. Marx believed that there is a central feature in labor, namely consciousness, and that labor is a human activity of consciously producing use value. In the digital age, along with the development and spread of technology and the change of capital production relations, Maurizio Lazzarato further expanded the connotation of labor. He argues that labor in the digital era includes not only the production of material things, but also “the labor of producing information and cultural contents of goods” and activities that cannot be classified as “work” in the traditional conception (Lazzarato, 1996). In other words, the digital era is fundamentally characterized by the decline of workers in traditional industries and the growth of workers in new digital industries, and by the increasing inclusion and transformation of people outside of traditional labor groups into objects of exploitation. With the continuous development of Internet technology, the form of communication of digital information is changing and a virtual network society is gradually taking shape. Behind the rapid development of digitalization, more and more people are lured by commercial capital and absorbed into this virtual network society, and all their online behaviors are unconsciously transformed into digital labor behaviors with commercial value, rapidly promoting the value-added and expansion of digital capital.

In traditional capitalism, workers are so dependent on capital that they have to sell their labor to survive. In this process, the owner of capital returns the labor required to produce the product to the laborer in the form of wages, but by selling the product produced by the surplus labor time for the profit that belongs to the owner of capital (Marx, 1988). Thus, in classical Marxian theory, the exploitation of labor by the owner of capital is based on “coercion” because laborers need to earn the wages they live on, and the owner of capital can sing laborers' labor hours or increase labor intensity at will, but only for a fixed wage, thus maximizing profit.

Following Marx's theory of labor, Michael Burawoy argues that in the contemporary capitalist context, with the rise of working class struggles and improvements in institutional design at the state level, labor's dependence on capital begins to diminish and “coercion” gradually loses its operational legitimacy. The owners of capital thus changed their tactics of labor control, establishing a degree of “consent” between them and labor in order to gain legitimacy for capital

production and to capture surplus value (Burawoy, 1982). This “consent” is in fact the spontaneous acceptance of the factory order by the workers in the monopoly capitalist labor process and the production of capitalist profits. What drives workers to produce is more an internal voluntary obedience than the suppression of external forces.

Michael Burawoy argues that capitalists conceal and capture surplus value by constructing “consent” with workers through a variety of means, including shifting contradictions and institutional design. First, the capitalists have been able to increase the efficiency of production through advanced production technology, thus explaining the new technology, i.e., capital investment, as a source of profit and hiding the exploitation of surplus labor. Second, only through commodity exchange in the market can labor's surplus labor be transformed into profit, and in this transformation process, the market's supply and demand once again justifies the capitalists' uncompensated appropriation of labor's surplus labor. Thirdly, at the level of institutional design, the game of “work competition” elaborated by contemporary capitalism allows laborers to enjoy the fun of competition in the process of work, such as promotion, salary increase, and the false sense of fighting against capitalism brought by “laziness”. These false senses of freedom and pleasure are the core elements of the construction of consent and the masking of exploitation (Burawoy, 1982).

In the era of digital capitalism, the Internet industry has been aided in its development by the “hegemony” constructed by digital capitalism, which has provided the basis for the “consent” constructed between the Internet industry and digital workers that cannot be ignored. Only a small part of the digital content of the Internet industry is produced by the labor of in-house employees, while the majority of the content is produced by the “free labor” of digital workers. According to Terranova Tiziana, free labor has three characteristics (Terranova, 2000). First, free labor is labor that is exploited by digital capitalism. Second, digital workers are in a state of autonomous labor. These digital workers are like in a playground; they do not think they are working; they think they are having fun. Third, free labor is free labor.

These generalizations are simple and haphazard, but they meaningfully encapsulate an important shift in the nature of labor in the digital age. Through this shift in the nature of digital labor, capitalists get the capital they need to thrive, and users get the fun. Under the appearance that both parties are getting what they want, the digital industry completes the exploitation and appropriation of the fruits of labor that facilitate

the process of capital production and value addition in the digital industry.

The development of capital in the industrial age relied on the expansion of space, with new spaces leading to new labor and markets. And in the digital era, the development of capital also strongly depends on the expansion of space, but the space on which capital in the digital era depends includes not only physical space, but also the relational space of human interaction. The development of digital capitalism is accompanied by the expansion of physical space and the space of human interaction, such as people moving from the Internet to the Internet of Things, which means that digitalization has fully begun to intervene in material life. Digital capitalism digitizes the daily life of human beings, thus realizing the centralized monopoly of social information, and thus completing the commodification of people's daily life.

Due to the rapid development of digital capital, people's traditional conception of the independent relationship between leisure and labor has been broken by the monopoly capitalist economy. Entering the digital era, the process of capital accumulation, under the influence of Internet technology, gradually penetrates into the home, which belongs to the private sphere, and the home becomes an important site of labor for digital labor. Called by the hegemony of commercial ideology, people continue to purchase video technology and communication machines, and immerse themselves in the virtual society of the Internet to communicate, entertain, and play games, becoming digital laborers in the Internet industry without interruption. In addition, as the Internet of Things enters people's daily lives, this new generation of network technology with the ultimate goal of commercial interests, driven by people's psychological pursuit of more advanced technology (such as fully intelligent homes and mobile wearable devices), brings clothing, food, housing and transportation, which belong to the private sphere, into the manipulation of capital. The producers of this data are reduced to an important part of capital appreciation. The process of expansion of digital capital from factories to households is also the process of individual households being deeply capitalized, and capital is entering every detail and pore of social life through digitization (Elmer, 2000).

Digital Surveillance and Accelerationism

Cookie originally means a small dessert, but it is also a technical term in the Internet field is a separate computer code byte, the role is to temporarily record user information, including user IP address, username, password, web

browsing traces, web page elements click rate, before and after the conversion rate between web pages, dwell time and so on. Users can use cookies to improve the speed of web browsing or to automatically log in to pages they have already logged in to.

The commercial use of cookies without informing Internet users, or by writing the clauses in “user notes” with many technical terms, is the default unspoken rule of almost all commercial Internet companies. The Internet users are forced to record their private information and are induced to use the Internet with commercial ideology such as “cloud storage” and “cloud service”. Take Baidu, China's largest search engine, as an example, Baidu uses the digital information it has obtained about its users to analyze its audience and to accurately target advertisements for commercial companies in different fields. The user's search, click, visit, and other online behaviors reflect his real needs and behavioral habits.

Cookies were originally invented to improve the Internet experience and efficiency, but due to the lure of commercial interests, they are used by some Internet companies to earn profits, and these companies are intentionally leaking users' private information. When users of Internet companies use the services they provide, they give the right to use their private information, personal preferences, real needs and usage habits, and other information to these technology companies. This user information, which has high commercial value, is bought and sold by the technology companies and becomes an important way to make profits. In this process, users who use the services of these companies are unconsciously becoming their “digital labor” for accumulating capital.

With the development of the Internet of Things (IoT), the scope of monitoring has been extended to the physical human level. When these mobile devices, which are considered to be “revolutionary products”, become more and more popular, information about people's movement, body data, heart rate frequency, sleep health, etc. will be uploaded to the cloud. Cloud storage in the IoT will accumulate data about every detail of a person's daily life to the servers of commercial companies and form a “complete portrait” of the individual through cloud computing technology. The technology of the IoT era will penetrate into people's private sphere of surveillance, into everyone's daily life, with little or no awareness of it. This situation is very similar to Foucault's concept of the “panopticon” (Michel Foucault, Paul Rabinow, 1984). But commercial surveillance and digital labor's self-regulation do not come from the coercion of power, but from digital labor's voluntary consciousness, from digital labor's

admiration for the emerging information technology and the hegemony of commercial ideology.

The use of digital technology and the plethora of smart terminals and devices are making our society increasingly intelligent and our lives increasingly fast-paced as a result. Nick Srnicek offers a new kind of accelerationist thinking about digital capitalism. The accelerated movement towards digital capitalism is not only an internal feeling, but also an objective change. As the speed and capacity of information transmission becomes faster and faster, and as our interaction with the world becomes more and more convenient, new problems are bound to arise, such as the issue of audience initiative in the context of digital capitalism. In the traditional Marxist critique, there exists not only a critique of the relations of production of capitalism, starting with Lukács, Marcuse and others, which points the finger of criticism not only at the relations of production of capitalism, but also at the productive forces of capitalism itself, i.e., the capitalist mode of production consisting of technology and machines, and how to liberate people from the control of machines and technology, which also becomes a Marxist an important dimension. In the context of digital capitalism, Nick Srnicek and Alex Williams suggest that accelerationism aims to liberate potential productive forces without destroying the material platform of neoliberalism, but only by redirecting it to public purposes (Williams & Srnicek, 2014). Accelerationism suggests that this material power of technology and machinery was never Marx's revolutionary goal. Rather, it was the material force needed by the working class, who needed to use modern technology and machines as weapons to overthrow the rule of capitalism. The Marxist revolution, especially in the digital age, requires not the overthrow of technological domination, but the struggle for socio-technical leadership, a leadership both in the conceptual sphere and on the material platform.

Conclusion

Digital capitalism is a “new era” in the history of capitalism, an economic fact and a social trait of contemporary capitalist society. It has developed a set of operational logics that people cannot change at will, but must adapt and comply with, as they become accustomed to and dependent on the convenience offered by online information technologies and mobile devices. In most cases, data sharing is a default or passive requirement for accessing a service. This logic has allowed for a more optimal and rational allocation of economic factors, for more efficient

economic activity, and to a certain extent, for the functioning of the global capitalist economy. Digitalization is an extension of the hegemony of capitalism, as it allows for a more rational organization, utilization and circulation of previously scattered factors of production that were not valued by the world, and becomes the main means of sustaining capitalist economic development.

However, under contemporary capitalist conditions, the intrinsic nature of capital to chase surplus value has not fundamentally changed, and digital capital, like finance capital, constitutes a dominant factor of economic power and inequality, and the crisis it provokes is taking on new dimensions and forms. The bourgeoisie, using its absolute dominance and overwhelming capital advantage, is dividing up the surplus value produced by society as a whole and, with the help of digitalization, is further deepening the exploitation of hired and non-hired workers. At the same time, personal information has become the basic fuel for the operation of today's economic activity. With the control of capital domination, the operation of technical codes and people's dependence on new technologies, Internet companies in the digital era do their best to include every user of their services in the scope of tracking and surveillance, transforming them into the accumulation of its capital. In contrast to traditional surveillance technologies, surveillance technologies in the digital age penetrate every aspect of people's daily life in a comprehensive and imperceptible way, thus consolidating the power of capital control. In the era of digital capitalism, surveillance does not only aim to imprison and control, but also to transform the object of surveillance into a "digital labor" that continuously provides digital labor for the accumulation and value-added of digital capital. This process not only foreshadows the transformation of capital production out of the factory of industrial production and the integration of society as a whole into the factory production system, but also constantly calls the netizens to join the digital capital production process through the hegemony of commercial ideology.

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