

**A dialogue between the concept of the Industrial-Economic Healthcare Complex and the Brazilian Political Economy of Information, Communication and Culture**

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**Un diálogo entre el concepto del Complejo Económico-Industrial de la Salud y la Economía Política de la Información, Comunicación y Cultura brasileña**

**Um diálogo entre o conceito de Complexo Econômico-Industrial da Saúde e a Economia Política da Informação, da Comunicação e da Cultura Brasileira**

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**Abstract:** The aim of this article is to propose an original dialogue between studies that, bringing together Brazilian public health thinking and a heterodox view of political economy, emphasize the importance of the relationship between health and national development based on the concept of the Industrial-Economic Healthcare Complex (CEIS) and the Marxist analysis of the new mediating social structure of capitalism conducted by the Brazilian Political Economy of Information, Communication and Culture (EPC), in which so-called digital platforms have acquired a central position. In this context, a distinction is initially made between a digital platform in the technical sense and the companies that own platforms. Next, an analysis is carried out highlighting the differences and complementarities between the morphology of the Industrial-Economic Healthcare Complex and the model for analyzing the new structure of social mediation. Finally, a brief critique is made of the notion of economic development that preserves the logic of accumulation of the capitalist system.

**Keywords:**

Industrial-Economic Healthcare Complex; Political Economy of Information, Communication and Culture; Digital Platforms; Subsumption of Labor in Capital; Brazilian Unified Health System (SUS)

**Resumen:** El objetivo de este artículo es proponer un diálogo original entre estudios que, reuniendo el pensamiento de la salud pública brasileña y una visión heterodoxa de la economía política, enfatizan la importancia de la relación entre salud y desarrollo nacional, basándose en el concepto del Complejo Económico-Industrial de la Salud (CEIS) y el análisis marxista de la nueva estructura social mediadora del capitalismo realizada por la Economía Política de la Información, Comunicación y Cultura (EPC) brasileña, en la cual las llamadas plataformas digitales han adquirido una posición central. En este contexto, se distingue inicialmente entre una plataforma digital en el sentido técnico y las empresas propietarias de plataformas. A continuación, se realiza un análisis destacando las diferencias y complementariedades entre la morfología del Complejo Económico-Industrial de la Salud y el modelo para analizar la nueva estructura de mediación social. Finalmente, se hace una breve crítica a la noción de desarrollo económico que preserva la lógica de acumulación del sistema capitalista.

**Palabras clave:**

Brasil, complejo económico-industrial de la salud, economía política de la información, comunicación y cultura, plataformas digitales, subsumisión del trabajo en el capital, sistema único de salud

**Resumo:** O objetivo deste artigo é propor um diálogo original entre estudos que, reunindo o pensamento da saúde pública brasileira e uma visão heterodoxa da economia política, enfatizam a importância da relação entre saúde e desenvolvimento nacional, com base no conceito de Economia Econômica. Complexo. -Saúde Industrial (CEIS) e a análise marxista da nova estrutura social mediadora do capitalismo realizada pela Economia Política da Informação, Comunicação e Cultura (EPC) brasileira, na qual as chamadas plataformas digitais adquiriram posição central. . Neste contexto, inicialmente é feita uma distinção entre uma plataforma digital no sentido técnico e as empresas proprietárias de plataformas. A seguir, é realizada uma análise destacando as diferenças e complementaridades entre a morfologia do Complexo Econômico-Industrial da Saúde e o modelo para analisar a nova estrutura de mediação social. Por fim, é feita uma breve crítica à noção de desenvolvimento econômico que preserva a lógica de acumulação do sistema capitalista.

**Palavras-chaves:**

Brasil, complexo econômico-industrial da saúde, economia política da informação, comunicação e cultura, plataformas digitais, subjugação do trabalho ao capital, sistema único de saúde

**1. Introduction**

In 2021, the journal *Cadernos do Desenvolvimento* in partnership with the Oswaldo Cruz Foundation (FIOCRUZ) published a special edition dedicated to "development, health and structural change." Aligning the thinking on public health in Brazil with a heterodox understanding of political economy – in keeping with the great tradition of developmentalist thought and, therefore, in contrast to conventional health economics –, the authors propose "resuming a robust research program to advance the relationship between health and development based on the concept of the Industrial-Economic Healthcare Complex," as put in the document's presentatio written by coordinator Carlos Gadelha (2021a, p. 11).

The concept of the Industrial-Economic Healthcare Complex (or CEIS), which aims to “use the health area as the central axis for the execution of a national development policy agenda” (Almeida, 2023, p. 3), is foundational and permeates the entire document, since, as Gadelha (2021b, p. 27) explains, "healthcare, in this research program, starts to be seen as a clear and important realm for the reproduction of capitalist dynamics in its tense interplay with life, politics and society”. In other words, the concept of the Industrial-Economic Healthcare Complex considers that the social and economic aspects of development are inseparable (Almeida, 2023) and, therefore, the health area “constitutes a privileged cognitive and political realm with which to analyze how capitalist dynamics are reproduced in the social sphere, transforming the material and social foundations of the production of goods and services” (Gadelha, 2021b, p. 37).

In this context, it is also worth mentioning the final report of the Government Transition Office of the new administration, presided by Luiz Inácio Lula da Silva (of the Workers' Party), who advocates for the "recreation of a variety of occasions for social participation, such as the Executive Group of the Industrial Healthcare Complex (GECIS)" (Brazil, 2022, p. 18). Another recommendation is the book *Saúde é desenvolvimento: o Complexo Econômico-Industrial da Saúde como opção estratégica nacional (Health is development: the Industrial-Economic Healthcare Complex as a national strategic option*, in translation), published by FIOCRUZ in December 2022, in which the authors extensively present their collective work on the subject, along with a manifesto in defense of the complex

(Gadelha et al., 2022). However, for the sake of convenience, throughout this article, we will be focusing exclusively on the aforementioned 2021 special edition of the *Cadernos do Desenvolvimento*.

For the purpose of our objectives, we followed the suggestion made by Gadelha in the presentation of said edition (2021a, p. 14), namely that the efforts of his noteworthy team of researchers "increasingly incorporate other fields of knowledge in the natural, exact and social sciences," which, in our case, implies integrating our reflections regarding the Industrial-Economic Healthcare Complex in a non-eclectic way to the analytical and theoretical framework of the Brazilian Political Economy of Communication and Culture (EPC), from a Marxist and not exactly heterodox angle, such as that of the authors, whose contributions can be described as "an attempt to build a different path to recreate a pact that guides capitalist dynamics in order for the abstract movement of capital to be realized in worldly life, guaranteeing the wellbeing and, indeed, the moral survival of capitalism itself," as professor Luiz Gonzaga Belluzzo (2021, p. 24) aptly puts it.

## **2. The possibility of an interplay between the concept of Industrial-Economic Healthcare Complex and the Brazilian Political Economy of Communication and Culture**

It's clear that the concept of the Industrial-Economic Healthcare Complex is a relatively consolidated and influential perspective in Brazil, despite having faced, along with many other perspectives, a fierce onslaught in the period following the 2016 coup against President Dilma Rousseff. The administrations of both Michel Temer and Jair Bolsonaro – to say nothing of the latter's disastrous management of the Covid-19 Pandemic – represent an attempted neoliberalization of the healthcare sector, in keeping with two pro-privatization perspectives (Bolaño & Zanghelini, 2022), which, as the case may be, agree with the sharing of public information by way of the creation of an open system called Open Health, which, as per the example of the Open Banking system, would be "a repository of health and healthcare data of all Brazilians, collected from electronic medical files; and a 'positive health registry,' with financial information about health insurance beneficiaries" (Fraga and Rocha, 2022).

This brings us to the issue of digital platforms and, in particular, to the less-discussed aspect of public-private relationships in the interplay of social control and regulatory systems, seeing as "different State apparatuses also exchange data information with the platforms and even participate in the latter's monetization model" (Bolaño et al., 2022, p. 15). Hence, you arrive at an entire field of interplay between the discussion of the concept of the Industrial-

Economic Healthcare Complex and the critique of the Political Economy of Information, Communication and Culture (Bolaño, 2000), which takes into account both the organized work of the public system and the workers connected to the complex, as well as those responsible for the production and maintenance of the digital platforms, the latter of whom take on the job of social mediation, in the sense of the concept of mediation defined by the Brazilian Political Economy of Communication and Culture (EPC),<sup>1</sup> in the academic field of Communications. As Martins et al. (2023, p. 89) explains:

When defining the merging of audiovisual, telecommunications and computing, which are the foundation for the establishment of these platforms, Bolaño (1999) asserted that this refers, in a broad theoretical level, to the alignment between information, communication, and culture, in light of the formation of the culture industry, a mediating element between the real world and the system. On a second more concrete level, it points to an approximation of these sectors and to the restructuring of markets and power relations, based on technological changes. In the same way that the culture industry operates the mediation in the sense of amplifying the subsumption of cultural labor, the platforms mediate a set of other types of intellectual labor, adjusting them to the decisions of capital. This mediation impacts workers' culture, be it in the way they see themselves, how they relate to one another and with the content of the job and the work environment themselves, and constitutes new modes of algorithmic management and surveillance, all with the aim of increasing exploitation, in a scenario of systemic crisis.

The health and development dyad, which is at the center of the issue for authors such as Gadelha, can be understood in light of the problem of information-based digital platforms as public service, articulating in particular the contradiction between the interests of the State, as the ideal collective capitalist, and individual capitals in competition. In the current age, with the advancement of the Third Industrial Revolution and the subsumption of intellectual labor (Bolaño 2002), this contradiction manifested itself spectacularly in the dispute between the public and the corporate genome project in the turn of the 21<sup>st</sup> Century (Bolaño 2003), which is part of a movement to constitute a new regulatory mode dominated by finance (Chesnais, 1996). In regards to the idea of a Fourth Industrial Revolution, which has been widely adopted by heterodox economics, we will offer a brief critique later.

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<sup>1</sup> As Bolaño (2017, p. 159) briefly explains, the mediation category receives “[...] a definition articulated with Marx’s subsumption category, scrutinizing the specificities of cultural work, the limits to its subsumption and what this means in terms of the dual contradiction (capital-work; economy-culture) involved in the organization of cultural production under Monopolistic Capitalism, in short, the widespread production of cultural goods as merchandise, fulfilling the double economic function referred to by Garnham (1990), studying the same object : capitalist production of symbolic goods and advertising”.

For now, what is worth emphasizing is that the emergence and expansion of these so-called digital platforms are part of this movement which, beginning in the wake of the structural crisis of the 1970s, would lead to the establishment of the Internet economy and all the innovations brought about by the implementation of the new industrial paradigm of digitization. As important mechanisms of social mediation, these digital platforms find themselves at the intersection of industrial policy and social policy from the state's perspective. They represent an advanced stage of privatization and internationalization of the global cultural system, to use Furtado's expression (1978), under the control of monopolistic capital, resulting in serious consequences for democracy and social welfare systems. A powerful platform like the one used by the Brazilian Unified Health System (SUS),<sup>2</sup> for instance, holds immense interest for oligopolies that have found in human healthcare a privileged space for labor exploitation and the accumulation of capital, but also for those engaged in the business of information, advertising, propaganda, and surveillance.

### **3. The differentiation between technical platforms and corporations that own digital platforms**

Nick Srnicek (2018 [2016], p. 44) describe the genesis of "platform capitalism" as an outcome of the arrival of a new business model that capitalist companies need to incorporate to "take advantage of falling prices in data records", the latter being seen as essential "raw material"<sup>3</sup> in the system's current dynamic. We are therefore talking about "a new and powerful kind of company: the platform" (Srnicek 2018, p. 44):

Having emerged, in general, as a means of meeting internal data management needs, platforms have evolved into an efficient way to monopolize, extract, analyze, and utilize the ever-increasing amounts of data that were being recorded. This model has now spread to the economy as a whole and many businesses have incorporated platforms: powerful tech companies (Google, Facebook and Amazon), dynamic startups (Uber, Airbnb),

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<sup>2</sup> "Still in the 1970s, a social movement emerged in Brazil led by public health doctors and other health professionals, later called Health Reform. The political action of this movement promoted health, in the 1988 Constitution, to the condition of a fundamental right, of universal access and a duty of the State. It was the regulation of this constitutional right that resulted in the creation of the Unified Health System (SUS), regulated by Organic Law no. 8,080, in 1990" (Almeida 2023, p. 4 footnote).

<sup>3</sup> There seems to be a problem here: Srnicek should be referring to crude material and not raw material. This is because, as Marx explains, there is already human work objectified in raw materials. According to Srnicek: "[...] data to be the raw material [crude material, in fact] that must be extracted, and the activities of users to be the natural source of this raw [crude] material. Just like oil, data are a material to be extracted, refined, and used in a variety of ways" (Srnicek, 2018, pp. 42-43).

industry leaders (General Electric – GE –, Siemens) and the major agricultural corporations (John Deere, Monsanto), to mention just a few. (Srnicsek, 2018, pp. 44-45)

In the next paragraph, Srnicsek proposes what could be considered a second definition: "in the most general level, platforms are digital infrastructures that allow for two or more groups to interact." In a note, he adds: "even though platformas can technically exist in non-digital formats (as in a shopping center), the ease with which online activities record activities makes digital platforms the ideal model for extracting data in the current economy" (Srnicsek, 2018, p. 45). As such, they are technical structures that "position themselves as intermediaries that bring together different users," among whom we can include "customers, advertisers, service providers, producers, distributors, and even physical objects" (Srnicsek, 2018, p. 45). In a note, he adds that users can also be machines, referring to the Internet of Things (IoT). In the pages that follow, the author presents some of the economic characteristics of platforms, which are well documented in studies of information economics, such as network effects, the use of cross-subsidies, and different strategies for attracting users, which are not relevant to the scope of this article.<sup>4</sup>

What is important here is to make explicit the contradiction between the two definitions, suggested by the technical object, an infrastructure to serve different potential economic and social actors, but with privately-owned infrastructure on the other hand, which is concentrated in the hands of a limited group of companies, nicely defined by Jonas Valente (2019) as "digital monopolies." For Poell et al. (2020), digital platforms are "(re)programmable digital infrastructures that facilitate and shape personalized interactions between end users and complementarians, organized through systematic collection, algorithmic processing, monetization and circulation of data" (p. 4). However, to understand the phenomenon beyond its merely technical character, the authors add the notion of "platformization", which represents:

[...] the penetration of platform infrastructures, economic processes and government structures into different economic sectors and spheres of life. And from the tradition of cultural studies, we conceive this process as the reorganization of cultural practices and imaginations around platforms. (Poell et al., 2020, p. 5)

This division, which is unclear in Srnicsek's definition, is crucial, because it refers to the mutual interplay between productive forces and relations of production, so that their separation, in the theoretical sphere, demands a reasonable level of abstraction, and in the

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<sup>4</sup> For a good introduction to the problem of digital information and networks according to orthodox and heterodox economics, see: Herscovici (2011).

sphere of transformative action, the formulation of a reference horizon where another mediation becomes possible, in which another type of technical infrastructure will facilitate the development of another type of social relationship. Keeping in mind this necessary utopian horizon, it's important to differentiate, in the present context, between platforms in the technical sense (technical platforms) and the companies that own digital platforms, which are organized in different economic sectors in the form of an oligopoly.

A technical platform can be a system of enrollment in the public healthcare system, connected to the SUS platform, to the Ministry of Health or to a state-level health department, in which users plug in their information for statistical control by the authorities of the vaccination process, for example. In this scenario, you build a database that needs legal protection so as to not be commercially exploited in the market of content platforms, seeing as, technically, there would be no barriers to that. This goes to show how the state has a crucial role in regulating the economics of these platforms:

Even in private models, the State maintains its role as a tax collector and, by way of its purchasing power, as a financier and generator of research, development, and innovation, thereby subsidizing healthcare services. It also maintains databases (with citizens' information), which are currently one of the primary sources of information for innovations in healthcare and for increasing profitability for the private sector. (Cassiolato et al., 2021, p. 51)

Another type of technical platform is what we might call production platforms, or work platforms. These include what Srnicek (2018, pp. 62-67) refers to as "industrial platforms," which derive from the intentions of companies like GE or Siemens to "take platforms into the realm of traditional manufacturing. Among these aspirations, the most significant fall under the category of 'Internet of Industrial Things' or simply 'Industrial Internet'" (Srnicek 2018, pp. 62-63). The author's analysis of this type of platform is particularly interesting because it clearly refers to fundamental issues for the study of economics and sociology of work in current times, such as those related to the changes stemming from production restructuring, including the problem of automation and flexibilization, among others, but let's refrain from going down that path at present.

One hypothesis that may be worth testing in future research, in the same vein as Bolaño's (2003) study on the Human Genome Project, is the inclusion of "vaccination platforms" by biotechnologists in the category of production (or work) platforms. In this case, we are talking about research platforms that, in the fight against the coronavirus, had a critical role in reducing the time it took to come up with a new vaccine. The structuring of



different vaccine platforms of this kind (non-replicating viral vector platform, attenuated virus platform, and messenger RNA platform) established a geopolitics of the vaccine that designated each country's production capacity (Gadelha, 2022, p. 6). As the authors of the report made clear, the interests of major corporations that competing with each other in the pharmaceutical sector in this new epic battle draw new lines of dependency, exclusion and vested actions on the part of hegemonic countries and actors.

The choice of a technical platform by a company, the State or the implicated laboratory defines the objective conditions for the framing (the control) of the work of the scientists, in other words, for the subsumption of the intellectual work of this special segment of the working class. Hence, the property of a technical platform (productive force) allows for the subsumption, by the platform company, of the corresponding labor (production relationship).

#### **4. An approximation between the morphology of the Health Industrial-Economic Complex and the new structure of social mediation of capitalism conducted by the Brazilian Political Economy of Information, Communication and Culture**

As already mentioned, the industrial-economic healthcare complex seeks to develop the production of health goods and services, as this is the primary condition for “guaranteeing the sustainability of the Brazilian Unified Health System (SUS) in the medium and long term, and at the same time reversing the historical discrepancy between the standard national production and the profile of effective demand” (Almeida 2023, p. 4). The possibility of expanding the productive power of the industrial-economic healthcare complex, founded upon the growing demand of the Brazilian Unified Health System, as a pillar of Keynesian developmental policy under command of the State – in the same terms as, say, those suggested by Jabbour and Gabriele (2021) in their analysis of China's State capitalism (or market socialism, if you prefer), employing Ignácio Rangel's idea of "Economics of Projection" – is quite interesting from the point of view of current challenges and of the concrete possibilities of the Brazilian economy, given the need to build a new national project centered on meeting the needs of the majority. However, our perspective comes closer to that of the "Rosdolsky agenda," for instance, in the view proposed by Eduardo da Motta e Albuquerque (2012), another scholar of the Chinese case, finding in the current configuration of advanced capitalism the "visible germs of socialism."

At any rate, unlike Jabbour and Gabriele (2021), who view healthcare as an unproductive sector, we prefer the analytical perspective of those who, like Gadelha and his

colleagues, define the sector as an economic-industrial complex, the importance of which became evident during the period of the Covid-19 pandemic. Industries related to the complex, on a global scale, exhibited high rates of growth and profitability, effectively becoming the primary beneficiaries of the public health crisis. Among Big Pharma, which amasses the global production of vaccines in the heart of the core countries, Pfizer was the company that boasted the greatest profits in 2022:

The Covid-19 vaccine manufactured by Pfizer reigns as the world's best-selling drug in 2022, with over 35.4 billion euros in revenue generated last year. This is a gigantic figure in the pharmaceutical industry, far surpassing the revenue generated by any other treatment in history. Furthermore, thanks to the marketing of this product, Pfizer managed to become the first lab to surpass the 100-billion-dollar mark in revenue last year, achieving an annual net profit of \$31.3 billion. (Ruiz 2023)

In fact, when it comes to healthcare, we are talking about a significant realm of capital expansion, particularly after the failure of the so-called Welfare State and the consolidation of the neoliberal period. Sociologist Iuri Tonelo (2021) provides a comprehensive periodization of capitalism centered around the 2008 crisis, from its origins in the 1970s to the days preceding the public health crisis of 2020. The author talks about "the use of new communication technologies, with the emergence of 'platform economies' as a way to definitively weaken any element of labor stability and increase control over labor" as a decisive element of capital restructuring (Tonelo, 2021, p. 120). Furthermore, it's worth highlighting that there is "an attempt to significantly amplify technologies in the industrial sphere [...] along with the propaganda that we would experience a fourth industrial revolution, beginning with Industry 4.0, the era of communicability and interconnectivity" (Tonelo, 2021, p. 120).

Tonelo's claims is fair insofar as it refers to both the basic foundations of production restructure as well as the condemnation of the ideological nature of the idea of a Fourth Industrial Revolution, which was put forth by Klaus Schwab (2018; 2019 [2016]) and by the World Economic Forum and subsequently adopted (acritically) by many heterodox authors, as is the case of Jabbour and Gabriele (2021), who employ the concept without reservations, based on the work of professor Luciano Coutinho (2018), as well as the authors of the report published in *Cadernos do Desenvolvimento*, the subject of this paper.<sup>5</sup> Indeed, ours is the

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<sup>5</sup> It bears highlighting that in one of the articles in the special edition of the journal, the authors express a criticism of the idea of the Fourth Industrial Revolution by referring to the movement called deglobalization, beginning in the 2010s and characterized by "the introduction of new and important items to the industrial policy and innovation agenda. The World Economic Forum, the renowned annual meeting of the global elites in

opposite position, the one of Marxist scholar Bolaño (2002), who characterizes the Third Industrial Revolution as a period of advancement of the process of subsuming labor – in this case, intellectual labor – into capital, representing a qualitative leap that, as in the two previous revolutions, unfolds into a secular movement characterized by two stages, in which the second stage is marked by biotechnological development. We can identify, as a cutoff point, the human genome project, which follows the development, in the first phase, of microelectronics and of information and communication technologies (Bolaño 2003).<sup>6</sup>

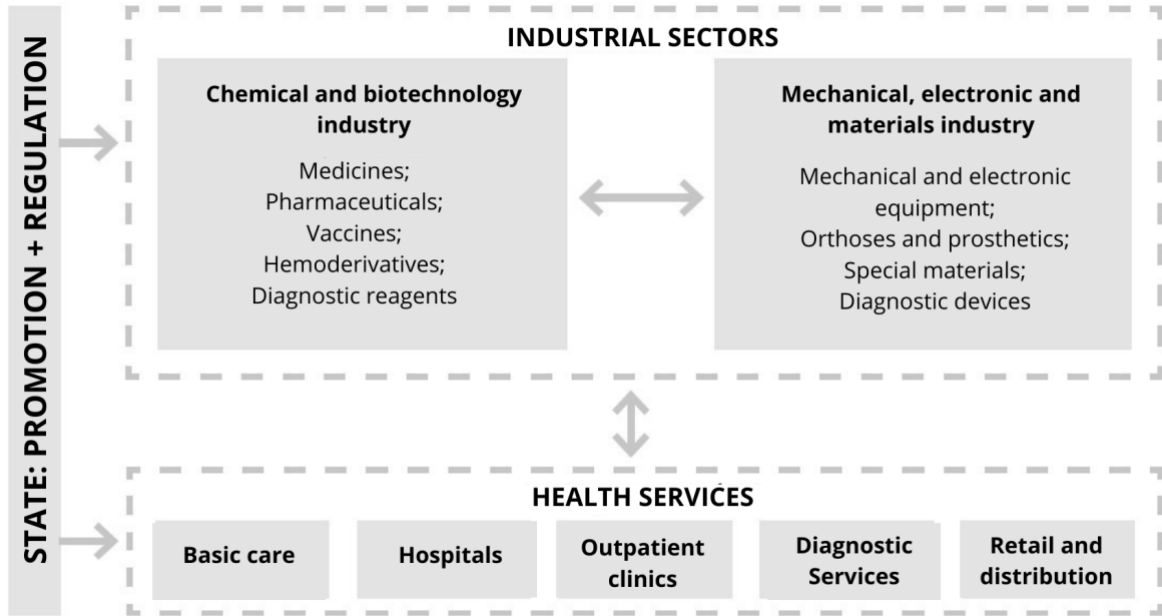
In reality, the impulse of information and communication technologies was never enough to generate the development of a range of new products capable of opening space for the accumulation of capital at the same rate as the new sectors that arose from the Second Industrial Revolution (Bolaño, 2002) – that is, the construction of machines by machines (Marx 1968). However, biotechnologies, which necessarily depend on ICTs, in both the fields of medicine and food sciences, when summed with other technological innovations (nanotechnologies, new materials, renewable energy sources), exhibit great breadth and potential for expansion. This explains the centrality of the industrial-economic healthcare complex and the legitimacy of the studies focused on it. It is also why it's fair to consider it as the focus of current development policies, although the understanding of development in Marxist studies is quite different.<sup>7</sup> Figure 1 was extracted from Gadelha (2021b) and presents what he calls the "morphology of CEIS in the context of the Third Technological Revolution".

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Davos, had been shaken, in 2015, by the repercussions of Piketty's (2013) book, which showed the sharp rise in income and wealth inequality in capitalist economies. The reaction, at the 2016 forum, was to introduce a radical agenda on the inevitability of what came to be called Industry 4.0 or the Fourth Industrial Revolution. Far from being a new techno-organizational paradigm, as part of the literature suggests, the new technological developments represent yet another intensification of the main features of the ICTs' paradigm, as supported by the concept of techno-economic paradigms proposed by Carlota Perez" (Cassiolato et al., 2021, p. 67). This reinforces the position defended in the present article.

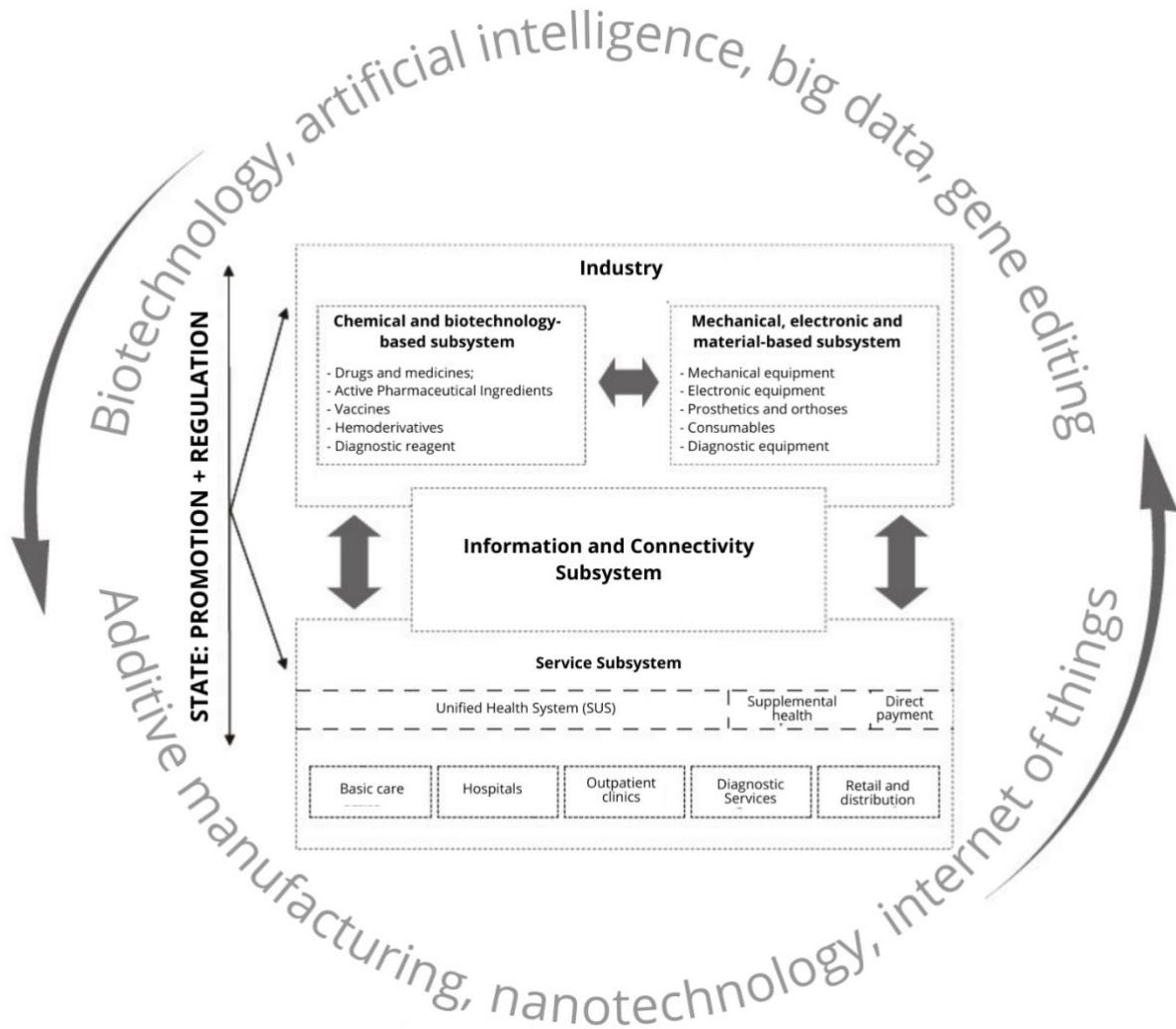
<sup>6</sup> Sabbatini and Fonseca (2021, p. 120), in the same edition of *Cadernos do Desenvolvimento*, somehow allude to this same movement. They point to "the technological revolution, beginning with the so-called 'Third Industrial Revolution' of the 1980s, based on the expansion of microelectronics and telecommunications; and deepened, spread and expanded to other fields of knowledge after the 2010s (for example, artificial intelligence, biotechnology and nanotechnology), resulting in the so-called 'Revolution 4.0' as one of the relevant processes experienced by capitalism in the last decades. In reality, the biotechnology revolution dates back at least to the beginning of the century, with the landmark Human Genome Project, while the definition of the Third Industrial Revolution already encompassed nanotechnologies, new materials, and other innovations. However, one can rightfully consider information and communication technologies as the foundational element, stemming from microelectronics and the advancements in cybernetics and computing, which, from the perspective of the history of technology, can be traced back to the wartime and post-war eras.

<sup>7</sup> For an excellent analysis on Marx's idea of development, see Bonente (2016).



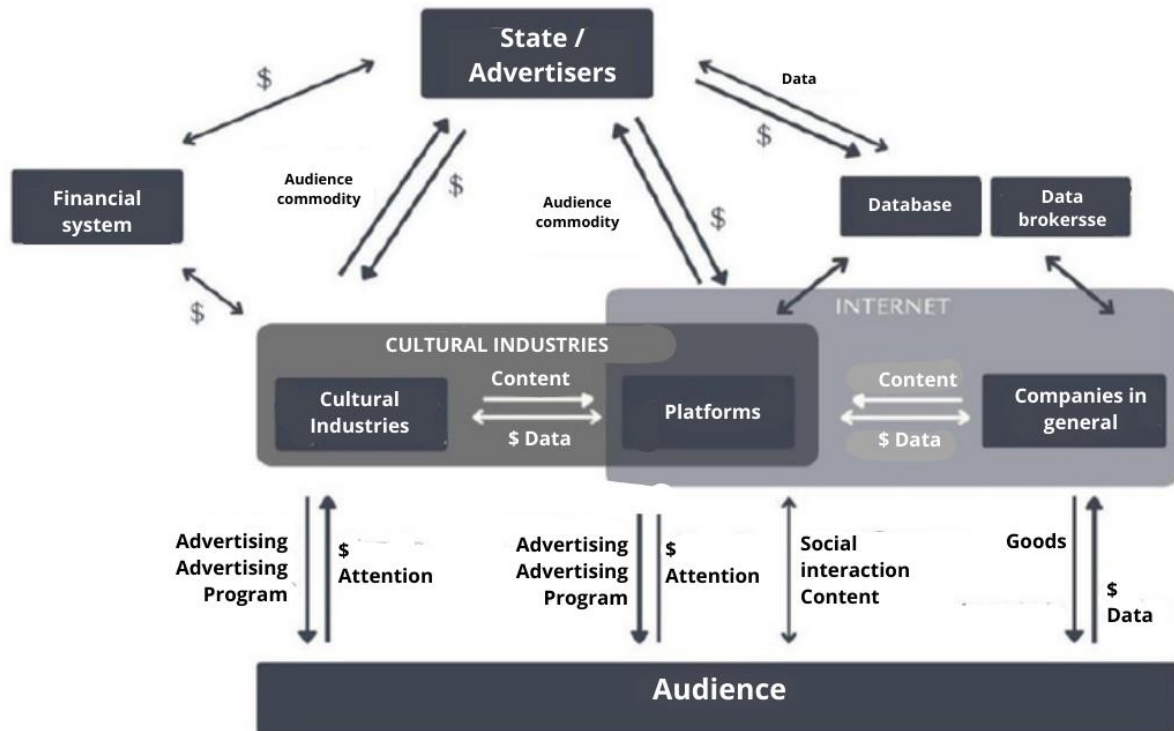
*Figure 1.* Morphology of the Industrial-Economic Healthcare Complex in the context of the Third Technological Revolution. Source: Gadelha (2021b, p. 39).

The author subsequently advocates for the need to further understand the complex at the heart of what he refers to as the "Fourth Technological Revolution," which, in our view, merely represents the submission of the entirety of the complex to the information economy's logic of accumulation, within the context of the second phase of the Third Industrial Revolution, as illustrated in Figure 2, extracted from the same source material.



**Figure 2.** The Industrial-Economic Healthcare Complex 4.0. Source: Gadelha (2021b, p. 42).

What Figure 2 adds to Figure 1 is the “subsystem of information and connectivity”, which performs the mediation between the truly industrial sectors and the service industry, further highlighting the financing instruments of the latter (Brazilian Unified Health System, health insurance and direct payment), which speaks to the problem of financial management of the set as a whole. If we compare this last figure with the analysis charts developed throughout the years by César Bolaño for studying the culture and communications industries – of which we selected the latest example here (see Figure 3), referencing digital platforms (Bolaño et al., 2022) – one can note the lack of a foundational element from the point of view of the political economy of communications and of culture, constituted by the public or, in this case, by the end recipients of the social policies and of the goods produced inside the complex.



**Figure 3.** Analysis model of the new structure of social mediation. Source: Bolaño et al. (2022, p. 15).

Although the constructive methods of both diagrams differ, given the specific items of interest in each analysis, they can evidently complement one another. Actually, the set of large squares at the center of Figure 2 exhibit a similar structure to those that are used in Figure 3 to define the functions of the Culture Industry and the Internet Economy as mediating social structures, which include content platforms, whose importance in the current mode of regulating capitalism is summarized by Bolaño et al. (2022, p. 13) as follows:

From the economics point of view of economics, digital content platforms are key agents of merchandise realization by way of direct advertising, in addition to being a dynamic niche for the accumulation of capital in the Information and Communications Technology (ICT) sector [...] From the point of view of politics, digital platforms have become a privileged realm for the production and circulation of messages, therefore of ideological disputes, with a significant influence of political and electoral processes. In the cultural perspective, these agents have become the main entry point and regulator of citizens' connected experiences, promoting individualistic values and attitudes that intensify neoliberal subjectivity.

The central nucleus of this system of social mediation coincides with the “subsystem of information and connectivity” put forth by Gadelha (2021b), which essentially acts in accordance with the logic of the digital content platforms, making up large databases that

interest all active economic agents in the global culture system as well as the State, integrating the two major functions of the Culture Industry (publicity and propaganda). The latter, on the other hand, is situated at the same level as institutions that, again in Figure 2, constitute the links between the "subsystems of services" and their end recipients. Of course, the similarities cannot be stretched too far, since healthcare institutions' public service functions do not align with the two aforementioned functions of the cultural system. Despite having gratuity as a common aspect in most cases, the funding models and social dynamics are quite distinct.

Nonetheless, the logic behind the production and maintenance of computer databases in general is a central aspect in both cases, bringing together the interests of all individual capital in competition with one another that need to interact with consumers (directly, via publicity or through purchases made in the public sector), of the different organized sectors that compete for political power, of the State and of those responsible for social control and surveillance,<sup>8</sup> as is the case of global corporations – especially North American ones – known as digital platforms, which thereby take on a central role not only in the global culture system, strictly speaking, but in the regulatory mode as a whole.

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<sup>8</sup> Even though these aspects are present in the report published in the *Cadernos do Desenvolvimento*, for example, in the interesting chapter written by Lastres et al. (2021), the centrality given to Shoshana Zuboff bestseller (2020) and the lack of references citing studies on the political economy of information, communications and culture expose the limits of the analysis when it comes to this specific knowledge frontier. For a critique of Zuboff, see Martins (2022).

## 5. Final thoughts

The authors of the report, armed with a scope of references of a developmentalist inclination, strongly influenced by Furtado, advocate international, interinstitutional, collaborative production strategies aimed towards the "internalization of technology platforms in Brazil, which, for example, would allow the country to have the capability to produce Covid-19 vaccines with a high level of responsiveness, in the face of global disputes" (Gadelha et al., 2021, p. 293). At other moments throughout the edition, different authors analyze the advances related to what they call "industry 4.0" or "the Fourth Technological Revolution" on Brazil's Unified Health System (SUS), the Industrial-Economic Healthcare Complex (CEIS), telemedicine, etc. They go into possibilities and challenges which are beyond the scope of this article, but it's worth citing, as a case in point, the following excerpt about the medical doctor's work:

We should also call attention to the work of medical doctors in relation to healthcare providers, be they hospitals, health insurance companies, or even digital platforms offering telemedicine services. If, on the one hand, physicians benefit from the provider's promotion and reputation to ensure a steady flow of patients, on the other hand, due to the power asymmetry in negotiation between the parties, there is a chance that the former will subject themselves to providing services without being formally employed, working flexible on-demand shifts and receiving low compensation for the services rendered. (Maldonado & Cruz, 2021, p. 180)

Whereas the last quote in the previous section referred to the collective labor involved in the production of vaccines, in this case, the authors are talking about the subsumption of a doctor's work by the platform company operating in the healthcare field.<sup>9</sup> The platformization of the economy has globally served the processes of subsumption of intellectual labor and precariousness of working conditions in general, of unloading the costs of the structural crisis onto the working class, and as a powerful enhancer of processes of concentration and centralization of capital across various markets, not just the more obvious content platforms. It's a well-known fact that healthcare has been a space for the expansion of capital throughout the entirety of the neoliberal period up to this day. In the turn of the century the Human Genome Project made it clear and the Covid-19 public health crisis once again proved, to dramatic effect, how we are facing what has been perhaps the greatest battle for the expansion of capital in the 21<sup>st</sup> Century on the new frontier of wealth accumulation: the

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<sup>9</sup> And also by hospitals and especially health insurance providers, which have sophisticated platforms for controlling labor.



human body. And digital platforms, in the way that have been developed thus far, under the control of monopoly capital, are a powerful tool in that direction.

At present, the idea of a pact that could ensure inclusive and ecologically sustainable development, which makes the moral survival of capitalism possible, with its inherent tautological logic of valuing value, is extremely problematic. The reason is because "development is a process of complexifying being; of expressing and manifesting its essence. Applied to capitalist society, this understanding development involves an increasingly broader and more profound expression of the essence of capital" (Sá Barreto, 2022, p. 204).<sup>10</sup>

However you look at it, although Gadelha envisions "a new developmentalist State that learns from past experiences and past mistakes" (Gadelha, 2021b, p. 44), which is "dynamic and with a strong sense of social equity" (Gadelha, 2021b, p. 46), the idea of a virtuous process of economic development, capable of providing long term solutions to the inherently contradictory capitalist system, is one that is proving increasingly outdated, especially if one observes the current crisis in the imperialist system itself, demoralized after the military fiasco in Afghanistan and the hardships, particularly in Europe, resulting from the economic war against Russia (Bolaño, 2022). The issue becomes even more complex when we think about peripheral countries like Brazil. After all, "if political economy is made on the practical level and in measures to manage the problems of capitalist reproduction (economic policy), the critique of political economy has to be conducted as a revolutionary practice" (Medeiros & Bonente, 2021, p. 110).

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<sup>10</sup> Specifically in regards to the ideal of development with environmental sustainability in particular, Sá Barreto (2022, p. 206) emphasizes that "when economic development is positioned as a prerequisite for assertive ecological mobilization, what is essentially being done is blocking the management of climate issues from the get-go."

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