A Study of the Digital Media Environment

via the Marxist Labor Theory of Value:

Focusing on the Value and Price of Digital Information Commodities

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Jang-Ryol Yun

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Supervisor: Prof. Dr. Klaus Beck

Second examiner: Prof. Dr. Alexander Görke

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Abstract

This study examines the value and price of digital information commodities, which are increasing in line with the advancing generalization of digital technology, via the Marxist labor theory of value, and explains how digital information commodities are produced, consumed and distributed based on this examination. We focus on the Marxist perspective, because it explains the inherent value and price of commodities in terms of the magnitude of social labor time involved, and through this, goes on to analyze the capitalist political and economic system as a whole. In this context, this study explains why these commodities are valueless goods due to the very innate characteristics of digital information commodities, and agrees with the adjacent assertion that the price of these commodities is a Marxist monopoly price. This connected analysis is supported by publications and numerous practical reviews, pinpointing how valueless digital information goods are commodified through state interventions such as intellectual property rights, and how these commodities are actually formed and maintained at a Marxist monopoly price. In the process of this analysis, we could see that mainstream media economics, ones characterized by actively embracing neoclassical economics, and to be more specific, those relying on the utility theory of value, as well as those advocating the arguments of the so-called ‘political economy of media’ which, while explaining the importance of knowledge and information via a Marxist labor theory of value, can yet be differentiated and contrasted from it. In other words, this study explains the digital media environment more fundamentally and concretely, centering on the fact that digital information commodities are of no value, unlike the existing approaches mentioned above, while also suggesting, via the knowledge gained, further implications for media and communication studies in general.

Zusammenfassung

Diese Studie untersucht den Wert und Preis digitaler Informationsware, die im Zuge der fortschreitenden Verbreitung der Digitaltechnik steigen, anhand der marxistischen Arbeitswerttheorie und erläutert basierend auf dieser Untersuchung, wie digitale Informationsware produziert, konsumiert und vertrieben wird. Wir konzentrieren uns auf die marxistische Perspektive, weil sie den inhärenten Wert und Preis von Waren in Bezug auf die Größe der gesellschaftlichen Arbeitszeit erklärt und damit das kapitalistische politische und ökonomische System als Ganzes analysiert. In diesem Zusammenhang erklärt die vorliegende Studie, warum digitale Informationswaren aufgrund ihrer ureigenen Charakteristika wertlose Güter sind und stimmt der Auffassung zu, dass der Preis dieser Waren ein marxistische Monopolpreis ist. Diese Schlussfolgerung wird durch Studien und zahlreiche Überprüfungen in der Praxis unterstützt, welche aufzeigen, wie wertlose digitale Informationsprodukte durch staatliche Eingriffe wie geistige Eigentumsrechte zu Waren werden und wie diese Waren tatsächlich zu einem marxistischen Monopolpreis gebildet und erhalten werden. Im Verlaufe dieser Analyse kommen wir zu einer differenzierten und teilweise gegensätzlichen Perspektive zum einen gegenüber der Mainstream-Medienökonomie, die sich durch eine aktive Übernahme der neoklassischen Ökonomie auszeichnet, insbesondere derjenigen, die sich auf die Nutzentheorie des Werts stützt, sowie zum anderen gegenüber denjenigen, die die Argumente der politischen Ökonomie der Medien vertreten, welche die Bedeutung von Wissen über eine marxistische Arbeitswerttheorie erläutern. Mit anderen Worten, diese Studie erklärt das digitale Medienumfeld grundlegender und konkreter als jene Theorien, wobei sie ausführt, dass digitale Informationsware im Gegensatz zu den oben erwähnten bestehenden Ansätzen keinen Wert besitzt, während sie gleichzeitig weitere Implikationen für die Medien und die Kommunikationswissenschaften im Allgemeinen vorschlägt.

Contents

List of Abbreviations

AP	Associated Press
API	American-Press-Institute
ARD	Arbeitsgemeinschaft der öffentlich-rechtlichen Rundfunkanstalten der Bundesrepublik Deutschland
BLM	Bayerische Landeszentrale für neue Medien
B2B	Business to Business
B2C	Business to Custom
CPC	Cost Per Click
CPE	Critical Political Economy
CPEMC	Critique of the Political Economy of the Media and Communication
CPM	Cost Per Millennium
CPS	Cost Per Subscriber
DB	Data Base
DVB-T	Digital Video Broadcasting Terrestrial
EC	European Commission
ERP	Enterprise Resource Planning
EU	European Union
GG	Grund Gesetz
GEMA	Gesellschaft für musikalische Aufführungs- und mechanische Vervielfältigungsrechte
IPTV	Internet Protocol Television
KBS	Korean Broadcasting System
KEF	Kommission zur Ermittlung des Finanzbedarfs der Rundfunkanstalten
KEK	Kommission zur Ermittlung der Konzentration im Medienbereich
KDG	Kabel Deutschland
KPF	Korea Press Foundation
KPOeMK	Kritische Politische Ö konomie der Medien und der Kommunikation
MBC	Munhwa Broadcasting Corporation (in South Korea)
MEW	Marx Engels Werke
NLA	Newspaper Licensing Agency
OLG	Oberlandesgerichte
PEM	Political Economy of Media
PMG	Press Monitor GmbH
PP	Program Provider
UPI	United Press International
UK	United Kingdom
UKBW	Unitymedia Kabel Baden-Württemberg
SBS	Seoul Broadcasting System (in South Korea)

SO	System Operator
SZ	Süddeutsche Zeitung
taz	Die Tageszeitung
VG Wort	Verwertungsgesellschaft Wort
ZDF	Zweites Deutsches Fernsehen

1 Introduction

The ongoing technological revolution that has been developing in recent decades, especially the computer itself which has been rapidly spreading throughout all fields of life since the 1980s, as well as the rapidly expanding information and communication technology since the mid-90s, all have brought about fundamental changes in most areas of human life. These general and indeed radical changes raise many theoretical questions that need to be clarified. For example, what is science and technology; what motivates it or what causes it to develop so rapidly; and how will it ultimately pan out socially and historically. In addition, changes in science and technology development, called the “information and communication revolution” or the “digital revolution,” raise practical issues to be addressed, especially in the industrial sector. Diagnosis and response measures are being discussed for digital industries, such as just what the digital industry is, how the structure of production, distribution and consumption is changing, and what profit models should be applied.

This present study focuses on digital information commodities in order to properly understand the digital media environment, and among several contenders, especially the digital media industry. Digital information commodities refer to media products produced and, for the most part, consumed digitally; for example, e-books, movies, music, and the like. These digital information commodities have the characteristic that they can be easily copied and transmitted once produced. Therefore, it seems almost impossible, even should one so desire, to technically block the reproduction of these digital information commodities. To this end, however, legal devices to restrict copying in the digital environment are increasing, and unauthorized copying or transmission of digital information commodities is recognized as, and considered as an illegal act. And now, more and more consumers and users are willing to pay for digital information commodities. On the other hand, digital information commodities are commercially traded while forming and maintaining a certain price in the digital media market. The company Blendle, for example, provides digital news via email; and in an email I

received recently, an article by Süddeutsche Zeitung is selling for 0,79 euros and an article from Der Tagesspiegel for 0,39 euros. 'Die Eiskönigin' ('Frozen') movie on Amazon prime video costs 3,99 euros to rent and 11,99 euros to buy. In this way, digital information commodities are sold at a certain price, and it seems to some extent that monetary payment is the usual procedure in the digital market. Nevertheless, there is still a great deal of free content in the online world; accordingly, as is to be expected, there are voices calling for even stricter regulation. As digital technology becomes common, some digital information commodities are sold at a certain price, however, some others are definitely not paid for. So, the digital environment is an opportunity for many a company, but represents a crisis for many others. In this regard, we would like to examine how the price of digital information commodities, which are reproduced at no additional cost once produced, are determined and maintained today.

Research on the price of digital information commodities has already been conducted by many media scholars. In particular, media economics, which relies heavily on general economics, has already studied the prices of media products such as newspapers (content), as well as the prices of various information commodities such as books, movies, and music (Kiefer, M. 2001; see also Picard, R. 1989; Heinrich, J. 1995; Albarran, A. B. 1996; Wirtz, B. W. 2000; Karmasin, M. 2003). Therefore, the analysis of the price of digital information commodities can also be presented from, and compared to existing positions and approaches. For example, media products have a truly special cost structure unlike general goods or services exchanged in the market (Kiefer, M. 2001, p. 165). And it is explained that digital information commodities have a high fixed cost and near zero marginal cost (Dewenter, R. & Rösch, J. 2015, p. 23). Thus, as such, the price of digital information commodities produced and traded (exchanged) in the digital media market must seem to have been explained to a great extent. However, the price of digital information commodities, which starts the subject of our research, and one not so facilely explained due to certain complications, refers initially to the inherent price (or original price) of these commodities. In this case, the 'inherent price' refers to the size of the value included in the product, and not the selling price of the product set by the company in order to sell the commodity. For example,

the fact that commodities exchanged in the market have a certain price means that these commodities (objects) have the same exchange value when they are exchanged. Of course, the value is invisible to our eyes, but in a capitalist society where the exchange of commodities is routine, the various exchange values of the same commodity also have to constitute exchange values for each other.[1] Moreover, economic theory explains that in a society where commodities are exchanged in the market, these commodities have values as well as prices (Weber, T. 2012, p. 2).[2] Thus, against this background, many economists have tried and are still trying to explain the magnitude and degree of the value contained in commodities. This study is an effort to understand more fully the economic system in which commodities are exchanged, and this through an analysis of the inherent (original) value of commodities; and furthermore, as an attempt to explain more clearly the digital environment in these current days, given the ever-expanding nature of digital technology.

In this regard, we can first focus on the study of 'inherent price', that is, the value of media products as explained in media economics. However, the study of specifically 'commodity value' may seem unfamiliar to media economists. This is because most of the basic concepts of economics, which the usual media economics relies heavily on, are taken from neoclassical economics (e.g. Picard, R. 1989; Heinrich, J. 1995; Albarran, A. 1996; Wirtz, B. 2000; Karmasin, M. 2003: Kiefer, M. 2001). Neoclassical economics explains, basically, that the value of a commodity is determined by its usefulness (Chang, H. 2014, p. 87). In economics, this is called the utility theory of value.[3] Today, most media economics has analyzed media products through the basic

[1] For example, if a chair can be exchanged for 2 sheets of linen, and on the other hand for 100 eggs, then one must also be able to exchange 2 linen sheets for 100 eggs (Heinrich, M. 2005, p. 39).

[2] In economics, theories explaining the value and price of commodities are largely truncated into two major categories: utility theory of value and labor theory of value (Weber, T. 2012, p. 2).

[3] Neoclassical economics uses the utility theory of value, which states that the value of a good is determined by the marginal utility experienced by the user. This is one of the main distinguishing factors between neoclassical economics and other earlier economic theories, such as Classical and Marxist, which use the labor theory of value where value is determined by the labor required for production (Chang, H. 2014, pp. 84-96).

concepts of neoclassical economics.[4] Therefore, most of the studies on the price and value of media products explained in media economics are presented from the perspective of microeconomics. In other words, price research on media products focuses on the selling price set by individual companies, and their main research focuses on the activities of individual consumers and companies (e.g., Kiefer, M, 2001, pp. 305-311). In line with this, the value of media products is still explained generally in terms of utility. In this frame of reference, media products are compared to heating oil (ibid., p. 143). However, the value of heating oil is very subjective and fluctuating, and the magnitude (size) of the value, in the last analysis, cannot be so objectively explained. Furthermore, in the real world, when it comes to media products, despite many having an extremely high utility (use-value), there are as well many useful ones that are free of charge alongside their pricey alternatives, and the giveaway of digital information commodities deserves to be observed as a phenomenon in its own right. In this respect, media economics, which accepts the view of utility (neoclassical economics), either neglects the analysis of the value of media products from the outset, or views the relationship between the value and the price of commodities as irrelevant and superfluous. But this may not in fact be irrelevant or superfluous.

Strictly speaking, in economics which studies the exchange of commodities, there is also a theory that has explained the size of the value contained in commodities as the amount of labor required to produce them. So, for them, the high or low price of a commodity indicates that the labor time for making it is either great or small (Heinrich, M. 2005, p. 39). This, however, enters into the realm of the labor theory of value in economics, in which Karl Marx's innovation away from classical economics toward a Marxist view of economics begins to grip; and he went on to explain the value and price of commodities in terms of socially necessary labor time (Marx, K. 1990, p. 129). Of course, neoclassical economics has now reacted by consigning Marxist economics to one of the outdated theories. However, Marxist economics is still unavoidable for

[4] Nowadays a variant of the utility theory of value is dominant within economics, the so-called theory of marginal utility (Grenznutzentheorie) (see footnote 6 of Heinrich, M. 2005, p. 40).

those who struggle fundamentally with capitalism and economic theory (see Heinrich, M. 2005, p. 31). And above all, we would contest that Marxist labor theory of value is the best economic theory to explain adequately the value of commodities, and including media products especially.

Moreover, in the study of the media and communication domains, the political economy of media (PEM) has also been at work studying the phenomenon of media and communication based on the basic concepts of Marxist economics (e.g., Mosco, V. 1996; Knoche, M. 1999). Recently, such studies have been continuing a certain Marxist academic tradition for interpreting digital capitalism by analyzing the value and price of digital information commodities, such as software, based on the Marxist labor theory of value (e.g., Fuchs, C. & Mosco, V. 2016; Chae, M. 2004; Kang, S. 2009). In this regard, it is appropriate and salutary that we examine how the value of digital information commodities once produced can be explained by the labor theory of value, rather than as if 'digital' were just another example of heating oil (utility theory of value). Our interest in the inherent value and price of digital information commodities based on Marxist labor theory of value is in order to demonstrate and confirm how the prices of these commodities, exchanged in the digital media environment, are formed and maintained. If we understand the inherent value (and price) of commodities exchanged in the digital market, we can better understand the production and distribution structure of digital media companies, and furthermore, we can go on to suggest regulatory policies for the digital media industry going forward. In addition, through the analysis of digital information commodities, it will be possible to understand in more detail the changing digital media environment and the yet ongoing digital-environment developments as they progress into, for example, a future where even artificial intelligence automation systems and quantum computing takes hold.

Of course, any media economics which accepts the point of view of utility (we might call this academic category 'mainstream media economics) also analyzes the digital media environment and suggests regulatory policies for it. However, in mainstream media economics, almost exclusively there has been only research on the market price

sold in the market; and it seems that the question of the so called ‘inherent’ price, that is, the underlying value of digital information commodities, has not sufficiently, if ever, been raised. In addition, media economics can be performed from various academic and theoretical perspectives (see Meier, W., Trappel, J. & Siegert, G. 2005, p. 203), and the effort to properly understand the real world should be one where there are no academic and theoretical limitations or exclusions. If this is granted, the Marxist labor theory of value can indeed help to explain in more detail the inherent price of digital information commodities, precisely with a contrarian view to the utility theory of value; and there are indeed at present more than a few people who are in fact conducting analysis of commodities exchange in capitalist society based on this theory. Although people who work with Marxist theories are classified as Marxists, and there is a pejorative view of them through colored glasses, no negative semantics will alter the real world in which commodities are exchanged. Namely, the capitalist real market goes on largely unchanged. In other words, when commodities are exchanged in the market, each of these commodities has a value and is exchanged for the same value. In summation, we are accordingly interested in the study of Marxist economists, and in those political economists of media who are discussing the value and price of digital information commodities (best represented by software) based on the Marxist labor theory of value. There are those who have not abandoned the analysis of the inherent price of digital information commodities exchanged in the digital market via the labor theory of value, and who still do try to explain the digital capitalist society against this backdrop. In this regard, we need to look in more detail at how the analysis of the value and price of digital information commodities can be explained in the Marxist labor theory of value, and not necessarily exclusively in the terms of utility only. This is to examine if and how the argument of mainstream media economics, which has so far compared the value of media products to heating oil, can be more thoroughly explained in the Marxist labor theory of value in an attempt seeking improvement; while at the same time, the purpose of this study is to examine how an analysis of the value and the price of digital information commodities can indeed provide an explanation for the digital media environment as a whole.

With the divergence alluded to above in mind, this thesis intends to address the following issues.

1.1 Discussion issue

Recently there have indeed been studies explaining the value and price of software based on Marxist labor theory of value. First, according to media scholars centered on the person of Christian Fuchs (2016), the explanation is as follows: the value of knowledge and information is realized at the level of the price of the product as it is sold at an advanced price in the market, even though software once produced can be easily and simply copied (reproduced) (see Fuchs, C. & Mosco, V. 2016). That is to say, knowledge and information are included in the price of digital information commodities such as software (Fuchs, C. 2008, p. 176), and knowledge and information become a means of generating capital profits (see Fuchs, C. 2016, pp. 54-70). This profit-making capital is a mechanism of modern capitalism, which is also explained in Marxist economics, if somewhat differently, especially and particularly in the labor theory of value (Fuchs, C. 2014a; see also Fuchs, C. 2015a; 2015b; 2016).

On the other hand and in differentiation, several Korean Marxist economists have argued that the value of software that is easily and simply copied (reproduced) should be more rightly and accurately defined as the social labor times required even for the reproduction of the commodity. This argument was derived from a debate involving certain Korean Marxist economists, the so-called the “Information Goods Value Controversy”. According to Chae (2004a), in reality, the first production requires a high cost, but the software once produced can be copied (reproduced) without any other additional cost or labor (Chae, M. 2004a, p. 223). Therefore, the value of a digital information commodity such as software is determined by the labor times socially required to produce a second unit, which is, in fact, not far from zero (ibid., p. 257). According to him, the fact that the value of digital information commodities is close to zero, but are nonetheless being sold at high prices in the market is then best explainable by Marxist monopoly pricing (ibid., p. 249). Furthermore, he adds, with the

development of science and technology, appropriately the productive power of modern society becomes increasingly more social; and commodities produced almost without cost according to the labor theory of value should not be considered to be exchanged as if they were normal commodities, and therefore must consequently, in this view, be distributed free of charge (ibid., p. 258).

A closer look at the two discussions (Christian Fuchs and Korean Marxists) leads to different positions and arguments, while integrating still the basic concepts of Marxist economics. Therefore, as the two discussions unfold, we raise several central issues, and as follows.

(1) Utility theory of value vs Labor theory of value

Before examining the grounds on which we feel the inherent value of commodities is better explained based on the Marxist labor theory of value, we need to look more closely at the utility theory of value, accepted and practiced by mainstream media economics. For example, it is necessary to examine how utility theory of value explains the value and price of commodities, and how, separately, mainstream media economics[5] explains the value and price of specifically media products. Through this inspection, it will be confirmed that research on the value of commodities has been neglected in mainstream media economics, and moreover, how research for the pricing of commodities has focused on the price of individual commodities from the point of view of microeconomics. On the other hand, it is necessary to defend how the inherent price of commodities is more adequately explained in the Marxist labor theory of value, which is the theoretical basis of this dissertation. And through this comparison, the study on the value and price of commodities suggested by classical Marxist economics will be seen to provide implications that confirm the necessity for a deeper study of the value of digital information commodities today. In other words, unlike the position of comparing the value of media products to heating oil, it is necessary to examine how

[5] In this dissertation, the academic tendencies that actively accept the utility theory of value are called mainstream economics and mainstream media economics.

the inherent value of digital information commodities can be explained, and better explained, in Marxist economics and what differences lie therein.

(2) Information and knowledge vs Valueless goods and monopoly price

We will further present discussions relating the assertions of two highly regarded experts, Fuchs and Chae, both of whom have recently explored the value and price of software. We focus on these discussions above all because their discussions look into and explain the value and price of software represented by digital information commodities within the Marxist labor theory of value. However, a closer look at the two discussions results in differing understandings, notwithstanding a convergence on the same theoretical basis and onto the same problem. According to Fuchs, even though software, once produced, can be easily and simply copied (reproduced), it is sold at a high price in the market because the value of knowledge and information is realized in the price of the commodities. In other words, the price of software has already included the value of knowledge and information, and it is accordingly argued that today knowledge and information are a means of generating a profit for capital. On the other hand, certain Korean Marxist economics, as represented for example by Chae, argue that the value of a software that can be easily and simply copied should generally be defined instead via the social labor time required to reproduce said commodity. According to Chae, in reality, high cost is required for the first production, but once the software is produced, it can be copied (reproduced) without any cost and labor. So, as the value of a digital information commodity such as software should rather be determined on a theoretical basis by the labor time required to produce also the second unit, and here it is virtually zero. In this respect, Chae defines copied digital information commodities as valueless things, and explains the selling price of those replicas when sold at high prices in the market decidedly in terms of Marxist monopoly price. In this regard, we need to examine the process of their discussion, how their positions and arguments differ from each other, and how the explanation of the value and price of software is presented in the Marxist labor theory of value.

(3) From software to digital information commodities in general

Through this review process, Chae's argument that portrays software that can be reproduced without any labor and cost as 'valueless things' seems indeed to be an explanation based solidly on the Marxist labor theory of value. According to Chae, the reason that valueless things such as software can be sold in the market is to be explained by the intervention of the state, embodied in such things as intellectual property rights. And the price at which these commodities are sold in the market is accordingly explained by the adjunct reference to Marxist monopoly pricing. We find ourselves seconding this insight, and that this explanation is truer to the Marxist labor theory of value, and will more effectively and more satisfactorily explain the value and price of digital information commodities. To this end, we will further look at just how media products have been analyzed in the political economy of media (PEM)[6] purporting to be that which embraces the basic concepts of Marxist economics. Of course, we might out of hand already consider that the claims of scholars such as Fuchs have little to do with the Marxist theory of labor value. However, in the broader political economy of media, scholars such as Nicholas Garnham (1976) and Vincent Mosco (1996), besides Christian Fuchs, have also been conducting research on intellectual property rights, monopoly, and the capitalist state, as well as research on media products themselves. For this reason, we will examine the research trends conducted in the political economy of media in more detail, and confirm the fact from their research results that media products can be defined as valueless things. On the other hand, given the fact that the prices of digital information commodities are monopoly prices, we need to look more closely at how these prices are formed and maintained. For example, when exploring payment strategies in order to sell their products in the digital news market, we will

[6] The study of the political economy of media (PEM) or the political economy of media and communication mainly refers to those who study media and communication from a critical perspective of approach stemming from the political economy in the English-speaking world (Wasko, J. 2014, p. 260). However, in the German-speaking world, this is classified as "critique of the political economy of the media and communication" (CPEMC) (Kritische Politische Ökonomie der Medien und der Kommunkation: KPOeMK) (Sevignani, S. 2016, p. 4). In this dissertation, all of these are defined as the political economy of media, in as much as they all lean on and borrow basic concepts of Marxist economics.

examine whether the prices of these products are actually formed as monopoly prices. Furthermore, if digital information commodities are sold at a monopoly price, competition to strengthen monopoly power in the market where these commodities are traded could be intensifying. In this regard, it is necessary further to examine the market in which, for example, digital TV contents are traded, and to examine the cases of conflict caused by monopoly prices and the competitive status of these companies. And at this same time, identifying how the capitalist state intervenes and functions in their competition and conflicts will give a more intrinsic understanding of the overall digital media environment.

(4) Analysis in which valueless things become commodities

Analyzing the value and price of digital information commodities from a Marxist point of view is to examine, above all else, implications contained in such an analysis for the entire digital media environment as a whole. For example, Karl Marx, whose goal was to explain the value and price of commodities more objectively, analyzed the capitalist mode of production and explained capitalist society in a comprehensive, holistic manner. In this regard, Fuchs, who argues that knowledge and information can be included among the means of production in modern society, explains that the role of knowledge and information is today more important than ever in the digital media industry, namely, in digital capitalism. However, Chae (2004a) on the other hand defines software as a valueless thing and argues that the high productive forces developed in the capitalist mode of production are in fact no longer compatible with the capitalist mode of production. In reference to such an assessment, if we propose that the value of digital information products is close to zero, what then can we provide as concrete explanations for the overall digital media environment? In other words, it is necessary to check how the changes and conflicts appearing in today's digital media industry can be explained from a Marxist perspective. One approach is to observe how the digital media environment is explained in Marxist economics, which explains the inherent value and price of commodities in a manner unlike mainstream media economics, whose explanations of the value and price of media products generally are

along the lines of utility. For example, it will prove necessary to examine how the strengthening of intellectual property rights and the intervention of the capitalist state in order to commodify such goods are detectable in the real world. Furthermore, it is necessary to examine how digital news, which can be easily copied and delivered once produced, has an impact on digital journalism broadly speaking. In this respect, our discussion examines the real world of capitalism in how media products, which were defined as public goods because of 'non-excludability' and 'non-rivalrous', are commodified in the digital media environment.

1.2 Overview of chapters

We look below at the general structure of each individual chapter.

Chapter 2 examines the discussions on the value and price of digital information commodities that have been conducted throughout media economics to date, and presents the framework of discussions to be developed later under chapter 3 with confirmation of our position.

Chapters 3 and 4 deal with two separate discussions explaining the value and price of software in Marxist labor theory of value. First, chapter 3 examines the approach claiming that knowledge is included in the price of software, and shows that this approach is ultimately irrelevant to Marxist labor theory of value. To this end, we will review the trends and approaches of those digital media environments that have emerged recently in the political economics of media studies represented by Christian Fuchs and Vincent Mosco, together with the approaches contained in them stating that modern capitalist society is based on knowledge and information.

Chapter 4 examines Chae's approach stating that the price of software is virtually zero because of the inherent characteristic of software, based on the Marxist labor theory of value; and goes on to show that his argument is appropriately developed and presented in the category of Marxist economics. To this end, we will show Chae's approach to

be one result of the debate held by Marxist economists in South Korea, the so-called "Information Goods Value Controversy", and outlines the origin and composition of that controversy.

In chapters 5 and 6 Chae's arguments will be more minutely and actively investigated, and his arguments will be expanded and applied to media economic studies in general. After accepting this view, chapter 5 examines Chae's arguments in terms of the relevant literature, and shows that his arguments extend and apply to digital information commodities in general. And in chapter 6, we will look at how his arguments are applied in the specifically digital media industry. Through the review of chapters 5 and 6 we can confirm that the value issues of media products, which has been dealt with so far largely via mainstream media economics, can be more thoroughly and effectively explained in terms of a Marxist labor theory of value.

In chapter 7 our analysis is built up on the facts of the value and price of digital information commodities identified in the previous discussion; that is to say, reproduced digital information commodities are valueless goods, and the prices of these commodities are Marxist monopoly prices. Based on this analysis, we will look at the implications of our analysis for the broader digital media environment in Marxist labor theory of value.

In the last chapter 8, the achievements and limitations of this study are presented.

1.3 Purpose of dissertation

This study aims at the following purposes. First, we agree with the position that the value and price of digital information commodities can be elucidated still in the classical Marxist labor theory of value. This our agreement is supported by a review of Fuchs' and Chae's research and approaches. The two discussions explain the inherent value of any software, first and foremost in terms of the amount of labor time devoted to producing a commodity. In this respect, we will look at their positions and arguments

and see how we can explain the value and price of digital information commodities via a Marxist perspective. Mine represents an alternative perspective that needs must reflect disputatiously on other approaches; without necessarily discarding their contributions.

Second, we offer explanations of the inherent value of digital information commodities and the price of these commodities in the Marxist labor theory of value which are different from the analysis of media products that have been dealt with in media economy studies so far. Furthermore, the analysis of the value and price of digital information commodities is to identify how valueless things can be produced as commodities and how they can be sold at high prices in the market, which analysis can then be extended to the description of the digital media environment. This approach demonstrates that media economics studies has so far remained within the scope of neoclassical economics. In this regard, through this study, we examine the implications of classical Marxist labor theory of value for media economy studies today.

2 Foundational Considerations

In this chapter, we will examine the Marxist labor theory of value, which is the basis for our discussion, and present more clearly how this theory explains the inherent value and price of commodities. To this end, above all else we need to present the scope of digital information commodities that are the subject of the discussion. And it will be confirmed that the characteristics of certain commodities, take software, that is, the fact that they are easily copied and transmitted once produced, represent the same characteristics that can be applied to digital information commodities as a whole, as well as to specifically media products. The subject of discussion and the characteristics of these commodities make it possible, moreover, to confirm that the main issues that have been dealt with in media economics so far are actually the value and price of commodities. At this juncture, it can be understood that mainstream media economics mainly explain the value and price of media products through the utility theory of value. And, although utility theory of value may go some way in explaining the value of commodities, the problems we raise in this study concern the inherent value of a commodity; and we will examine how the Marxist labor theory of value explains these problems more objectively and more comprehensively. In other words, when the value and price of digital information commodities are objectively explained, we will simultaneously be in a better position to examine how the digital media environment as a whole can be explained via the Marxist labor theory of value. To this end, above all, we need to distinguish more clearly the differences and characteristics between the utility theory of value and the labor theory of value.

2.1 Research method

This study focuses on the analysis of digital information commodities. This was a question posed against the backdrop of the economic reality that, once produced, digital information commodities are easily and simply copied. Thus, the analysis of the value and price of commodities can then serve as the basis for clarifying the dynamics of

movement within capitalism via the alternative of Marxist economics.[7] In other words, Marx's dissection of capitalist society begins with his analysis of commodities, and proceeds to explain the capitalist mode of production in its totality.[8] In this connection, Marx's research methods proceed from the 'concrete to the abstract'; and thereafter from the 'abstract (back) to the concrete'.

First, the research method of 'concrete to abstract' is confirmed in Marx's commodity analysis (see Heinrich, M. 2005, pp. 44-50). In this, the meaning of his term 'abstraction' involves the removal of all other aspects from the various elements of a concrete existing object in order to leave finally a specific single aspect (Moon Y. 2018, p. 379). Marx analyzes the nature of commodities and sees that both concrete labor and abstract human labor are involved in commodity production.[9] In this way, the research method termed 'from concrete to abstract' emerges, and is again then applied in reverse as the method of 'from abstract to concrete'. This is confirmed in Marx's *Capital;*[10] and Marx's concept of value obtained by abstracting human labor is established as the concept of surplus value. And through this, he comprehensively clarifies the mode of

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[7] "Political economy (this refers to the classical political economy of that time) has indeed analyzed value and its magnitude; however incompletely, and has uncovered the content concealed within these forms. But it has never once asked the question why this content has assumed that particular form, that is to say, why labor is expressed in value, and why the measurement of labor by its duration is expressed in the magnitude of the value of the product" (Marx, K. *Capital* Vol 1, 1990, pp. 173-174).

[8] According to Marxist economist Ernest Mandel (1976), "Everything flows in the last analysis from this operation of the law of value. So, the question whether it has any use at all in economic analysis is, therefore, as meaningless as the question whether you need the concept of basic particles (atoms, etc.) in physics" (Mandel, E. in *Capital* Vol 1, 1990, p. 41).

[9] Taking a chair as an example, carpentry does not produce value as carpentry. As carpentry, it produces a chair; rather, it produces value as human labor, whose product is exchanged with other products of human labor. So, carpentry produces value precisely as labor abstracted from its concrete manifestation as carpentry. Marx therefore speaks of value-producing labor as 'abstract labor' (Heinrich, M. 2005, p.46).

[10] According to Korean Marxist economist Kim Hogyun (2018), Marx distinguishes between his research method (Forschungsmethode) and a narration method (Darstellungsmethode) while writing the "*Critique of Political Economy*". At this time, the research method is the method of ascending from the concrete to the abstract, and the narrative method is the method of ascending from the abstract to the concrete. In other words, research is the process of starting from the concrete and reaching abstraction, and the description is the process of starting from the abstraction acquired through the research process and returning to the concrete (p. 5).

production of capitalism. In this respect, Marx analyzes the capitalist mode of production in *Capital*, but does not start with the concept of capital,[11] but rather begins with an analysis of commodities.[12] This is then a recognition method which starts with an analysis of abstract things and gradually expands the analysis to incorporate and focus on concrete examples (Moon Y. 2018, p. 379). That is, the main concept is extracted through a method starting from the concrete to the abstract; and then back again; the scientific concept is extracted through a method starting from the abstract to the concrete and thereafter back again to thus fully explain the totality of the reality (ibid., p. 380).

Accepting this methodology, we also will focus on one central aspect to comprehensively analyze the concrete digital media environment. In other words, our research will also start with an analysis of the value of software initially explained by Christian Fuchs as well as by Chae in their discussion of the value and price of digital information commodities. And successively we will critically examine Fuchs' argument, and show that his method of explanation is not in harmony with the Marxist labor theory of value. On the other hand, we will and do agree with Chae's position, that when software is copied, it can be reproduced without any additional labor. This agreement will be supported by applying this analysis of software to an extended explanation of the value and price of digital information commodities in general. To this end, we will display the real world in which digital information goods, which likewise often go on to be reproduced via subsequent literary reviews and reports, become commodities, mainly with the aid of intellectual property rights; and we will end with the ways in which such prices are formed and maintained, knowingly or unwittingly, as Marxist monopoly prices.

Through this review, we explain the value and price of digital information commodities

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[11] In the first three chapters of the *Capital* Vol. 1, only the commodity and money are mentioned, and capital is dealt with explicitly only from the fourth chapter onward (Heinrich, M. 2005, p. 37).

[12] "Our investigation therefore begins with the analysis of the commodity" (Marx, K. *Capital* Vol. 1, 1990, p. 125).

in a Marxist labor theory of value as follows: “Once produced digital information goods can be easily and simply reproduced. Therefore, the value (price) of these goods is close to zero. Nevertheless, the high prices at which they are sold on the market are in fact Marxist monopoly prices, that is, in accordance with his theory, that a price is formed by the buyer’s desire and payment abilities.” And then we need to look at the more concrete digital media environment from the aspect of this denomination of the value and price of digital information commodities. This will show that the value analysis of digital information commodities is the basis for explaining practical problems in the field of digital media, and that our discussion and analysis is in point of fact differentiated from mainstream media economics. This research method is also confirmed in the process of examining the contents of mainstream media economics in detail. In other words, rather than criticizing the content of mainstream media economics or their every position as a whole, we will look at just that one aspect at issue which they seem at pains to paper over, namely: how the value of media products is to be explained.

2.2 Subject and characteristics of the discussion

2.2.1 Scope of digital information commodities

Our main discussion concerns the value and price of digital information commodities. In this connection, the digital information commodity we are talking about refers to information products that exists in digital form. However, the question remains as to how far to encompass the range of digital information commodities. First, digital information commodities are terms that have been generally used to refer to a set of new goods that have emerged as a result of the information and communications revolutions. However, with the advancement of digital technologies and digital electronic networks, digital telephone services and various other services on the network have also emerged. For example, online shopping, online communities, and online information search services are now all present. If the totality of these digital

services, however, are recognized as digital information commodities, the scope becomes too broad. Therefore, in our discussion, digital information commodities refer to goods produced and distributed in digital form, focusing on and including digital news contents, digital TV program contents, software, music CDs, DVD movies, and e-books. Furthermore, our discussion can afterwards be extended pointedly to media products with characteristics similar to those of digital information commodities in general, and this paper goes on to deal with this possibility.

2.2.2 Characteristics of digital information commodities

Digital information commodities have in common that the information constituting their contents is produced and sold in a digitized state. And a digitalized state means that once produced digital information commodities are very easily and very simply reproduced and copied. So, for a digital information commodity once produced, anyone can copy the same content with a simple device such as a USB stick drive.[13] Today, you do not even need a memory chip to download and store via the web or app.[14] In other words, the production of digital information commodities hardly requires capital release and expenditure except for the first unit.[15] Accordingly, these digital information commodities require a relatively large production cost for the first unit of production, but this production cost seems to be completely independent of production from the second unit onwards.

On the other hand, in some cases, there are albums, software, or e-books that are produced and sold in only one unit (copy) at the request of a consumer. Since these are commodities produced at the request of the buyer, in such cases, the entire working

[13] It is the form of copying in a broad sense. Downloadable programs or apps are also a form of copying today.

[14] The fact that digital information commodities, once created, can be easily transmitted and copied is a unique characteristic of these products; Non-excludability and non-rivalrous.

[15] The additional costs required to sell the produced goods (i.e. marketing costs) are the sales costs, not the production costs of the goods.

time spent on one unit of product (the first copy) forms the total value of the commodity. Therefore, in our discussion, for the sake of consistency, such exceptional digital information commodities will be omitted.

2.3 Two theories addressing value and price

This study focuses on the value and price of digital information commodities. The problem of commodity value and price consists in, first of all, explaining the creation and exchange of value contained in commodities through economic theory in general, namely, through value theory, sometimes called price theory. As is well known, Adam Smith and David Ricardo, the leading theorists of classical economics, rightly discussed in their price theories initially, "Why water is cheap and why diamonds are expensive" (see Mazzucato, M. 2018 p. 40-47). In their publications, the value of an object is evaluated through exchange; and then, added to this, there arises the affiliated question of how one evaluates whether that commodity is cheap or expensive? And what is there in the world that creates value, and how is each value determined? They focused on these types of questions. And by way of response, Adam Smith went on to assert that the amount of labor required to produce an object determines its value.[16] This is the labor theory of value in classical political economy.[17] According to the labor theory of value, the value of a commodity is determined by the working times required to produce said commodity. Besides Adam Smith and David Ricardo, Karl Marx also viewed the value of commodities as attributable to the labor involved in producing them. However, Marx, unlike them, proceeded to offer the explanation that it is not the time spent by individual producers that alone creates value, but rather the 'socially'

[16] Adam Smith and David Ricardo were refuting the marginal utility that had already prevailed at that time by means of the labor theory of value (Heinrich, M. 2005, p. 40).

[17] Classical economics as scientific economics is established through Adam Smith's *the Wealth of Nations* (1776). Before classical economics was established, economics was a perception and policy through trade practices. In economics this is called mercantilism. The merits of the mercantile theory were formed based on the analysis of the distribution process; and the source of profit, or wealth, was found in the profits and losses of commodities. In other words, it becomes profitable by buying cheap and selling expensive. However, this mercantile theory also admits that not all goods owners can buy cheaply and sell expensively under normal conditions (Chae, M. 2015, p. 216).

necessary labor time.[18] In this way, in Marx's day, the labor theory of value was the recognized viewpoint used within political economy (Heinrich, M. 2005, p. 40).

However, economists such as Carl Menger, William Stanley Jevons and Léon Walras argued for the paradox of values defined through the concept of marginal utility, not labor (Weber, T. 2012, p. 2). Carl Menger viewed the value of commodities as being associated with marginal utility (Kiefer M. 2001, p. 131; see also Weber, T. 2012, p. 2). While a unit of water is crucial for an individual's survival, every additional unit of water decreases its utility, arguing thus that this is why diamonds and water differ in value (Weber, T. 2012, p. 2). He and others attempted to explain the price of commodities in terms of 'utility', especially 'the last unit's utility', as opposed to any labor theory of value. And based on marginal utility, they go on to explain the market price in terms of the relationship between supply and demand.[19] This theory of marginal utility is now basically the majority view of modern economics (see Kiefer, M. 2001, p. 36; Heinrich, M. 2005, p. 40); and as such, one that underlies microeconomics as well (Kiefer, M. 2001, p. 40). And in addition, the demand-supply theory, which says that market prices are defined by the correlation between supply and demand, is actually closely linked to the marginal utility theory and expands it (Chang, H. 2014, p. 88). After that development, the attendant theory of supply and demand served to unify the theory of production and the theory of marginal utility, as, for example, developed by British economist Alfred Marshall.[20] This position has become at present the dominant view of modern economics as a theory that views the value of today's commodities from

[18] "Socially necessary labor-time is the labor-time required to produce any use-value under the conditions of production normal for a given society, and with the average degree of skill and intensity of labor prevalent in that society" (Marx, K. *Capital vol.1*, 1990, p. 129).

[19] Since their time, supply and demand theory has gone on to unify production theory and marginal utility, such as that developed by British economist Alfred Marshall.

[20] The theoretical foundation of marginal utility theory was criticized early on by economists such as Piero Sraffa (1960). However, their academic tradition continued with some modifications by scholars such as John M. Keynes, Joseph Schumpeter and Milton Friedman (see Harman, C. 2010, pp. 72-101). In this respect, all schools and trends in modern bourgeois economics, different though they may be, agree on one point: they all reject Marxist labor theory of value (Мисвкевич, Л. 1971/Trans. Chae, M. 2012, p. 365).

the point of view of utility rather than labor time.

2.4 Marginal utility and the price of digital information commodities

Modern economics, also termed neoclassical economics, starts with the utility theory of value (marginal utility) (see Chang, H. 2014, pp. 87-88). According to this point of view, the satisfaction or benefits obtained from the consumption of goods or services is explained through the concepts of marginal utility and marginal cost of production. In this connection and state of understanding, any increase or decrease in the consumption of goods or services means a change in the amount of utility. Of course, the marginal utility theory is closely related to the supply and demand theory, which explains that the market price of a product rises or falls due to the changing correlation between supply and demand (Wolff, R & Resnick, S. 2012, p. 56). In value theory, it is the value of utility which explains the price of a commodity through marginal cost of production. In other words, marginal cost refers to the increase in production cost required to increase production by one unit; and it refers to the size of the utility of the last unit.[21] This academic tradition has been passed down as the dominant theory in media economic studies, and it appears as such in the analysis of digital information commodities as well as in specifically media products.

2.4.1 Analysis of media products in mainstream media economics

Mainstream media economics[22] explains the price of media products by actively accepting

[21] Marginal utility, which is the satisfaction that consumers feel when they consume one more unit of a good or service, decreases as the consumption increases. When a hungry person eats food, they feel full and satisfied at first, but as soon as they exceed a certain level, the satisfaction gradually decreases (see Encyclopaedia Britannica).

[22] According to Meier and his colleagues (2005), the study of media economics is the study of supply, demand, market, media companies, and media products primarily through economic principles in corporate and national economies. They divide the fields of media economics into the following categories: neoclassical approach, business approach, new political economy and new institutionalist approach, business ethics approach, industrial economic approach, sociological approach and capitalism critical approach (Meier, W., Trappel, J. & Siegert, G. p. 203). However, this study distinguishes media economics based on two value theories. This study calls all media economics based on utility value theory as mainstream media economics.

the concepts of marginal cost, based on the utility theory of value.[23] We can find this explanation in the literature of the German media economist Marie Kiefer (2001). First of all, she describes media products as "a scarce resource to satisfy people's desires in comparison to their needs", that is to say, she expresses herself in basic economic categories. On top of this she states, "in order to become a commodity, it must be possible to have human needs met, and the commodity's value is largely determined by the relationship between these demands" (Kiefer, M. 2001, p. 128). Hence, "the value of a good is not based on the good itself, but on the relationship between the particular good and our needs. And as this relationship changes, value must rise, fall, or even disappear" (Kiefer, M. 2001, p. 128; Menger, C. 1923, p. 108). This is akin to Carl Menger's position, explaining the value of media products as a "relationship of necessity," that is, a matter of utility. Mainstream media economics, which accepts the relationship of utility, explains the price of media products as follows:

> A distinction is made between variable and fixed costs. Business administration speaks of fixed costs when a type of cost does not react to changes in the level of employment and thus the output of goods produced; for example, such factors as depreciation for investments, interest on borrowed capital, management salaries, etc. As for variable costs, these indeed react to changes in the level of employment and thus the output volume, and change proportionally, progressively or degressively; examples include raw materials and operating resources, energy costs and transport costs, all of which usually count as variable costs.[24]

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[23] The concepts of marginal utility theory and marginal cost are explained in the scope of microeconomics in modern economics today. It is beyond the scope of this dissertation to critically examine the basic concepts of microeconomics or to examine the status of Marxist economics in modern economics more than is serviceable for this thesis. Therefore, this section is limited to showing the acceptance of microeconomic concepts in mainstream media economics.

[24] Unterschieden werden u.a. variable und fixe Kosten. Von fixen Kosten spricht die Betriebswirtschaftslehre, wenn eine Konstenart auf Veränderungen des Beschäftigungsgrades und damit des Output an produzierten Güten nicht reagiert (wie z.B. Abschreibungen für Investitionen, Fremdkapitalzinsen, Gehälter der Geschäftsführung); von variablen Kosten, wenn diese auf

> The fact that media content exhibits the characteristics of a collective good, i.e. it cannot be used up, nor is it used up in consumption, results in its own specific cost structure. The decisive difference to everyday consumer goods is the very high proportion of fixed costs in the total costs. The fixed costs are mainly incurred for the production of the intangible (or electronic) media product and its first materialization; so to speak, in the first copy of a newspaper, or the prototype or masterpiece of an audiovisual product such as a film or television game.[25]

Kiefer's description as cited above represents the cost structure of commodities defined in mainstream economics, and these explain the price of media products by borrowing the concepts of fixed cost and variable cost.[26] It adds that the price of media products, termed also as 'media content' has a 'special cost structure' in terms of the characteristics of these products.[27] In this regard, the special cost structure which she refers to is that the fixed cost is very high, and this structure is extended to most general (intangible) media products such

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Veränderungen des Beschäftigungsgrades und damit der Ausbringungsmenge reagieren und sich proportional, pogressiv oder degressiv veränderen. Rohstoffe und Betriebsmittel, Energie- und Transportkosten zum Beispiel rechnen zumeist zu den variablem Kosten (Kiefer, M. 2001, pp. 164-165 / Eng. Trans. Yun, J.).

[25] Die Tatsache, dass Medieninhalte Kollektivguteigenschaften haben, also unteilbar sind und sich im Konsum nicht verbrauchen, hat eine spezifische Kostenstruktur zur Folge. Der entscheidende Unterschied zu Konsumgütern des alltäglichen Bedarfs ist der sehr hohe Anteil der Fixkosten an den Gesamtkosten. Die Fixkosten fallen vor allem für die Produktion des immateriellen Medienprodukts und seine erste sozusagen „Materialisierung" in der First-Copy einer Zeitung bzw. dem Prototyp oder Masterpiece eines audiovisuellen Produkts wie Film oder Fernsehspiel an (Ibid., p. 165 / Eng. Trans. Yun, J.).

[26] In mainstream economics, when explaining the price of a commodity, it is explained in terms of fixed cost and variable cost. However, in Marxist economics, it is divided into constant capital and variable capital; and in further detail, fixed capital and circulating capital are divided. In the next section of this paper, we deal with the composition of values of commodities (constant capital and variable capital) as explained in Marxist economics. In this paper, it is necessary to clearly distinguish between the basic concepts presented by mainstream economics and Marxist economics. For example: value, composition of value, monopoly, monopoly price, etc. These conceptual differences are used to explain the real world from a differentiated point of view.

[27] Marie Kiefer (2001) explains that it is a property of collective good characteristics that they cannot be divided and cannot be fully used for consumption (p. 165).

as newspapers and TV.

The above explanation is also confirmed by the German media economist Jürgen Heinrich (1994), who describes the production of newspapers as the production of blueprints (Blaupausen-Produktion). According to Heinrich, "Newspapers are designed into prototypes every day and then copied; meanwhile the actual production of journalism is not consumed, which represents a fixed cost of production" (Kiefer, M. 2001, p. 165; Heinrich, J. 1994, p. 215). At this juncture, the cost structure of the publishing market and the TV market may be classified as follows: The publishing market incurs relatively high variable costs consisting of paper printing and physical transfer. So, the price structure of the publishing market pays a relatively higher variable cost (than the electronic media market). Here, variable cost and marginal cost are centered on price fluctuations (of paper newspapers) (see Dewenter, R. & Rösch, J. 2015, p. 23; von Rimscha, B. & Siegert, G. 2015, p. 35). Moreover, in the era of radio frequency and satellite transmission, the fixed cost of the TV market is yet relatively higher even than that of the publishing market (ibid.). We see this position as the price or cost structure of media products explained within mainstream media economics.

2.4.2 Characteristics and price of digital information commodities

The analysis of the prices of media products presented in mainstream media economics are expanded to account for the prices of digital information commodities in general. We can confirm the position of mainstream media economics in the literature of Ralf Dewenter and Jürgen Rösch (2015).

> For many media companies (the cost of information products) is primarily related to the cost of the first copy; the production of the first unit is very expensive, and all other units can be produced inexpensively or well-nigh for free. (…) The average cost of products such as movies, computer games, and software decreases as these products are more often distributed. (…)

> When the average cost falls sharply, companies that use large volumes have a significant cost advantage over companies with low production volumes.[28]

Like Dewenter and Rösch (2015), mainstream media economics describes the price of digital information commodities as "high fixed cost and near zero marginal cost".[29] This is actually the common and ordinary description of the price (value) of digital information commodities presented in mainstream economics. This explanation is the same for the prices of e-books, movies, computer games and software.

Those who explain the price of digital information commodities in marginal utility theory point out that in regard to digital information commodities, "Production of the first unit is very expensive, and all other units can be produced inexpensively or free of charge." This is mentioned in the characteristic feature that digital information commodities produced once, are produced inexpensively or almost free from the second unit on.[30] In other words, the very characteristics of digital information commodities are the same as those of original media products, but as a result of digital technology, the low marginal cost is now nearly zero. To this puzzling point, however, mainstream media economics tries to explain that these products are not normally exchanged like general commodities (Kiefer, M. 2001, p. 132). According to Kiefer (2001), "Generally, commodities traded (exchanged) on the market have two characteristics: the principle of exclusion and the economy of consumption.

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[28] Für viele Medienunternehmen sind vor allem die First-Copy-Costs relevant. Die Produktion der ersten Einheit ist sehr teuer, alle weiteren Einheiten können dann sehr günstig oder vielleicht sogar kostenlos hergestellt bzw. vervielfältigt werden. (…) Ebenso Filme, Computerspiele oder sonstige Software. Je öfter ein solches Produkt vertrieben wird, desto geringer sind die Durchschnittskosten. (…) Unternehmen mit großer Ausbringungsmenge haben bei stark fallenden Durchschnittskosten deutliche Kostenvorteile gegenüber Unternehmen, die nur einen geringen Output realisieren (Dewenter, R. & Rösch, J. 2015, pp. 24-25 / Eng. Trans. Yun, J.).

[29] Mainstream economics also explains the cost of commodities in modern capitalist society in terms of high fixed cost and low marginal cost (e.g., Shapiro, C. & Varian, H. 1999, p. 17).

[30] In this regard, media economist Hanno Beck (2011) asks the following question: Does how many people have actually read, seen, or heard the news have no effect on the price of production? Information is easily reproduced and distributed to others. So, it is difficult for information creators to sell information to different people multiple times (pp. 6-9).

However, media products are commodities that do not meet either of these two conditions. So, the price of media products has a special cost structure because of these characteristics". In other words, "Media contents (products) have a special cost structure because they cannot be divided, and because they are not used up in consumption" (Kiefer, M. 2001, p. 165).

But what exactly is the specific cost structure they are talking about here? Furthermore, how do they explain our original question relating to the inherent price of digital information commodities now in terms of their freely admitted special cost structure?

First of all, when they explain the prices of media products, they are almost always referring to a special cost structure because of the unique characteristics of these products. And to help explain the price of media products with these special characteristics they seem to have borrowed and inserted concepts such as 'cost disease'[31] or 'market failure'.[32] Of course, we do find very brief passages in Kiefer's or her colleagues' literature explaining how the prices of newspapers and broadcasts are formed and maintained.[33] However, this explanation is only an evaluation of individual commodities and does not mention how the price of media products is determined fundamentally. For example, economies of scale (Skaleneffekten), network effects (Netzwerkeffekten), lock-in-effects, and system products (Systemprodukten) proposed via the utility theory of value as well as mainstream media economics do not adequately account for the price of the commodity being exchanged. In other words, they account for high and low trend changes in price, but do not address what the basis for the exchange is. Furthermore, these theories explain only individual company price movements. However, the original value (price) of a commodity dealt with in the dissertation refers to the objective standard that is at the center of exchange when some

[31] The economic dilemma of cultural production described by William J. Baumol and William G. Bowen in 1966 is borrowed to explain the economic dilemma of media production. However, the cost disease of media production understands media institutions from an institutionalist point of view and explains media changes as institutional changes (Schnellmann R. 2013).

[32] Market failure is a concept within economic theory describing when the allocation of goods and services by a free market is not efficient (e.g., Heinrich, J. 1994, pp. 36-38).

[33] Jürgen Heinrich (1994) had focused primarily on how the prices of media products have changed (pp. 58-60). And Marie Kiefer (2001) mainly describes the cost structure and the price of a commodity which varies with quantity supplied (pp. 170-171).

commodities are exchanged. In other words, the price of a commodity can change due to supply and demand, but the central price relating to the change cannot be adequately identified simply via a theory of supply and demand.

In this aspect we need to look at the critical position of Marxist economics addressed to mainstream economics. According to Marxist economics, "Marginal utility does not explain and does not delve into how the inherent value contained in the commodity was formed."[34] In other words, in mainstream economics, where commodities prices are explained in terms of utility, the very subjective magnitude of utility cannot be objectively explained. Faced with this point, mainstream media economics focuses on the phenomenon of the selling price of media products, or explains only the composition of the costs included in the product. If mainstream media economics sees the value (price) of media products as determined by utility, they must also go on to explain the amount of said utility contained in the product. But as we see, mainstream media economics does not even raise the reason as to why the prices of media products are determined alternately to be cheap or expensive when they are exchanged in the market;[35] price research on media products focuses almost solely on the selling price set by individual companies. In this respect, they seem to have explained the price of specialized media products from the perspective of journalism, not from the perspective of economics. According to Kiefer, "for economists, the process of exchange was accomplished by buying a newspaper or magazine; but for journalists, only when the print media is actually used" (Kiefer, M. 2001,

[34] The value of a commodity in terms of the subjective preferences of sellers and buyers or the degree of usefulness to the subject is central to marginal utility theory. Marginal utility theory does not deal with the question of under what conditions the commodity that appears in the market is produced. Instead focus exclusively on considering the society of consumers (Мисвкевич, Л. 1971/Trans. Chae, M. 2012, p. 375). And according to Marx, "everyone knows, if nothing else, that commodities have a common value-form, which contrasts in the most striking manner with the motley natural forms of their use-values. I refer to the money form. Now, however, we have to perform a task never even attempted by bourgeois economics. That is, we have to show the origin of this money-form, we have to trace the development of the expression of value contained in the value-relation of commodities from its simplest, almost imperceptible outline, and on to the dazzling money-form (Marx, K. 1990, p. 139).

[35] Mainstream economics explains that price fluctuations are driven by supply and demand. However, it does not mention what is central to the price movement. Conversely, in Marxist economics it is the inherent price of commodities that is central to price fluctuations.

p. 144). “This difference is also valid because it is clear that the implementation of the exchange process in economic and in journalistic evaluation does not have to be exactly the same” (ibid.). From our point of view, Kiefer’s narrative in this case can be considered to have disjointed the viewpoint of economics and journalism; and mainstream media economics merely explains the price of media products (digital information commodities) of individual media outlets. However, from the point of ‘view of journalism’, the price of journalism and the value of digital information commodities are still not elucidated clearly or fully.

So far, we have looked at the main positions and arguments that mainstream media economics utilize to attempt to explain the price of media products (digital information commodities). They are actively and confidently accepting the view of utility in order to explain the price of media products. At the same time, in order to clarify the economic dilemma of media products, the perspective of economics is by and large omitted. However, the cause of the dilemma seems to stem from the inability to objectively explain the magnitude of the utility. In other words, as may be the case in referring to why diamonds can be sold so expensively, mainstream economists, on the other hand, still cannot explain the size of their objective utility.[36] Nevertheless, mainstream media economics, which actively embraces the perspective of mainstream economics, attempts to justify the value of digital information commodities as if analogous to that explanation which is performed in ascertaining the value of heating oil (utility).[37] In this regard, we need definitely to look at the value and price of digital information commodities which can be easily reproduced (copied) in terms of the labor time involved, not merely in terms of utility.

[36] According to Marxist economics, marginal utility theory equates value with use-value. As a result, this theory cannot account for the magnitude of the objective value contained in the product. However, in Marxist economics, value and use-value are clearly distinguished, and the capitalist mode of production is studied through the analysis of the value of commodities.

[37] We know that Kiefer’s comparison of media products to heating oil is a result of media economics’ active acceptance of marginal utility theory.

2.5 Marxist labor theory of value

Unlike and differentiated from utility theory of value, Marxist labor theory of value explains the nature of the value and price of commodities in its own way. To elucidate this, Marx saw that different individual commodities had the same exchange value when exchanged in the market.[38] And this Marxist analysis of commodities further develops the labor theory of value which was universal at the time. According to Karl Marx, labor theory of value is "an analysis of a form of value as well as of value size that bourgeois economics has never raised before" (Marx, K. 1990, pp. 173-174). In other words, Marxist labor theory of value goes the extra step to explain how the value of commodities exchanged is actually formed 'in the (capitalist) market,'[39] and focuses on certain aspects and issues that the marginal utilities approach overlooks. In this respect, our discussion will focus on clarifying the value and price of digital information commodities by a Marxist labor theory of value; and for this, it is necessary first to briefly examine the basic concepts of Marxist labor theory of value.

2.5.1 Value and price of commodity

In Marxist economics, commodities are the unity of value and use-value (Chae, M. 2015, p. 96).[40] In other words, a commodity contains two elements: value and use-value.[41] In order for an object to become a commodity, it must have a use-value that

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[38] Value consists in the exchange relation between one thing and another, between a given amount of one product and a given amount of another (Le Trosne, *De l'iteret social, in Physiocrates*, ed, Daire, Paris, 1846; p. 889; Marx, K. 1990, p. 126).

[39] Marginal utility explains capitalism's mode of production, yet not explaining how the original value contained in commodities is formed. In other words, they ignore the essence of capitalism's mode of production. Hence, marginal utility is called bourgeois economics, or mainstream economics, representing the capitalist class.

[40] A thing can be useful, and a product of human labor, without being a commodity. He who satisfies his own need with the product of his own labor admittedly creates use-values, but not commodities as such. In order to produce the latter (commodities), he must not only produce use-values, but use-values for others, i.e., social use-values (Marx, K. 1990, p. 131).

[41] In the theory of marginal utility, value and use-value are considered to be the same. According to the American economist William Koivisto, there is no conflict between use-value and exchange-value ... the consumer sets the ratio of the use-value of the marginal unit of a good to its price, equal

satisfies human desires. However, not all products become commodities just because they satisfy human desires (needs). Commodities must be objects 'produced' in order to be exchanged with the labor products of others. And the value of a commodity is such that "equal human labor" is objectified (Vergegenständlichung) as a commodity.[42] For example, five suits and one computer are clearly qualitatively different products. However, if they are exchanged with each other, there is a quantitative relationship in which one type of use-value is exchanged with another type of use-value. If there is a quantitative relationship between them, it means that something in common exists within the objects.[43] According to Marx, after removing the property of use-value from the things that are exchanged with each other, what is common to them is that they are all products of human labor. In this way, the production of an object includes abstractly identical labor, and this abstract labor defines the value of the commodity. So, for Marx, the value of a commodity is determined and measured by the amount of labor involved in the production of the commodity.[44] In short, the time required to make five suits and the time required to produce one computer are measured as the (equivalent) value of these commodities.

However, even though some workers may make the same suit or others the computer, the time required to produce them may differ due to differences in the skill levels of people, differences in labor methods (collaboration, division of labor, etc.), and various other differences such as working conditions. Here, Marx explains that it is not the working time spent individually by each producer that creates value, but the 'socially

for all commodities (Мисвкевич, Л. 1971/Trans. Chae, M. 2012, pp. 375~376; and see Koivisto, W. 1957, p. 434).

[42] Marx also see the value of commodities as accounted for by commodity-producing labor. As an objectification of "equal human labor", commodities have values. The magnitude of value is determined by "the quantity of the 'value-forming substance', i.e., the labor, contained in that particular article" (Marx, K. 1990, p. 129; see also Heinrich, M. 2005, p. 40).

[43] "As use-values, commodities differ above all in quality, while as exchange-values they can only differ in quantity" (Marx, K. 1990, p. 128).

[44] "By means of the quantity of the 'value-forming substance', we mean the labor, contained in the article. This quantity is measured by its duration, and the labor-time is itself measured on the particular scale of hours, days, etc." (Marx, K. 1990, p. 129).

necessary' labor time.[45] So, even if a producer makes a commodity in more time than socially necessary in respect to labor time, the value of the commodity is as much as the socially necessary labor time to make it. Conversely, even if a producer makes it in a shorter time than the average social time, the commodity also has only the value of socially necessary labor times.[46] To this end, Marxist labor theory of value is an objective law of value that operates regardless of human desire or intention.[47]

Therefore, the high or low value (price) of a commodity indicates that there is either much or there is little labor time involved in the making of it (see Marx, K. 1990, p. 131). In other words, the value of a commodity and its price are substantially the same, and the price is merely a form in which the value is expressed.[48] In this appreciation, the price of the commodity is never fixed, but constantly fluctuates.[49] For example, changes in the means of production, such as occurred in the industrial revolution, or now in the digital revolution, are the development of labor productivity. So, if the

[45] "Socially necessary labor time is the labor time required to produce any use-value under the conditions of production normal for a given society and with the average degree of skill and intensity of labor prevalent in that society" (Marx, K. 1990, p. 129). Therefore, what sets the Marxist labor theory of value apart from the classical labor theory of value of Adam Smith and David Ricardo is that it is not the labor time individually expended by isolated producers that creates value. Rather it is the "socially necessary labor time" that creates value (see Heinrich, M. 2005, p. 43).

[46] For example, let's say that person A spends 8 hours, person B 10 hours, and person C 12 hours to produce the same type of skirt. And suppose that the total amount of these products produced in society is three. Each of these people's personal labor is a part of social labor. At this time, the size of the value of this product can be defined as 10 hours. This is because it took a total of 30 hours of social labor to produce the three products, and an average of 10 hours of social labor to produce one skirt. Therefore, person B's personal working hours coincides with a socially necessary labor time. However, in the commodity world, the product of Person A who took 8 hours of personal labor, or the product of Person C who took 12 hours of personal labor are evaluated only as having a socially necessary labor time. In the above case, 10 hours is the socially necessary labor time, and it is this socially necessary labor time that defines the magnitude of the product value.

[47] Now, the conceptual distinction between marginal utility (theory) and Marxist labor theory of value has become clearer.

[48] The magnitude of value of a commodity is expressed in its price - and this is the only possibility for the magnitude of value to be expressed (Heinrich, M. 2005, p. 65).

[49] The magnitude of value of the product is changed by the development of labor productivity, that is, the extension or reduction of socially necessary labor time. Of course, the selling price of a commodity can fluctuate depending on supply and demand. However, in the market, the fluctuation of the selling price is driven by the price of production (Produktionspreise). Marx refers to the price of production, the center of fluctuations, in the labor theory of value.

average labor time requisite for society as a whole has decreased, the price of commodities will also fluctuate accordingly.[50] In this way, in Marxist economics, the value of a commodity is expressed as the price of that commodity. So, value theory is also price theory.[51]

2.5.2 Composition of value of commodity

Karl Marx considered that the value (price) of capitalist-produced commodities consisted of constant capital, variable capital, and surplus value (see Heinrich, M. 2005, pp. 97-130). This in turn suggests that the profit of capital is the surplus value exploited from workers. For example, tools such as scissors, sewing machines, and needles (labor means) are needed to make a skirt; additionally, materials such as cloth and thread (the object of labor) must be provided. These means of labor and the object of labor are collectively called the means of production. These means of production are consumed (used up or 'depreciated') to make skirts, and the value of these consumed means of production is transferred to the product itself. In the course of events, the price of the skirt is much higher than the price of the things involved in or consumed to make it. In other words, the value of a skirt is much greater than the value of the things consumed to make it. That difference is the part of the value newly created by making the skirt, which Marxist economics calls the "value product".[52] The sum of the value of the means of production and this "value product" constitutes the "value of commodity".

[50] Last year, for example, it took an average of 8 hours per worker per day to make one suit. However, this year, by changing the equipment and tools necessary for production, and changing the labor method, they made two suits in eight hours. If this happens, this year's labor productivity has increased by 100% compared to last year, doubling it. The higher the productivity of labor, the more material wealth produced by this same hour of labor. However, these profits are only temporary performances for those capital or individual sectors of industries that have implemented changes in the labor productivity. In other words, changes in labor productivity do not produce more value. Thus, no matter how much the productive forces change, the same labor, in which the same amount of time is used, always produces the same amount of value.

[51] The tendency to equate value theory and price theory is generally confirmed in economics (Weber, T. 2012).

[52] In mainstream economics, it is called "value added".

Schematically, this is as follows.

Value of commodity= paid value of the means of production + value product

The value of the means of production consumed in production does not change during the production process and is the capital invested to purchase the means of production. So, Marxist economics defines it as "constant capital (c)." Then, the value of commodity becomes 'constant capital (c) + value product'. At this juncture, the value product was produced by the workers; and furthermore, because the workers must be reproduced as labor power, a certain part of the value product is consumed as "wage". Marx calls the capital invested for the purchase of labor power as 'variable capital (v)'. And among the value products created by workers, the part excluding workers' wages (variable capital) is 'surplus value (s)'.[53] This is what constitutes the profit of capital. In this way, the value of a commodity is equal to 'constant capital (c) + variable capital (v) + surplus value (s)'.

Composition of value of commodity = constant capital (c) + variable capital (v) + surplus value (s)

Marxist economics describes strategies for capital to earn more profits through the construction of value of the commodity. One way is to increase surplus value (profit) by producing and selling a large number of commodities. And another is that capital can always reduce workers' wages (variable capital (v)) to increase surplus value (profit).[54] In the capitalist mode of production, the proliferation of value is eventually realized through the exploitation of labor power.

[53] Karl Marx calls surplus labor-time, that which extends beyond the labor time required to produce a commodity. The labor performed during this time is called surplus labor, and the value formed by this surplus labor is called surplus value (s).

[54] There are two basic possibilities for increasing the valorization of capital, which two Marx refers to as the production of absolute surplus value and the production of relative surplus value, respectively (see Heinrich, M. 2005, pp. 102-107).

2.5.3 Gap of value and price

In a capitalist society, the value of a commodity is the expression of the socially necessary labor time involved to produce the commodity, converted to and expressed in monetary terms. The value of a commodity is generally bound to be expressed in terms of price. However, there is no guarantee that the price of a commodity will necessarily express its value in its original (Marxist) meaning.[55] After defining the inherent value and price of commodities, Marx pointed out that the price of commodities in the market cannot necessarily be expressed in terms of their inherent value. In other words, not all prices of commodities represent precisely a corresponding magnitude of the specific value.[56] In addition, not all price fluctuations indicate corresponding fluctuations in the size of the value. There could arise a discrepancy or gap between the price of a product and the degree or size of its value. Thus, Marx never thought that the price of a commodity should be explained solely or exclusively in terms of value measured directly via labor times,[57] being as other considerations too play their part.

The discrepancy between the inherent value of commodities and the sale price is also confirmed by the average rate of profit described in Marxist economics. If a commodity

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[55] "The magnitude of value of a commodity expresses a necessary relation to social labor time which is inherent in the process by which its value is created. With this transformation of the magnitude of value into the price, this necessary relation appears as the exchange-ratio between a single commodity and the money commodity which exists outside it. This relation, however, may express both the magnitude of value of the commodity and the greater or lesser quantity of money for which it can be sold under the given circumstances. The possibility, therefore, of a quantitative incongruity between price and magnitude of value, i.e. the possibility that the price may diverge from the magnitude of value, is inherent in the price-form itself" (Marx, K. 1990, p. 196).

[56] "Although price, being the exponent of the magnitude of a commodity's value, is the exponent of its exchange-ratio with money, it does not follow that the exponent of this exchange-ratio is necessarily the exponent of the magnitude of the commodity's value" (Marx, K. 1990, p. 196).

[57] "This is the decisive difference between the labor theory of value emanating from classical political economists such as Adam Smith and David Ricardo, known as the founders of the labor theory of value, and Marx's value theory. Classical political economists attempted to explain prices from values measured in labor times. However, in reality, the labor theory of value was partially abandoned or took a compromised position in the fact that it is rather common that the price of a product does not match the value. However, Marx never thought that the price of a commodity should be explained "directly" as a value measured in labor times" (Kang, S. 2008, p. 16).

is sold “at its own value”, each sector of industry will have a completely different rate of profit (surplus value rate) (see Heinrich, M. 2005, pp. 144-148). In other words, if the price of the commodity expresses the value of the commodity as it is, there will be no need to strive for more profits. Capital, however, is only interested, in this regard, to multiply its capital as much as possible. Competition between capitalists and the pursuit of the highest possible rate of profit has two consequences. On the one hand, the price can go against the proper expression of value. And on the other hand, based on this price, all capital tends to yield the same average rate of profit or general rate of profit (Heinrich, M. 2005, p. 145). The commodity prices at the point where these average rates of profit are derived are called “price of production (Produktionspreise)” by Marx. And in the real world, the price of a commodity is defined by the price of production, not by its value. In this nexus, the price of production is the cost-price (Kostpreise: the cost of the means of production and wages engaged in commodity production), plus the average profit. So, although the price of a commodity does not seem to be sold according to its value, in fact, the price of production is still at the center of the fluctuation of the price. In other words, the size of the value still regulates and reflects the price of production. Furthermore, the fact that the rate of profit is equalized to the rate of general profit is nothing more than a redistribution of the total social surplus value.[58] In other words, in the affected society as a whole, since the total value of the commodity and the total price are the same, the law of labor value is maintained which states that the value of commodities is determined by the socially necessary labor time.

Marx, who pointed out discrepancies and differentiations between price and value, further pointed out the theoretical possibility of still having a price for an object that has no value at all. In other words, there exists an analysis and explanation in his theory stating that even goods put into production with no labor can have a price. Marx offered

[58] “Average profit is dependent upon surplus value: not the surplus value of the individual unit of capital, but rather from the surplus value produced in the economy as a whole, that is, from the surplus value of the total social capital. The equalization of rates of profit to a general rate of profit means nothing other than a redistribution of the total social surplus value” (Heinrich, M. 2005, p. 146).

several cases of how the prices of things of no value are determined.[59] One is fictitious capital (fiktives Kapital), such as stocks and bonds, and the other is the way land is priced.[60] In capitalist society, the law of value is being implemented through certain phenomena that seem to, or do violate this law of value.

2.6 Discussing the value and price of software

As noted above, Marxist labor theory of value explains the value and price of a commodity by the socially necessary labor time involved for the production of the commodity. Neoclassical economists estimate that the labor theory of value as advocated by older classical political economics is an outworn economic theory that has already elapsed or expired.[61] However, it is clear that Marx's *Capital* is still unavoidable and inevitable for those who wish to fundamentally wrestle with capitalism. This is because Marxist economics (unlike even neoclassical economics)[62] is based on the comprehensive value analysis of commodities, and thereafter goes on to explain the capitalist structure of production in its entirety.[63] Marxist economics,

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[59] "We must keep in mind, finally, that the prices of things that have no value in and of themselves – either not being the product of labor, like land, or which at least cannot be reproduced by labor, such as antiques, works of art by certain masters, etc. – may be determined by quite fortuitous combinations of circumstances. For a thing to be sold, it simply has to be capable of being monopolized and 'alienated'" (Marx, K. 1991, p. 772).

[60] "Things which in and for themselves are not commodities, things such as conscience, honor, etc., can be offered for sale by their holders, and thus acquire the form of commodities through their price. Hence a thing can, formally speaking, have a price without having a value. The expression of price is in this case imaginary, like certain quantities in mathematics" (Marx, K. 1990, p. 197).

[61] One also frequently hears from contemporary economists, insofar as they do not reject Marx's analysis entirely, that it is at best valid for the nineteenth century. And in the twentieth century, economic conditions have supposedly undergone such extensive change that Marx's theory is of no use which is why one hears so little of it in most economics departments (Heinrich, M. 2005, p. 28).

[62] Marginal utility theory only considers the society of consumers. For them, every economic process lies only in the evaluation of individually useful goods by individual consumers. … The advocates of marginal utility are hoping to conceal the essence of capitalist exploitation (Миськевич Л. 1971; Trans. Chae, M. 2012, p. 376).

[63] What I have to examine in this work is the capitalist mode of production, and the relations of production and forms of intercourse [Verkehrsverhältnisse] that correspond to it. (Marx, K. 1990, p. 90) The wealth of societies in which the capitalist mode of production prevails appears as an 'immense collection of commodities; the individual commodity appears as its elementary form. Our

for example, still spotlights the class relations of capitalist society, the relations of capitalists' competition for sustained capital proliferation, and the phenomenon of periodic economic crises. In this vein, Ernest Mandel (1976), a German Marxist economist, evaluates the importance of the labor theory of value something on the order of the inescapable need for the concept of basic particles in the area of physics.[64] In other words, Marxist labor theory of value represents the basis of Marxist economics, and furthermore, it is a value theory at odds with the marginal utility theory accepted by mainstream economics.[65] Marxist economics criticizes the marginal utility theory as follows: marginal utility equates value and use-value, and does not raise the question of where the market product stems from. For them, every economic process lies only in the evaluation of individualistic useful goods by individual consumers (Мисвкевич, Л. 1971/Trans. Chae, M. 2012, p. 375).

Accepting this objection, we then need to look at how Marxist labor theory of value can itself explain the value and price of digital information commodities. Because, with the development of digital technology, digital information commodities that can be reproduced at no additional cost once produced are overflowing and inundating the real world. In this situation, we need to examine under just what conditions these commodities appear in the digital market. And in particular, it is also to be noted that attempts to explain digital capitalism through the basic concepts of Marxist economics have been remarkably increasing in recent years. Among these studies, we can find discussions that explain the value and price of software in Marxist labor theory of value, among other things. They seek to clarify digital capitalism through an expanded analysis of the value and price of software as one example representative of digital

investigation therefore begins with the analysis of the commodity (Mark, K. 1990, p. 125).

[64] According to Ernest Mandel (1976), "Indeed, no coherent and consistent analysis of the capitalist economy in its totality, explaining all the basic laws of motion of that system, is possible without elementary principles organized around the value of commodities" (Mandel, E. 1990, p. 41).

[65] No part of Marx's theory has been more assaulted in the academic world during the last seventy-five years (from the time of Mandel's manuscript writing) than his theory of value. His bourgeois critics show a sharp class instinct here; for this theory is indeed the cornerstone of the whole system (Mandel, E. (1976) in *Capital Vol. 1*, 1990, p. 38).

information commodities. This is the same issue as attempting to explain the price of such commodities via the unique characteristics (non-excludability and non-rivalry) of media products (and digital information commodities) covered by media economy studies. And these are not merely explaining something resembling the value of heating oil in terms of utility, but rather explaining the value and price of these digital commodities in the amount of labor times spent to produce the software. Accordingly, in line with this, we will now proceed to compare and examine two arguments that attempt to explain the value and price of software.

3 Explaining the Value of Knowledge and Information Commodities

In chapters 3 and 4, we will look at the analysis of the value and price of software, one of many digital products explained in terms of a Marxist labor theory of value, and compare and examine two theoreticians, Fuchs' and Chae's claims in this regard. Fuchs and Chae both explain the value and price of software through basic Marxist concepts while analyzing the digital media environment. At this juncture, Fuchs explains the value and price of immaterial goods such as knowledge and information contained in software. However, Chae defines software itself as a product and thus analyzes the value and price of these products in terms of the amount of labor time required for software to be reproduced. We needed to look at the work of the two authors, how their interpretations differ on how the value and price of commodities are explained differently in the Marxist labor theory of value. To this end, first in chapter 3 we will focus on Fuchs's analysis of the value and price of digital information commodities represented by software, as gathered mainly from his publications. In section 1 of chapter 3 we will outline Fuchs' discussion and research trends. And we will look at how knowledge and information are defined as commodities in his discussion, and how they are privately owned. In order to understand this, in section 2 we will examine the characteristics of the software he describes, and confirm Fuchs' position as one explaining the value of these commodities in the Marxist labor theory of value. And in section 3, however, looking at Fuchs' explanation in more detail, we will confirm that his position in explaining the value and price of software is not conforming to the Marxist perspective. Furthermore, in section 4, starting from Fuchs' argument for arithmetically explaining the value and price of software, we will examine the fact that the problem, which Fuchs himself has referred to, is still unexplained. In other words, the value and price of commodities that can be reproduced at no cost due to the nature of software are, in the last instance, left unexplained via his interpretation of the Marxist point of view, which Fuchs claims serves as the basis of his analysis up to this point.

3.1 Fuchs' discussion and his research trends

Fuchs analyzes a digitalized modern capitalist society based on Marxist economics. According to Fuchs (2009a), "Modern society is an informational, more transnational society, and at the same time still an unequal capitalist class society" (Fuchs, C. 2009a, p. 397; see also 2008, pp. 105-120; 2013, pp. 414-425). Fuchs explains such a modern society using the concept of 'transnational information capitalism'. 'Transnational information capitalism' is more and more influenced by the production of knowledge and information in the subjective sense, and by networked information and communication technology in its objective aspects (ibid.). In other words, knowledge is produced and transmitted with the help of technology, but also consumed at the same time with the help of selfsame technology. As a result, new knowledge emerges, and knowledge spreads again with the help of technology transfigured and aided by yet again new knowledge. Fuchs explains this as knowledge and technology dialectically reinforcing one other (Fuchs, C. 2008, p. 104; 2009a, p. 391). Fuchs' argument is more concretely confirmed in his description of Internet media companies. Fuchs analyzes how Internet media companies such as Google and Facebook (now Alphabet and Meta) accumulate capital today, arguing that their high profits come from knowledge and information (Fuchs, C. 2012b, pp. 139-159; 2012c, pp. 42-48; 2015b, pp.26-41).

For Fuchs, digital Internet media companies are in truth digital capitalist economic systems in which knowledge and information are transmitted through networks, and this around the world (Fuchs, C. 2009b, pp. 69-87). This explanation is presented in his "Critical Internet Theory", in which Fuchs explains the relationship between the Internet and society. And he critically examines the problems that exist in these kinds of relationships. Thus, Fuchs summarizes and focuses on the role of knowledge and information to analyze how Internet media companies accumulate capital. According to Fuchs (2008), "the input of a computer is mental labor that is transformed by binary operations; its output consists of knowledge products that are an objectification of mental labor" (Fuchs, C. 2008, p. 173). So, "the driving force of the economy would be accordingly the production of knowledge today; and knowledge that is part of a commodity would be the determining factor of value

production" (see Ibid., p. 172). In this respect, all material products of human activity contain information in the form of knowledge, and surely also as they become commodities. And the representative example of this is Internet media companies.

According to Fuchs (2014d), people who use the Internet, and especially the social media, are people who create, distribute and share their information while consuming information. That is why Fuchs calls their activities "digital prosumption labor[66]." People access Internet search engines or social media to search for the information they need. The more numerous these users are, the more they can be defined as, and fall under the category of "prosumer (producer + consumer) commodity" or "produser (producer + user) commodity", and become products sold to advertisers (Fuchs, C. 2009b, pp. 81-83; 2014d, pp. 115-117). Therefore, services provided for a fee on the Internet are also a kind of product, but at the same time, Internet users are also a commodity. In this latter respect, their activities too are productive labor that creates value for media companies.[67] "The more users make use of advertisement-based free online platforms and the more time they spend online producing, consuming and exchanging content, (and all this while communicating with others), the higher the value of the prosumer commodity they produce will become; and the higher the advertisement price will rise and the higher the profits of the specific sponsoring Internet corporations will be" (Fuchs, C. 2009b, p. 82). "Users are productive

[66] The term of prosumption is a 'portmanteau' of the words production and consumption or productive consumption.

[67] In the category of 'Critical Internet Theory', Fuchs (2009b) divides the capitalist Internet economy into 'information as gift' and 'information as commodity' and then analyzes how capital accumulation works. According to Fuchs, 'information as gift' means knowledge and information as public goods (Fuchs 2009b, p. 80). All of these uses are free; the characteristics of the information gift economy are collaborative, with examples such as file-sharing platforms, Wikipedia, Linux, and Indymedia. Contrariwise, in 'information as commodity', its use is limited, and the knowledge and information that is available is to be sold for money. It is at this moment then, that knowledge and information truly become commodities, and as property that can be privately owned. Therefore, this is introduced by Fuchs as one of the proprietary models that aims at accumulating capital with the help of media, such as those Internet forms that dominate the reality of informational capitalism (Ibid., p. 78). These include entities such as Google, Yahoo, MySpace, Youtube, and Netscape, and there are several other typical examples. For transnational information capitalist corporations like these, knowledge and information realize yet more profit as information itself becomes commodities, and grow thereafter into yet more dominant global corporations.

consumers who produce commodities and profit – their user labor is exploited. But this exploitation does not feel like toil, it is rather more like play and takes place mostly during leisure time outside of wage labor time – it is at the same time unpaid labor and play labor" (Fuchs, C. 2014d, p. 112). Therefore, in modern society, knowledge and information function as products, but for Internet media companies, knowledge and information become commodities that can be privately owned and are treated as such. As a result, these companies can pursue more profits, and the system of exploitation and accumulation of capital expands further through the existence of information and communication networks (Fuchs, C. 2010a, pp. 190-192). And in transnational information capitalism, knowledge is not only produced in companies in the form of knowledge products, but also in everyday life (Ibid., p. 187). According to Fuchs, knowledge is created by parents who educate their children or by users of social networking platforms. At this time, in his view, knowledge producers are an exploited class much like traditional industrial labor (ibid.).

From the above explanation, we can catch a glimpse of Fuchs' position and argumentation as he explains digitized modern capitalism. He emphasized the importance of knowledge and information, explaining how Internet media companies accumulate capital. And he argues that his own explanations and discussions are presented on the basis of Marxist economics, especially labor theory of value. "Marx's labor theory of value is especially important for critically analyzing the media, culture and communication. (⋯) Only an engagement with Marx can make cultural and media studies topical, politically relevant, practical and critical, in the current times of global crisis and resurgent critique" (Fuchs, C. 2014a, p. 39).

Meanwhile, software is introduced by Fuchs as a representative product for explaining the value of knowledge and information. And he offers an explanation for the value of software in that, once produced, it can be copied millions of times very cheaply, but he does this in terms of the amount of knowledge and information contained (Fuchs, C. 2008, pp. 175-177; 2009a, pp. 398-399; 2015b, pp. 31-33; 2016, p. 41). In accepting this point, we need to focus more clearly on the value analysis of knowledge and

information, centering on Fuchs' explanation. For example, we need to look at how knowledge and information are defined as commodities in his scheme and how they can be 'privately' owned. Furthermore, we need to see how the value and price of software is explained in terms of the specific size and degree of knowledge and information. This is because, above all, the value and price of knowledge and information commodities are dealt with by him in his discussion on clarifying digital capitalism. Our discussion now focuses narrowly on the analysis of the value and price of knowledge and information commodities as Fuchs explains it.

3.2 Characteristics and value problem of knowledge and information

According to Fuchs, knowledge and information are "inherently" social, cooperative, and historical (Fuchs, C. 2009b, p. 77). This is because knowledge and information are produced by the efforts and cooperation of individuals who are connected to each other, not just isolated individuals. Furthermore, they are created in part by the cooperation of living people of a given day, but also in part are the result of the labor of those who lived before (ibid.). In this respect, Fuchs refers to the social, cooperative and historical nature of knowledge and information, and points out that knowledge and information are "in essence public goods" that can be used free of charge (ibid.). However, these public goods can also become commodities that can be privately owned in an information capitalist society (for example in social networking platforms) (Ibid., p. 84). Furthermore, in today's transnational information capitalism, knowledge and information have become important production forces. In this section, we will look at the characteristics of knowledge and information, focusing on Fuchs' explanation, and follow his analysis of how knowledge and information that was at one time used for free, in essence becomes commodities.

3.2.1 Characteristics of knowledge and information

Fuchs explains that goods such as a song and software are simultaneously both

information commodities and knowledge commodities as well (Fuchs, C. 2016, p. 22; p. 41). So, the labor that produces these commodities is knowledge labor and information labor at the same time (Ibid., pp. 182-183). Fuchs depicts the nature of knowledge in these media products as knowledge labor, especially in the media industry.

> If knowledge is produced once, it can be copied and transported with the help of media such as CDs, DVDs, and the internet, almost at no cost. The copying of a music-CD costs less than one euro, but copies are sold at 15-20 euros. Capital is interested in commodifying knowledge because, while the latter has a low value, it doesn't depreciate by consumption, and can be reproduced cheaply. The sale of knowledge at prices far above its economic value is the central value-theoretic mechanism in the process of accumulating capital via knowledge products.[68]

Fuchs saw that digital information commodities, such as a song (music albums), are copied and transported almost for free once they are produced. However, the reason why these songs are sold at high prices in the market is because of the knowledge (and artistry) contained in the songs. In other words, digital information commodities are inherently copied and transported without any labor and cost. However, when these copies are sold on the market, the reason why the price of copies can be even higher than the original is because of the value of knowledge. Fuchs' explanation of 'knowledge' commodities is also confirmed in the concept and characteristics of 'information' commodities.

> (Information) is generally not used up by its manifold, repeated usage; it expands during its usage, it can be compressed, it can replace other

[68] Fuchs, C. 2008, p. 175; and also, 2009a, p. 398.

> economic resources, it can be transported at the speed of light over the global information networks, and the costs of reproducing information are generally very low, and are further diminished by technological innovations and progress. Knowledge as commodity can be produced and diffused very cheaply. The mechanism for gaining profit from information commodities is that such goods are sold at prices that are much higher than their values.[69]

In such a way, Fuchs defines knowledge and information in terms of a commodity, and explains the characteristics of these products as the non-excludability and non-rivalrous features of media products. They do not disappear after multiple uses and can be reproduced at very low cost. And with technological innovation, it can be reproduced and spread very easily at a lower price. At this juncture, Fuchs explains that the characteristic of digital information commodities is the accumulation strategy of capital in modern capitalism. In other words, the advances of technology that make it easier to copy knowledge and information, make it possible, moreover, for media companies to make yet more profits. Fuchs' insight is that knowledge and information which were in essence available free of charge, turn out to make profits for today's media companies. In this sense, we need to look in more detail into Fuchs' explanation of how additional profits are realized, utilizing and exploiting the very characteristics of knowledge or information commodities themselves.

3.2.2 Value problem of one song and software

Fuchs describes a song (or music album) as a digital information commodity that contain knowledge (labor) (Fuchs, C. 2016, pp. 22-23). And to illustrate the value of the knowledge contained in a song, a glass of beer is compared and contrasted to a song. "Drinking a pint of beer uses up the beer so another person cannot drink it. (However) Listening to a song does not use up the music. Others can still consume it without the

[69] Fuchs, C. 2008, p. 209; and also, 2009a, pp. 399-400.

artist having to re-record it" (ibid., p. 23). And Fuchs points out that "Capitalism has the tendency that it tries to turn ever more aspects of human life into a commodity form" (ibid., p. 24). Here, Fuchs mentions the tendency of commodification in capitalism and explains the value of knowledge commodities via the following quotation:

> A commodity has an individual value, i.e. a specific number of minutes it takes to produce it. To tap a pint of beer sometimes takes a minute, sometimes just half a minute. Writing a new song takes an artist sometimes an hour, sometimes a month. … if on average it takes two minutes to write a song and two minutes to tap a pint of beer, then the song and the pint "have therefore the same value" because they "contain equal quantities of labor" (Marx, K. 1867, p. 130).[70]

Fuchs' explanation, as above, seems to refer to the real world where the value of a commodity is defined as labor times; and two products with the same labor times are sold, however, at different prices in the market. Here, however, in this digital instance according to Fuchs, the reason the two commodities are sold at different prices rest on knowledge and technological innovation.

> Knowledge and technology have an important influence on a commodity's value: Commodity value "is determined amongst other things by the workers' average degree of skill, the level of development of science and its technological application, the social organization of the process of production, the extent and effectiveness of the means of production, and the conditions found in the natural environment" (Marx, 1867: 130). A person tapping a pint of beer for the first time will on average be much slower than a bartender who has practiced this skill over 20 years. A

[70] Fuchs, C. 2016, p. 22.

> machine designed to tap as much beer as possible in as little time as possible for mega events is, in contrast, likely to be faster even than a good bartender. What Marx wants to tell us with this specific passage is that scientific progress and education can reduce the average value of commodities.[71]

It appears that Fuchs explains the value of these commodities in his own way in Marxist labor theory of value. This is confirmed by his point that even if knowledge and information are converted into commodities in a capitalist society, the value of these commodities can still be explained by labor times. But Fuchs is suddenly talking about the real world. And he points out that, "In reality we know that on average it takes longer to write a song than to tap a pint of beer" (ibid.). And then, he adds that this is due to the fact that "knowledge (education, skills) and technology (scientific progress) have an important influence on a commodity's value" (ibid.). This refers in turn first to the easier and faster production of commodities such as beer as a result of education (knowledge) and secondly at the same time to technological innovation. Furthermore, it seems a compounded conclusion via analogy has been reached, namely that the price of the song (knowledge) commodity is expensive because it takes a lot of time to produce a song in that this includes knowledge.

We can find passages in yet other publications too which describe the value of digital information commodities such as software as constituting knowledge commodities.[72] To explain this, Fuchs separates the labor of producing software into physical labor and knowledge labor (ideological - or immaterial labor) (Fuchs, C. 2008, p. 176). It follows that software is regarded as a knowledge commodity (production of knowledge), because the production of software requires many workers' ideas. And Fuchs explains that the (surplus) value contained in software is the time required for the physical (material) as well as the knowledge (ideological or immaterial) production stemming

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[71] Ibid., p. 22.

[72] For example, songs, CDs, books, operating system, application software (application programs), etc. are applicable (see Fuchs, C. 2015b, pp. 31-33).

from employees (ibid.). In other words, the value of software is divided into the labor hours used to produce knowledge (ideological labor) as well as, on the other hand, to produce the software itself (material labor). Fuchs, who distinguished between physical labor and knowledge labor (ideological labor), now attempts to explain the magnitude and contribution of knowledge labor. At the same time, he explains that the value of digital information commodities such as knowledge labor is sold differently in the real world from the innate inherent value. We can see how software is formed and maintained at a higher price than its inherent value as follows:

> Information is a peculiar good, for which Marx's labor theory of value has to take on a specific form. The first version of the commodity has high value, whereas copies have low value. Information commodities tend to be sold at prices that do not reflect the number of hours necessary for the reproduction of copies, but rather the higher amount needed for the initial production, as well as for the time needed for creating updates, new versions, and customer support. The small value involved in the copy-time is in no way the determining feature of information goods' prices. Rather the price of such goods tends to stand above the monetary equivalent of the average copying/reproduction time. The high risks that information commodities face (nobody knows if a specific information good will be a hit or a flop, the risk of pirating, the 'outdating' risk, etc.) is partly offset by selling information commodities at prices that stand above the monetary equivalents of their average reproduction/copying time. Discussions of Marx's labor theory of value now in relation to information commodities have, especially since the end of the 20th century and now in the 21st century, become important, because it was already back there that talk started about the existence of an 'information economy'.[73]

[73] Fuchs, C. 2016, p. 41.

As described above, Fuchs seems to have described a real world in which digital information commodities that are reproduced at low cost are sold at higher prices than their inherent value. According to Fuchs, software is sold expensively in the real world because of the high risk of the product: nobody knows if an information commodity will be a hit or a flop, plus the risk of pirating, and the risk of becoming outdated. In other words, Fuchs concludes that the reason why these products are sold at high prices lies somehow in the very nature of digital information commodities, that is to say, the characteristics of being easily copied and transmitted. We can affirm Fuchs' explanation of this in the following passage. "Software is a commodity and the capitalist software firm will continuously let workers engage in labor in order to further develop and update the software's quality so that its use-value changes qualitatively; new versions are generated that can again be sold in order to yield yet more profit." "Knowledge such as is embodied in software is dynamic and tends to need to be updated, renewed, re-worked, re-mixed, re-purposed, and combined with various services" (Fuchs, C. 2015a, p. 31).

So far, we have looked at Fuchs' attempt to explain the value contained in knowledge commodities. Fuchs defines a song and software as knowledge commodities, and explains the value of these products in terms of the magnitude of labor time. In other words, the reason why one song is sold expensively in the real world is the knowledge (information) contained in the product. Furthermore, he explains that the reason why software is sold more expensive than its original (inherent) value lies in the characteristics of these products; that is, the risk factors that it can be easily copied as well as the characteristics that must be constantly updated. We can clearly see what Fuchs is aiming to assert in explanations like these. In other words, the importance of knowledge and technological innovation is emphasized, and knowledge, which was originally available for free, subsequently takes on a high price as a commodity. If so, then we now need to look at how knowledge and technological innovation have become an important productive force today, and how to explain the precise magnitude of the value contained in such knowledge from a Marxist perspective.

In this respect, we will focus our discussion on two main issues. First, we will look at how the value of knowledge contained in knowledge commodities is explained in Marxist labor theory of value. The value of knowledge here refers to the magnitude of the knowledge (ideological or immaterial) labor time given to produce software, that is, the magnitude of the original value explained in Marxist labor theory of value. If the value of knowledge is included in the value of software, you can assess somewhat the value of the knowledge in the value of the software. Meanwhile, according to Fuchs, the reason why the (sale) price of software is high in the real world is due to the characteristics of these products. Then secondly, we need to look more closely at how real-world prices and the characteristics of these commodities are explained from a Marxist perspective. Of course, in Fuchs' description already presented earlier, we can affirm his explanation that the reason why software is sold more expensive than its original value is due to the high risk of these products. However, we see in his explanation an analysis presented at a very general level. Because, first of all, not all companies that produce software will be able to set the price of their software high, precisely because of these risk factors. Furthermore, the tendency of software to be updated or reused can mean the production of yet new commodities, not the copying of already produced commodities. In this respect, the causes pointed out by Fuchs seem to explain general phenomena at a very superficial and non-comprehensive level. Yet Fuchs does attempt to explain the fact that knowledge and information commodities such as software are sold at high prices in the real world in numerous articles. And of course, his arguments are still being underscored via the Marxist theory of labor value. So, at this point, our discussion will focus on how Fuchs's argument is being explained from a Marxist point of view.

3.3 Value of knowledge and information commodities via Marxist labor theory of value

As we have seen so far, Fuchs has an explanation for the tendency for immaterial goods such as knowledge and information to be commodified in capitalist society. At this

juncture, Fuchs is paying attention to the real world where once produced digital information commodities are sold at a higher price than their original value (labor time required to produce copies). According to him, the high prices of these commodities are due to the value of knowledge and information included therein. And Fuchs insists that his arguments are based on Marxist labor theory of value. In this section we will look more specifically at the value of the knowledge commodities that Fuchs explains. To this end, we will review Fuchs' literature and his particular discussion on how the inherent value of the knowledge commodity is explained in Marxist labor theory of value.

3.3.1 Assertion: Knowledge and information are important productive forces

First, Fuchs borrows the basic concepts of Marxist economics to explain 'transnational knowledge capitalism' and 'transnational information capitalism'. In doing so, Fuchs argues that knowledge and information, which were originally public goods, became outright important productive forces in capitalist society. His arguments are embodied in the explanation that the knowledge and information contained in digital information commodities such as software represent an important force of capital accumulation. We can confirm his arguments concerning the process of the circulation of capital he describes.[74] First of all, let us follow Fuchs' explanation a little more to understand the process of the circulation of capital as explained in Marxist economics.

The circulation of capital refers to the process according to which the capitalist himself invests capital and returns what has been multiplied. This structure of capital circulation is an instance confirming that the value creation of commodities is realized through the exploitation of labor power (Fuchs, C. 2012a, p. 138). In other words,

[74] Fuchs covers the same content in his numerous literature contributions (Fuchs, C. 2010c, p. 17; see also 2012a, pp. 137-141; 2015a, pp. 146-168; 2017, pp. 548-550). Among these, we focus on the literature from 2012a.

capitalism implies that it "is impossible to create profits without workers" (ibid., p. 139); and "to increase the value of capital, that is, in order to increase surplus value, it is necessary to extend labor times and cut workers' wages (free labor). Furthermore, productivity can also be increased through the introduction of new machines" (ibid., pp. 140-141). This particular recapitulation by Fuchs shows that knowledge and information are indeed a process in which knowledge and information appear as labor-productive forces, borrowing from Marx's proposed process of the circulation of capital as he does.[75]

Fuchs (2012a) differentiates in his terminology the two major factors of production, the means of production and the workers which capital needs to produce commodities, as constant capital (means of production) and variable capital (workers), respectively. At this juncture, part of the means of production, that is, constant capital, is again divided into fixed capital and circulating capital, and it is further explained that knowledge and information are included in the means of production along with such things as buildings and machines, that is to say, as part of the fixed capital.[76] He then emphasizes that "technological innovation accelerates the speed of commodity production as a means of increasing productivity in modern society; and knowledge and information are as equally an important means of production as technological innovation" (Fuchs, C. 2012a, p. 144). As we had confirmed earlier, his argument is the same as the explanation that the knowledge/artistry contained in song is the reason that a song is sold at a high price. We can reaffirm Fuchs' explanation in the quotation

[75] See the figure 4.1 presented on p. 137 (Fuchs, C. 2012a). The same picture (figure) can be found in many of Fuchs's literature. In other words, Fuchs emphasizes this explanation in many literary articles to support his argument.

[76] Marx calls the capital invested in the purchase of the means of production (Mp) 'constant capital' and the capital invested in the purchase of labor power (L) 'variable capital'. (Fuchs, C. 2012a, p. 138; Marx K. 1864, p. 317). Furthermore, part of the means of production, that is, constant capital, is again divided into fixed capital and circulating capital. For example, in a building or machine, the capital invested to purchase the means of production, which disappears only after passing through numerous production cycles, is called 'fixed capital'. And the opposite of fixed capital is 'circulating capital' or 'current capital'. This refers to capital whose physical form disappears due to material wear and tear in one production cycle. On the one hand, what belongs to the category of circulating capital includes non-fixed parts of constant capital, such as raw materials, auxiliary materials, and energy (Fuchs, C. 2012a, p. 138; Marx, K. 1885, p. 237).

below.

> Marx stressed that the invention of media technologies is advantageous for capital. For Marx, technologies are ‘means for producing surplus-value’ (Marx, 35: 371). For increasing productivity, new technology is developed and as a consequence living labor is substituted for by technology.[77]
>
> Marx forecast the increasing importance of knowledge labor—and therefore also of media capital—as a consequence of the development of the productive forces involved. There is an economic interest in the substitution of living human labor by non-human technology in order to decrease the investment and reproduction costs of capital and its turnover time, which, in the ideal case, increases profit. The continuous overthrow and revolution of technology through science is a given condition for the existence and reproduction of capital. Therefore, the importance of technological means of production (fixed constant capital Cfix)—and with it also knowledge labor—increases; and the importance of living labor (variable capital ‘v’) decreases continuously.[78]
>
> Marx pointed out that with the growth of technological productivity, knowledge becomes an important productive force.[79]

This passage shows more explicitly how media companies that produce digital information commodities such as one song or, for example, digital software are accumulating more capital through knowledge and information. We can see here how Fuchs emphasizes his position based on Marxist economics: “Technology is a means

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[77] Fuchs, C. 2012a, p. 142.

[78] Ibid., p. 144.

[79] Ibid., p. 145.

for producing surplus value" and "the importance of knowledge labor increases with the development of productive forces." Further, "The importance of the means of production (fixed capital), be it machine or knowledge labor, thus increases," and "with the growth of technological productivity, knowledge represents an important productive force."

Fuchs' argument actually borrows from Marx's explanation that the increase in labor productivity through the introduction of machines increases the profits of capital through it.[80] According to Marx, machine and large-scale industry at the time of the industrial revolution aimed to increase the value of capital and is the result of a search to increase labor productivity.[81] In this respect, the digital revolution of today can shorten required labor times, and digitized means of production can increase labor productivity and raise capital profits. Fuchs borrows from Marx's explanation that the introduction of machinery is a means of producing surplus value, and then proceeds to explain that knowledge labor is also a means of producing surplus value. In other words, Fuchs equates the introduction of machinery and the introduction of knowledge labor as both similarly important improvements in the means of production. This is confirmed by Fuchs' argument that explains knowledge (labor) as machine-like fixed capital. However, we can still criticize Fuchs' explanation as being the result of an arbitrary interpretation, and one that does not strictly conform to the concept of fixed capital.

[80] Marx explains that the method for the increase of capital, that is, the production of surplus value, is possible by extending the working day or reducing the wages of the labors. Marx distinguishes between the production of absolute surplus value and the production of relative surplus value. In this case, the production of relative surplus-value is a method of increasing the production of surplus-value, and thus reducing the necessary labor time amongst a given length of working days. Reducing the required labor time in this way means that the value of labor power decreases, which in turn reduces the wages of labors. The key to the category of production of relative surplus value for capitalists is to reduce the necessary labor time, and Marx explained that the capitalist mode of production changes as it develops into the stages of (simple) collaboration, division of labor (manufactured by handicrafts), and the use of machines.

[81] See *Capital* Volume 1, Chapter 15 (Marx, K. 1990, pp. 492-639).

3.3.2 Review 1: Knowledge labor is not fixed capital

Fuchs emphasized the importance of knowledge and information, explaining that knowledge labor is a similar instance to machine-like fixed capital. However, Fuchs' argument is actually an explanation that is inconsistent with the nature of knowledge, or even, and just as importantly, with the concept of fixed capital described above. In order to critically review Fuchs' arguments, we will first look at some additional conceptual rules for fixed capital. The concept of fixed capital as follows is what Fuchs himself maintains.

According to Fuchs (2012a), "In the accumulation of capital, capitalists buy labor power and means of production (raw materials, technologies, etc.) to produce new commodities that are sold with the expectation to make money, i.e. profit that is partly reinvested" (Fuchs, C. 2012a, p. 138). Marx explains how the reproduction of capital is guaranteed and how surplus value is produced, which is divided into the sphere of circulation (capital transforms its value form) and the sphere of production (capital (M) increases into another capital (M')).[82] First, to understand the circulation of value, we need to understand the concepts of circulating capital (flüssige oder zirkulierende Kapital) and fixed capital. Circulating capital refers to a means of production that transfers its value to a new product at once, such as auxiliary materials in the form of raw materials or fuel, which are the initial materials of the product, derived from the constituent parts of capital, and a fluid labor power that is purchased. In contrast, the

[82] We need to take a moment to look at the process by which money is converted into capital. First, the holder (capitalist) of money (M) goes to the market and purchases the product (C). At that time, the purchased product (C) consists of the means of production (Mp) and the labor power (L). This is where money (M) becomes productive capital (P) that can produce something else. Therefore, the change of money capital into productive capital is also called the circulation sphere or the circulation process. The productive capital (P) is then used to produce a new commodity (C'), in which labor power (L) is added to the production of the new commodity (C'). As a result, the new commodity (C′) contains an increase in the labor power applied (Δc). This increase is the profit passed on to the capitalist surplus value. Marx calls this process the production sphere or the production process. In the next stage (Sphere of Circulation), the capitalist who has the new commodity (C') takes it to the market and sells it for money (M') equal to its value. In this way, Marx explained the circulation and production of capital, where profit is generated in the sphere of production and realized in the sphere of circulation. In other words, surplus value is produced when a new commodity is produced, but a profit is made when it is sold in the market.

means of production, that is, the original means of labor, in which value is sequentially transferred to several products, such as production facilities represented in the form of machines or factory buildings, or of tools, is termed fixed capital.[83] Then, the accumulation of capital proceeds to the second stage, the sphere of production, in which the concepts of constant capital and variable capital are both represented. At this juncture, the capital invested in the purchase of the means of production is called constant capital. And the capital invested in the purchase of labor power is called variable capital. Compared to the means of production (constant capital), labor power (variable capital) becomes labor that creates value through its employment. In other words, if a worker spends more time engaged in employment by the capitalist than the worker's own wages are actually worth, then the capital increases and profit is generated accordingly. Marx explained how value circulates via the distinction between circulating capital and fixed capital (Heinrich, M. 2005, p. 136). This also explained how value is formed through the distinction between constant and variable capital (ibid.). Such an explanation is a basic concept of Marxist economics, and is also confirmed in Fuchs' literature (see Fuchs, C. 2012a, pp. 137-141).

Here we need to note that Fuchs describes knowledge labor as something on the order of machine-like fixed capital. That is a reference to Marx's positing the concept of fixed capital in terms of the circulation of value through the circulation structure of capital. Production facilities such as machinery and factory buildings are fixed capital. And in this connection, once again confirming the nature of fixed capital, it is stated, "Fixed capital has the characteristic that it expires only after going through numerous production cycles" (ibid., p. 139). In other words, if a machine could be used for 20

[83] Marxist economics distinguishes between the concepts of constant capital and variable capital (the distinction between the two relates to the 'formation' of values), and further distinguishes the concepts of fixed capital and circulating capital (the distinction between the two relates to the 'circulation' of value). In other words, Marx explained the formation of values and the circulation of values: The distinction between constant and variable capital exposes the identity of exploited surplus labor, that is, exposes the essence of capitalism. (Heinrich, M. 2005, pp. 135-136; see also Chae, M. 2015, p. 224.) However, in neoclassical economics (bourgeois or mainstream economics), only the concepts of fixed capital and variable capital are distinguished (see Kiefer, M. 2001, pp. 164-165).

production cycles, it would transfer its value by one-twentieth for each production cycle (Heinrich, M. 2005, p. 135; see also Fuchs, C. 2012a, p. 139). Accordingly, we now need to examine whether the character of fixed capital is the same as that of knowledge labor or knowledge. Fuchs describes the nature of knowledge or information as follows, “Knowledge, after it is once produced, can be copied and transported almost for free through media such as CDs, DVDs and the Internet” (Fuchs, C. 2008, p. 175; 2009a, p. 398). And, “Information does not disappear after being used multiple times, but rather can be multiplied and even compressed by use” (Fuchs, C. 2008, p. 209; see also 2009a, pp. 399-400). In other words, knowledge contained in a knowledge commodity or information commodity has the characteristic that its value is copied or transported free of charge after the first unit of production. That is to say, in other terms, the value produced by the first unit is not transferred to the second unit’s copy.

From the very nature of knowledge and information that Fuchs himself describes, we can clearly confirm that knowledge labor is not a means of production such as buildings or machines, that is, fixed capital per se. If, as Fuchs explains, knowledge labor is a means of production (fixed capital) such as buildings and machines, then knowledge (information) must be extinguished after a number of production cycles. However, knowledge or information does not in fact disappear after being used multiple times, which would need to happen to meet such a definition. Rather it can be multiplied and compressed ad infinitum by using knowledge and information, as even Fuchs also points out. According to this distinction, Fuchs then should never argue that knowledge labor can ever be a fixed capital such as a building or a machine.

3.3.3 Review 2: Misunderstanding of ‘General Intellect’

We were able to critically examine Fuchs’ arguments for explaining knowledge labor as fixed capital in terms of the very nature of knowledge and of fixed capital. Nevertheless, Fuchs’ claim that knowledge labor is machine-like fixed capital is obtained by borrowing from Marx’s quotes found in other literature sources. Most

representatively, Fuchs supports his argument by borrowing the concept of ‘general intellect’ from Marx’s literature. According to Fuchs, the capitalist process of production becomes more and more dependent on knowledge, which is explained in Marx’s work *Grundrisse* using the words ‘general intellect,’ ‘universal labor of the human mind,’ and ‘a direct power to production’. Fuchs repeatedly presents the same explanation of ‘general intellect’, such as the accumulation of capital, in his own various publications (see Fuchs, C. 2010c, pp. 22-24; 2012a, pp. 144-146; 2014c, pp. 38-40; 2015a, p. 106; 2016, pp. 360-375). In this respect, we need to examine Marx’s *Grundrisse* and his arguments, which Fuchs chooses to cite, in more detail. The following is a section where Fuchs directly cites Marx’s sentences to explain the importance of knowledge.

> Production becomes increasingly dependent on knowledge. Such is: ‘general intellect’ (Marx, 1858, 706), the ‘universal labor of the human spirit’ (MECW 37, 104), and ‘general social knowledge’ that becomes ‘a direct force of production’ so that ‘the conditions of the process of social life itself [. . .] come under the control of the general intellect and [. . .] [are] transformed in accordance with it’ (ibid.). The importance of knowledge in capitalism is based on the latter’s immanent tendency, i.e. the organic composition of capital to rise so that, at a certain point, an overturn of quantity into quality emerges, that is, a new qualitative phase of capitalist development emerges, in which media capital and culture industry are of central importance for capital accumulation.
>
> The notion of General Intellect that Marx coined in this context in the *Grundrisse* has become important in the Italian ‘operaistic’ discourse on ‘immaterial’ labor during the past several years (cf. Hardt & Negri 2000, 2005; Negri, Lazzarato & Virno, 1998; for critical accounts of Hardt and

Negri see Balakrishnan, 2003, Passavant & Dean, 2004).[84]

As introduced and explained by Fuchs in the above-mentioned citation, the concept of 'general intellect'[85] in Marx's *Grundrisse*[86] is asserted also by late Italian autonomists, such as Michael Hardt, Antonio Negri, Maurizio Lazzarato, and Paolo Virno. Researchers of Marxist economics are borrowing the concept of general intellect to emphasize the importance of "immaterial" labor. Numerous scholars (especially in political economy of media) such as Christian Fuchs, as well as Vincent Mosco, explain the importance of knowledge through the concept of 'General Intellect' (Mosco, V. 2017, pp. 25-29). In other words, they argue from a Marxist point of view that immaterial labor such as knowledge labor is important in modern capitalism.[87] Fuchs also borrows the concepts of 'general intellect' and 'immaterial labor' to emphasize the importance of knowledge and information. However, German Marxist economist Wolfgang Fritz Haug has already critically analyzed their interpretations of 'General Intellect' (allgemeiner Verstand). We can distinguish the conceptual errors that occurred within Marxist economics in the past using Haug's criticizing revelations. In other words, neo-Marxists accepted the wrong interpretation of "general intellect" and explained modern capitalism in their own way. According to Haug (2010), 'general

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[84] Fuchs, C. 2012a, p. 145.

[85] "The development of fixed capital indicates to what degree general social knowledge has become a direct force of production, and hence, to what degree the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it; i.e., to what degree the powers of social production have been produced, not only in the form of knowledge, but also as immediate organs of social practice of the real-life process" (Marx K. 1858, p. 706).

[86] *Grundrisse der Kritik der Politischen Ökonomie* (*Fundamentals of a Critique of Political Economy*) is a lengthy, unfinished manuscript by Karl Marx (1857/1858).

[87] According to Alberto Toscano (2007), an Italian Marxist economist, there are two main streams in the theory of cognitive capitalism. First, scholars with a tradition of post-operaism in Italy, such as Negri, Virno, and Lazzarato, are mainly interested in the reconstruction of labor. They already share a hostility to value theory (which Negri has shown) since the 1970s, arguing that traditional Marxist value theory cannot be applied. On the other hand, scholars with a French background see cognitive capitalism as a new accumulation system. They maintain a certain distance from the Marxist perspective by citing a regulation theory by Michel Aglietta (1976) or even a Keynesian orientation rather than a specific interest in Marxist labor theory of value.

intellect' is unilaterally shortened by these late Italian autonomists and interpreted as 'machine fragments' or 'chapters on machines' (p. 209). Post-Italian autonomists are actually guilty of arbitrarily re-interpreting the theory when they say: "Marx equated general intellect with fixed capital"; and 'post-Fordism' is "a system of general intellect" or a mode of production based on "general intellect" (ibid.). Furthermore, they reinforce their logic by arguing that "this lies at the heart of new capitalist production" (see Haug, W. 2000, pp. 188-189).

When we accept Haug's points above, we can confirm that Marx's language as cited by Italian post-autonomists, or even by Fuchs himself, represents both a misreading and a misinterpretation of Marxist value theory. In other words, when they maintain that immaterial products such as knowledge are an important means of production in modern society, their explanations basing and relating the value of these commodities to the knowledge contained in the software are arguments unrelated to Marxist labor theory of value.[88] And yet, such a claim that knowledge is a most important productive force in a digital capitalist society is still being promulgated today by any number of the political economists of media besides just Fuchs (e.g., Mosco, V. 2017, pp. 25-29; see also Sevignani, S. 2016, pp. 19-21).

3.4 Pricing of software

Fuchs argues that the tendency of knowledge and information to be sold as commodities in modern capitalism is a most essential mechanism in the process of accumulation of capital. He argues that knowledge and information, originally not normal commodities, are in fact commodified in digital capitalism. Hence, he proceeds

[88] Fuchs (2014a) actively borrows the concept of general intellect, but on the other hand, criticizes the cognitive capitalists' method of explanation. At this time, Fuchs' critical view can stand only in that some scholars deny the Marxist labor theory of value (see Fuchs, C. 2014a, p. 66). However, we have not been able to locate anywhere in Fuchs' literature whether the Marxist labor theory of value has vitality and how the importance of knowledge and information can be explained based on the Marxist value theory. Fuchs' literature only confirms in general the importance of the Marxist labor theory of value.

to explain the process by which knowledge and information are commodified in many of his articles and literary papers. Among these explanations, software is defined as a knowledge commodity and one that more specifically elucidates and illustrates the value of knowledge. Furthermore, Fuchs specifically explains the process of commodification of knowledge and information contained in software via Marxist labor theory of value. However, his arguments were based on arbitrary interpretations of the underlying concepts of fixed capital and of general intellect. In this respect, via his argumentation alone, the value of software sold at a high price is still not adequately explained by reference to the ingredient value of knowledge or information.

Nevertheless, it is helpfully emphasized in Fuchs' literature that the Marxist labor theory of value is still important today (in a digital age). And Fuchs argues that the value (price) of digital information commodities such as software is realized from the characteristics of these products, that is, non-excludability and non-rivalrous.[89] The reason we examined Fuchs' argument was to check how the value and price of digital information commodities can be explained in terms of the characteristics of digital information goods (and paralleling the same characteristics as media products; non-excludability and non-rivalrous). However, his explanation is intended to show that software sold at high prices in the real world is embodied already in the characteristic features of these commodities. Hence, we can indeed see Fuchs' position as an attempt to describe the high price of knowledge and to explain why the price of software is sold so expensively high. If a product is too expensive or, alternatively, free on the market, one still needs to focus on the value and price of these products and how those prices are formed and maintained. This study focuses on explaining the market price of a commodity sold regardless of its "inherent" value and production price as constituting a Marxist monopoly price. However, although Fuchs' explanation is still enumerated in the basic concepts of Marxist economics, unfortunately it can be seen that these concepts are actually independent of the price of software. This is because the Marxist labor theory of value starts from the problem that it cannot 'objectively' explain the

[89] This refers to the characteristics of knowledge and information.

extremely ‘subjective’ magnitude of utility (the value of knowledge and information). However, Fuchs tries to explain the size of knowledge contained in software in Marxist labor theory of value. As a result, the theoretical foundations he actively accepts and cites are not applied sufficiently enough at all to explain the real world. We also can reaffirm our critical position by quoting Fuchs’ literature in which he describes the value (magnitude of utility) of software in relatively pointed arithmetic detail. Here is a passage wherein Fuchs explains how the real price of software is shaped.

> Imagine the production of a mass-software with a certain turnaround time. The production time of the necessary knowledge is best assigned to the first turnover period of capital. We assume that all copies are sold, and that already after the first turnaround a profit is already achieved and that there is no interest and rent to be paid. Let the market price of one piece of software be 1,190 euros. We have to distinguish the constant and variable capital in the production of knowledge (C_1 and V_1) from the capital involved in the physical reproduction process (C_2 and V_2). Let’s also assume that at the first turnover 100.000 pieces of commodity are produced, that $C_1 = 10.10^6$€, $V_1 = 50.10^6$ €, $C_2 = 5.10^6$€, $V_2 = 2.10^6$€.
>
> Hence the total investment costs are 67.10^6€. We assume a rate of surplus value of 100%. The mass of constant capital is $C = C_1 + C_2 = 15.10^6$, the mass of variable capital $V = V_1 + V_2 = 52.10^6$. Due to a rate of surplus value of 100%, the mass of surplus value produced is $S = 52.10^6$ €. All copies are sold; hence the revenues are $1190 \times 100000 = 119.10^6$ €. Subtracting the investment costs from this sum results in a profit of 52.10^6 euros for the first year. The average value of a single copy is $V = C_d + V_d + S_d$; where C_d, V_d und S_d describe the average proportions for one commodity of the total constant and variable capital, as well as of the total surplus value produced. Hence the average commodity value is

$$V = \frac{15 \times 10^6}{10^5} + \frac{52 \times 10^6}{10^5} + \frac{52 \times 10^6}{10^5} = 1190$$

Hence in this example the value of the commodity equals its market price. Let's take a look at the second turnover of capital: We assume that the conditions of production, the costs and the total amount of produced commodities remain the same. How does profit develop? The investment costs for knowledge production don't have to be spent by the capitalists this time due to the specific characteristics of information (C_1=0, V_1=0). Hence the average commodity value is reduced to

$$v = \frac{5 \times 10^6}{10^5} + \frac{2 \times 10^6}{10^5} + \frac{2 \times 10^6}{10^5} = 90$$

This means that the average value of a single piece of software has massively decreased without a change in the conditions of production! This is due to the fact that knowledge only has to be produced once, it only has what Marx called a "moral" devaluation, but doesn't lose value by ageing, use or non-use; it can be reproduced easily and very cheaply, etc. The software is still sold at 1,190 €, hence the profit increases from 52.10^6 € to 110.10^6 €. This amounts to an increase of average profit from 520 € to 1,120 € per commodity and an increase of the profit rate from 0.78 to 16 (profit rate = profit / (C+V))! This shows that the value of a piece of software is much lower than its market price and that the specific characteristics of knowledge are the mechanism that enables capital accumulation in the software industry.[90]

The above explanation describes the selling price of the software with the goal of indicating that knowledge is included in the price of the software. At this juncture,

[90] Fuchs, C. 2008, pp. 175-177.

Fuchs emphasizes, above all else, that his explanation borrows on the basic concepts of Marxist economics. Hence, he explains that knowledge is included in constant or variable capital, and points out that the surplus-value rate is 100%, suggesting thereby the concepts of Marxist economics. But in his explanation, we cannot at all find just how the price of software is determined by the size of knowledge. Rather, Fuchs tries instead to explain the price of software in terms of the direct characteristics of these commodities. For example, Fuchs divided the production of software into two phases, assuming that 100,000 pieces products are produced each time. And the knowledge used in the production of the software was divided into the first 100,000 copies, and a resultant price was determined. Furthermore, since knowledge was not transferred to the production of the second 100,000 pieces, any profits afforded their sales become in his scheme additional income. In other words, it is a section where he emphasizes characteristics of software which he claims to be as follows: “It is due to the nature of knowledge that once produced it can be reproduced without any cost; and the associated value of knowledge, once produced, can be reproduced as well without any change” (ibid., p. 175; p. 209).

However, it seems to be simply a false hypothetical to divide the knowledge used in software production into a first 100,000 piece and a second 100,000-piece production. Because, in the production of software, the program is basically converted into data and produced as a single CD, and then it can be simply copied or distributed from the second CDs. In other words, while Fuchs notes that knowledge is not transferred to the second 100,000 copies of software, in fact, knowledge is transferred to the all copies very easily. Hence, strictly speaking, the price of the first 100,000 pieces will not be 1190 euros, but the first single CD itself will cost 1,190 Euros. And the price of all other copies must be 90 euros. Furthermore, Fuchs seems to be explaining that production costs are reimbursed on the first 100,000 pieces and then the second 100,000-pieces production can generate more profits. However, his explanation flounders, perhaps because the size (value) of knowledge cannot be adequately explained in terms of the price of a single CD. In other words, he was over-trying to attempt to demonstrate his claim that knowledge is included in the price of a

commodity. But more to the point, if, as Fuchs argues, the high cost of administration involved in the production of the first unit is realized in the copy of the next unit, then Fuchs needs to clarify how the value of the knowledge contained in the production of the first unit is transferred to the second copy. But rather than tackling this issue, Fuchs notes that a second 100,000 pieces of software formed without additional knowledge still remains costly on the open market. If, as Fuchs argues, a copy containing no knowledge is sold at a high price on the market, it would of necessity have to be defined as an irrational selling price. And so, if such an irrational price were to be formed and maintained in the digital information commodity market, this should represent a problem that normally would require an adequate and comprehensively correct explanation. For example, we ourselves have started with the following question; how is it that easy, simply reproducible software is sold at a high price? This goes to, and lies at the heart of the problem.

In this regard, in those of Fuchs' arguments that we have looked at so far, we have not been able to find any acceptable clarification on the value and price of digital information commodities. The Marxist viewpoint which he cites, and the characteristics of these commodities, do not adequately account for the high price of software. Rather, Fuchs' explanations argue that knowledge is embedded in these products to reflect that aspect of the real world where easily reproduced software is sold at high prices. Eventually therefore, the question that we first raised is how to explain the real world, one where digital information commodities once produced, and now turbocharged by a rapidly developing science and technology, can be reproduced without virtually any labor or cost? And thus, we come back to the same position once again and revert back to our starting point.

3.5 Conclusion

Recently, interest in Marxist analysis has increased remarkably in the political economy of media. This is confirmed by the remarks of American media scholar Janet Wasko (2014), who said, "There is a tendency among some media scholars to return to

classical Marxist analysis" (p. 267). Among these research trends, we looked representationally at what Christian Fuchs asserts. His research attempts to explain, above all, the inherent value of software in that, once produced, it can be copied and transported almost free of charge, and this within the Marxist labor theory of value. And, according to his explanation, the value of software is the amount of labor time used to produce knowledge and information. However, we can see that his arguments and approaches have very little to do with the Marxist labor theory of value. Rather, despite many worthy considerations, he lays bare that his assertions stem from a misunderstanding and interpretation of Marxist labor theory of value. In this regard, we believe that a misinterpretation of digital information commodities can never be a clue to a correct understanding and explanation of digital capitalism. In other words, what Fuchs argues based on Marxist labor theory of value in numerous literary sources will be more effective when there is a pointed, clear explanation of the value and price of digital information commodities. Fuchs' research begins with the fact that digital information commodities, once produced, can be easily copied and transmitted, but the value of software isolated in terms of the magnitude of knowledge is not or cannot be explained at all. We can say that his argument is similar to the (marginal) utility theory of value, which explains the value of commodities in terms of an also extremely subjective magnitude of utility. This is because the amount of knowledge or information, or the amount of labor time to produce these commodities, is highly subjective. In this respect, upon reflection, Fuchs' approach did not clearly distinguish even the fundamental difference between the Marxist labor theory of value and the utility theory of value. However, his research does tend to confirm the fact that the classical Marxist labor theory of value should be able to explain the digital media environment. Therefore, our study now goes on to focus on the approach of certain Korean Marxist economists that is different from Christian Fuchs' argumentation.

4 Explanations on the Value of Software

In this chapter, we will examine the value and price of software as explained by Korean Marxist economics. This discussion started with the so-called ‘Information Goods Value Controversy’, a discussion about how to explain digital capitalism from a Marxist point of view, in which the value and price of software represented by digital information commodities was researched. We focus on these discussions because, in counter-distinction to Fuchs’ position (and of course, those involved in neoclassical economics as well), while commodities are here too defined as valueless goods in the fact that software can be easily copied and transmitted, the Korean approach goes on to state furthermore that the selling price of these commodities is explained as a Marxist monopoly price. In other words, their discussion describes these commodities as valueless goods in the fact that when the software is reproduced, no labor or cost is required; and that an understanding of the inherent price and value of commodities is explained in the Marxist labor theory of value. Furthermore, their discussion does not stop at defining software as a valueless good, but also explains the fact that software is sold at a high price in the real world, and goes on to investigate especially the selling price of these commodities. Of course, the selling price of software in this connection is never far away from the explanation presented within the scope of the Marxist labor theory of value. Therefore, in this chapter, it is necessary to examine the ‘Information Goods Value Controversy’ in South Korea, and how the value and price of software are explained in these debates. In other words, we will examine the arguments that the value of digital information commodities is close to zero, but an argument connected as well to how their price is explained by the Marxist monopoly price.

4.1 Development and issues of the 'Information Goods Value Controversy'

4.1.1 Beginning of the controversy[91]

In South Korea, in the early 2000s, there was a discussion centering on how scholars majoring in Marxist economics might explain digital capitalism.[92] They focused on the question of how to now explain a resurgent capitalism, one transformed through the "Digital Revolution" or the "Information and Communication Revolution," through the prism of Marxist political economy (Kang, S. 2008, p. 1). At this time, most of all, they were paying attention to the emergence of information commodities such as software, it being best viewed as the result of the digital revolution. For example, Kang Namhoon raised the following considerations: "Information commodities such as software require considerable labor to produce the first unit. However, from the second unit on, it is copied (reproduced) almost without any labor or cost. Nevertheless, these commodities are sold at high prices in the market" (Kang, N. 2007, p. 8). Kang Namhoon, who first raised this issue, adds the following question: "Do these information goods or information commodities have any value? If it has value, can the entity (substance) of that value be called labor? If not labor, does knowledge or information now becomes an entity of value? (cf. chapter 3) And how will the size of that value be determined?" (ibid.). Kang Namhoon, who raised this question, himself offered an explanation, namely that, "The value of information commodities is not an individual copy, but the amount of labor required to reproduce a version". And this argues that "once a version is produced, the value of that version is divided into multiple copies and realized" (Kang, S. 2008, p. 2; Kang N. 2000; 2002). Thus, the question of conditions in the real world where software is sold at a high price became

[91] This section relies heavily on the 'Information Goods Value Controversy' published in 2007 (Kang, N. et. al., 2007) and the paper 'Value and price of digital information commodity: Is value per computer generation version feasible?' submitted by Kang Sungyoon (Kang, S. 2007).

[92] From the early 2000s to the end of 2009, we find one doctoral dissertation in the faculty of economics, 6 books, and about 30 research essays having to do with this controversy.

a central subject of discussion and debate for them.

Other participating debaters also expressed their opinions on this. Some have argued that "in Marxist labor theory of value the price of information commodities is generally made up of the sum of the price of production (Produktionspreise), temporary super-profit (extra surplus value), and monopoly profit" (Kang, S. 2008, p. 2; Jo, W. & Jo, B. 2002, pp. 138-168). On the other hand, other debaters argued that Marxist labor theory of value is no longer to be applied given the information revolution, and that a different form of value theory is needed (Chae, M. 2004a, p. 226; Jo, W& Jo, B. 2002, p. 146). Chae (2004a) criticizes each of these arguments and argues that the conundrum of the value and price of software can still be explained in the labor value theory: "The actual cost and labor required for the reproduction of information commodities is virtually zero, and the price is in fact an extremely factitious (arbitrary) monopoly price guaranteed only by state violence such as intellectual property rights" (Chae, M. 2004a, p. 238).

In this fashion, the 'Information Goods Value Controversy' began with the objections of Kang Namhoon in answer to Chae (Kang, S. 2008, p. 3). And over time, their discussions expanded into a full-fledged "controversy" with additional interventions from the other debaters. The debate that began in this way is published in a book of collected major papers from discussions that had been going on up to that time, around 2007 (see Kang, N. et. al., 2007). That debate, which has been going on for several years, seems to some extent to have ended with the publication of the above book. According to Kang (2008), who summarized the process of the debate, "It seems that the publication of the book has confirmed some degree of convergence of positions or consensus on the main issues revealed in the debate" (Kang, S. 2008, p. 3). Nevertheless, it seems that the debate is not fully over, in the sense that "each debater has a different understanding of Marxist economics, and each has a different understanding, oftentimes even of the same term" (Kang, S. 2007, p. 46). We can actually confirm that further short papers on the same issue were published until 2010. However, additional essays appear mainly to reiterate or further emphasize former

positions or arguments.[93]

4.1.2 Issue and object of controversy

According to Kang (2009), who participated in the debate, “This debate is aimed at clarifying the fundamental changes in capitalist society as well as the changes in human life brought about by the scientific and technological revolution that has been unfolding for decades, especially the digital revolution” (Kang, S. 2009, p. 270). In this respect, the question of how to view this in the Marxist political economy is surfacing, embodied in a search for an explanation of the value and price of software. And they point out that, “There is a difference between the labor time required for the production of the first unit and the production of the second unit of software, which is by no means new or unknown to the Marxist labor theory of value” (Kang, S. 2008, p. 18). “In Marxist labor theory of value, price is a developing form of value; the essential substance of the value is human labor; and its magnitude is defined by labor times” (Kang, S. 2008, p.15; Marx, K. 1990, p. 130). Therefore, in this debate, the participants wanted to show that Marxist labor theory of value is still a theory that can explain digital capitalism via explanation of how the price of software is formed, and of what it consists as an entity.

In the ‘Information Goods Value Controversy’, the value of software is not the value of knowledge or information that is contained therein. Instead as a corrective, the value of the software has better to be called, the software itself. According to Kang (2008), “From the labor theory of value, what has value is not knowledge or information in and of itself, but more properly the resultant product that is the product of knowledge (information)” (Kang, S. 2008, p. 57). If software is viewed as knowledge, knowledge itself becomes a commodity; but in that case, this all becomes merely a different name

[93] We could cite several small papers published after 2009 related to the topics expressed in the ‘Information Goods Value Controversy’. However, we will examine how the value and price of software can be explained in the Marxist labor value theory, focusing on discussions up to and before 2009.

for the same object: knowledge and software. Therefore, the value of R&D labor (research and development labor) for producing and developing software, whether it be the knowledge that can produce the software or the software itself (software cannot be forgotten as is the case with a mental state), must be equal to the labor time required to reproduce the software (ibid.). In this respect, the 'Information Goods Value Controversy' is focused on how much working time is required to reproduce software.

On the other hand, the claim that knowledge or information is not a commodity itself is also affirmed for the purpose of reproducing software. According to Kang (2008), "The reason why we reproduce knowledge to apply a certain scientific law is to understand and use that knowledge" (ibid.). "Therefore, even in the case of software, the purpose of its reproduction lies not in the production of software itself, but in the use of the software produced. In other words, no one feels the need to reproduce once again from scratch already known scientific knowledge" (Ibid., p. 56). This would be to re-invent the wheel. In this respect, the act of reproducing software never needs to produce again (from scratch) knowledge already produced and contained in the initial software.

In this instance, Korean debaters stipulate that the labor time required when software is copied (reproduced) is initially the value of the commodity: this in an attempt to explain the value and price of software. And their discussion helpfully is focused on the question of how the price of software, copied without any cost and labor, is formed then in the second unit.

4.1.3 Characteristics of software

In the 'Information Goods Value Controversy', knowledge or information itself was not viewed as an entity of value. This would be to see the results of immaterial labor or knowledge labor as a commodity, and thus, in a revisionist way, to attempt to elucidate a value in line with Marxist labor theory of value. The interpretation now, however, that the knowledge or information contained in software is not in itself a

product, results in an outlook that differentiates it from any position that defines software as a knowledge commodity or an immaterial commodity. This is the viewpoint that sharply differentiates it from the pronouncements on media products that have been dealt with so far by media scholars such as Fuchs and mainstream media economics. In other words, Fuchs saw the value of easily reproduced knowledge commodities as being the size of the knowledge contained in these products. Mainstream media economics too explains these media products as having a special cost structure due to certain characteristics (non-excludability and non-rivalrous). However, in the 'Information Goods Value Controversy' of South Korea, it is argued that, if anyone can copy and use something at will without any cost, theoretically you cannot put a price on it; and if you cannot put a price on it, it's basic state defies monopolization, nor can it be monopolized. The enforcement of such give-away conditions would, of course, defy and deny any attempt to establish monopolies. And that furthermore, after all is said and done, it must be cogently maintained that the labor time required for software reproduction is what constitutes the value of these commodities. In other words, this has led unerringly to the proposition that these products have no value, because virtually no cost and labor are required to reproduce digital information commodities such as software.

In this regard, we need to look more closely into the analysis of the value and price of software described in the 'Information Goods Value Controversy'. This is because their arguments are presented and represented above all in the characteristics of digital information commodities such as software, and are differentiated from the positions and research approach that have been presented in media economic studies so far. As it progresses, our study will confirm or dispute their claims and examine how the analysis of digital information commodities can indeed be elucidated in Marxist labor theory of value.

4.2 Value of software via Marxist labor theory of value

The 'Information Goods Value Controversy', which lasted for over 10 years in South

Korea, spent its time elucidating the value and price of software which does not require any labor and any cost for reproduction. In the course of their discussions, we can find two major issues. The first is an attempt to explain the price of digital information commodities using the category of 'extra surplus value'[94] or that of 'information rent.'[95] The second issue revolved around positing the value of software as the value of the version; its position is that the value produced in the first unit is transferred to subsequent copies. These two issues are explanations presented to clarify the value and price of software. However, we will deal just with the second issue in this paper, because we can identify the first issue with Chae's critical position.[96] According to Chae (2004b), the explanation of the price of digital information commodities via the categories of 'extra surplus value'[97] and of 'information rent,'[98] is the result of

[94] The position to explain the price of software as 'extra surplus value' begins with the argument that the excess profit (super-profit) earned by software companies is due to high productivity. For example, it is argued that a part of the huge super-profits obtained by Microsoft, which has a monopolistic position in the software industry, is due to high labor productivity.

[95] Some commentators have tried to explain the value and price of software through the extension of the concept of 'ground rent (Grundrente)'.

[96] A critical review of the first issue (extra surplus value and information rent) is beyond the scope of this paper. Therefore, in this paper, we will only deal with the second issue.

[97] However, according to Chae, "the explanation that extra surplus value is included in the price of software comes from a wrong definition of extra surplus value. The argument pro and con that extra surplus value is included in the price of (digital) information commodities (or software) follows along the line that, not only for information commodities but also for all commodities, 'extra surplus value' cannot be a permanent general component of commodity prices. Extra surplus value is essentially the temporary super-profit obtained by the difference in the individual value of a commodity being greater than the market value or social value of the commodity will retail for, in other words, some capital, whose product of labor is higher than the social average, (temporarily) acquires an excess profit" (Chae, M. 2004b, pp. 89-90).

[98] The explanation of the value and price of digital information commodities in the concept of ground rent (Grundrente) is the result of misinterpretation of the concept of ground rent. According to Chae, it is a well-known fact that Marx defined ground rent as based on land ownership. Therefore, in order to apply ground rent to digital information commodities that are not related to land as claimed by some theorists, it is inevitably necessary to transform Marx's rent regulations in some form and to expand their meaning. However, first of all, the subject of discussion under the name of '(digital) information commodity' is not an 'online service' such as 'portal site' or 'search site', but refers first of all to general-purpose software such as Windows or Office. In other words, it has nothing to do with 'ownership of virtual space' or 'people's eyes' or 'people's connection'. Therefore, "the ground-rent included in information goods is generated by privately owning the virtual space. However, "the concept of 'information rent' has no room for 'private ownership' because, unlike land, 'virtual space' does not actually exist. Hence, the explanation of the 'information rent' as an 'extension' of the concept of ground-rent is a misunderstanding of the subject (Chae, M. 2004b, pp. 86-87).

“revision of the original concept through expansion or transformation by some debaters” (Kang, S. 2010, p. 168). Our research, therefore, focuses on the second issue.

The argument that the value of software should be replaced by the value of the version represented a second major issue in the ‘Information Goods Value Controversy’ and dealt with the labor time required for software reproduction. Kang Namhoon, who first asked this question, mentions that the value of a version of software is realized by dividing it into individual copies, due to the fact that R&D labor is productive labor. In other words, according to his argument, R&D labor is a productive labor that produces value. Referring to Kang Namhoon’s explanation, Kang Sungyoon points out that “the question of whether R&D labor for software production is, in a Marxist sense, productive labor or unproductive labor should be clearly identified and clarified” (Kang, S. 2009, p. 278). This is because, if R&D labor is productive labor, it can be shown that the value produced by that labor is transferred to the second unit produced later (ibid.). At this juncture, the discussion on whether to view the succeeding unit of software as a version or preferably as a copy takes us back to the analysis of the nature of R&D labor. We need to review their discussion and see how, and if, the value of the first unit is transferred to the second unit.

4.2.1 Characteristics of R&D labor and value of software

4.2.1.1 Issue 1: Characteristics of R&D labor

The question of whether R&D labor to produce software is productive or unproductive labor extends to the broader question of whether R&D labor is value-producing labor (ibid., p. 280); because in Marxist labor theory of value, “Value is the amount of labor a society must spend in order to obtain a use-value.”[99] Hence, the discussions initiated in this way lead to the question of whether R&D labor actually creates value as well as

[99] “the cost price of the commodity necessarily appears to him as the actual cost of the commodity itself” (Kang, S. 2009, p. 280; Marx, K. 1981, p. 118).

use-value. At this juncture, Kang helpfully points out that not all labor that produces use-value necessarily produces value (Kang, S. 2009, p. 280). In other words, just because a worker may be employed by a capitalist enterprise, one exploiting surplus labor, it does not mean that all of their labor produces value or surplus value. According to Kang, in order for a product to have value, that product must be sold as a commodity (ibid.). For example, in the software industry, much of the free software or open source software is made up of individual, voluntary, (read:) unpaid labor. And these products, such as are developed through voluntary unpaid labor are not sold as commodities, but are freely shared (shareware). Therefore, the R&D labor invested in such cases does not produce any value in a strict economic sense (ibid.).

These explanations point to the fact that R&D labor must be sold as a commodity in the market to realize a (its) value. R&D labor, employed by capital to develop software, is labor that satisfies someone's desires and needs. Therefore, these labors are creating use-value. In this respect, their labor is clearly productive labor. However, the core of the question is whether R&D labor can be sold as a commodity in the market. This uncertainty is confirmed in the section where Marx explains the process of value circulation and value formation of commodities, where a profit (value) of capital is created when a worker employed by a capitalist invests more hours than his or her wages.[100] However, if the then formed value is not sold as a commodity, it cannot be shifted into capital (Kang, S. 2009, p. 280; also see Heinrich, M. 2005, p. 82).

The question of whether to view the production unit of software as a version or as a copy has been linked to the question of whether the labor that produces software is productive or unproductive. However, these discussions have resulted in the explanatory proposal that in order to realize the value of the product produced, this is only first possible when it is sold as a commodity in the market. In other words, this

[100] We have already distinguished and examined their concepts contrasting fixed capital and circulating capital, as well as between constant capital and variable capital in the previous chapter (chapter 3, section 3). Through this, it was confirmed that the value of commodities is generated in the production process (sphere of production), and the realization of value appears in the exchange process (sphere of circulation).

would seem to confirm that in order for the labor of one employed by a company to produce software to have value, it must be sold as a commodity in the marketplace. If the software is not sold on the market, its value can never be accurately determined or preserved.

Regarding this interpretation, Chae points out that that the core of the problem is that digital information commodities are not suitable to be sold as commodities seeing that they are easy and simple to reproduce (Chae, M. 2008, p. 62; also see Kang S. 2009, p. 279). And this, moreover, underscores the fact that artificial intervention, represented here in contexts such as intellectual property rights, is inevitably required for the purpose of recovering the investment and profit by the capital that produced the software. According to Chae, “If there is no state intervention, such as intellectual property rights, software production labor (R&D labor) will not be able to recover not only any profits, but even the cost-price put in there. In other words, if the digital information commodities produced for sale are not actually sold in the market (as opposed to simply shared), then the value cannot be maintained or preserved” (Chae, M. 2008, p. 65). This argument implies that the value of all commodities cannot be maintained or preserved without being sold in the market, and the results of R&D labor also show that in order to produce value, the product must be sold as a commodity.

4.2.1.2 Issue 2: Transfer problem of value

As cited above, Kang Namhoon’s argument that the value of the version is realized by dividing it into the resultant copies must be expanded to the issue of clarifying the nature of R&D labor. And, according to Marxist labor theory of value, it is confirmed that software is retained and preserved only when it is sold as a commodity. However, Kang Sungyoon points out that there are still unexplained problems in Kang Namhoon’s argument (Kang, S. 2009, pp. 287-288). It is, namely, the important question of how the value produced in the first unit of software is transferred to the second unit product (Chae, M. 2008, p. 67; see also Kang, S. 2009, p. 290). This refers to the question of how, and if, the value produced by R&D labor is allocated by dividing

it into individual copies produced later.[101] Therefore, Kang Sungyoon has suitably raised the question of the transfer of value.

Chae points out that the value of software once produced is in his opinion never transferred to the second unit in terms of the property of the product as a digital information commodity or as a characteristic of digital technology (see Chae, M. 2008, p. 66-68; Kang, S. 2009, pp. 289-292). According to him, "generally, the fact that 'reproduction' takes the form of 'copy' or 'printing' is a technical characteristic in so far as it can be easily copied as a digital file." Therefore, once-produced digital information commodities can be simply copied (reproduced), which means that no labor is required in reproduction. In other words, once produced digital information commodities can be easily and completely copied (reproduced) by anyone, this represents a novel property of digital information goods and a technical characteristic at the same time.[102]

Kang Sungyoon, who agrees with Chae Mansoo's position, explains this issue by citing Chapter 5 of Marx's *Capital*, Volume 3 (see Kang, S. 2008, pp. 62-65; 2009, pp. 289-292). According to Kang, "Marx here describes the distinction between 'universal labor' and 'communal labor', showing how R&D labor is carried out."[103] In other words,

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[101] Fuchs (2008) also agrees with the fact that knowledge is not transferred to the production of the second unit (p. 175). However, in his argument (published research), we could not find how and whether the value of knowledge contained in the first unit was transmitted to the second unit or not.

[102] Such an approach is explained as the cause of the need to strengthen intellectual property rights in mainstream media economics or mainstream economics.

[103] We saw that the productive forces resulting from co-operation and the division of labor costs capital nothing. These are natural forces of social labor. Other natural forces appropriated to productive processes, such as steam, water, etc., also cost nothing. But just as a man requires lungs with which to breathe, so he also can be said to require something that is the work of human hands in order to facilitate the forces of nature productively. A waterwheel is necessary to exploit the force of water, and a steam-engine to exploit the elasticity of steam. Once discovered, the theory and law of the deflection of a magnetic needle in the field of an electric current, or the law of the magnetization of iron by electricity, cost absolutely nothing. But the exploitation of these laws for the purposes of telegraphy, etc., necessitates costly and extensive apparatus (Marx, *Capital Vol. 1*, pp. 508-509: Kang, S, 2008, pp. 63-64). These savings in the use of fixed capital, as we said earlier, are the result of the way the conditions of labor have been applied on a large scale. (…) Finally, however, it is only the experience of the combined worker that discovers and demonstrates how inventions already made can most simply be developed, how to overcome the practical frictions that arise in putting the theory into practice – its application to the production process, and so on. We must distinguish here,

“R&D labor is ‘all kinds of scientific labor, all kinds of discoveries and inventions’, and in part, not only achieved by ‘collaboration of present living people’, but also achieved partly by ‘using the labor of the those deceased in the past’” (Kang, S. 2008, p. 64). In other words, it does not cost anything to use the laws and principles that have already been discovered. Furthermore, most of the R&D labor carried out by capitalist enterprises is the application of a law rather than the discovery of the law; and subsequent to this there is now an application of the law to produce software (ibid.). So, while making a new machine or inventing a new one requires very enormous costs for the initial production, much less cost is required to reproduce it (ibid.; see also Kang, S. 2009, p. 283). At this juncture, Kang points out that software R&D labor does not need to be repeated every time to obtain the necessary results. Thus, the R&D labor put into producing the first copy of any commodity forms the value of that commodity, but that labor never adds its value to the commodity produced from the second unit on (ibid.). In other words, in this analysis the value of copied software is determined only by the amount of labor required for its reproduction (copy). These normative insights are explanations based on the basic principles of Marxist labor theory of value (ibid.). In addition, the argument that the value of the first unit product is realized by dividing the value into the products produced later is not itself without serious flaws.

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incidentally, between universal labor and communal labor. They both play their part in the production process, and merge into one another, but they are each different as well. Universal labor is all scientific work, all discovery and invention. It is brought about partly by the cooperation of men now living, but partly also by building on earlier work. Communal labor, however, simply involves the direct cooperation of individuals. All this receives fresh confirmation from certain facts that have frequently been observed: (1) The great difference in costs between the first construction of a new machine and its reproduction. (2) The much greater costs that are always involved in an enterprise based on new inventions, compared with later establishments that rise up developmentally on its ruins, *ex suis ossibus*. The extent of this is so great that the pioneering entrepreneurs generally go bankrupt, and it is only their successors who flourish, thanks to their possession of cheaper buildings, machinery etc. Thus, it is generally the most worthless and wretched kind of money-capitalists that draw the greatest profit from all new developments of the universal labor of the human spirit and their social application by combined labor (Marx, K. 1991, pp. 198-199; Kang S. 2009, pp. 282-283).

4.2.2 Characteristics of software and intellectual property rights

Chae and Kang explain that copies of software have almost zero value based on Marxist labor theory of value. These observations led them to the appraisal that these goods are virtually valueless objects; they have only use-value. Nevertheless, in the real world, software like this is unquestionably being sold at a high price. In addition, many companies that produce these goods are earning an obscene windfall of profits. At this point of the proceedings, the discussion turns to how these valueless objects can be exchanged as commodities in the market and how to explain this phenomenon. We can view these discussions as not dissimilar to the same issues that have been dealt with so far in the study of media economy. For example, how can you sell non-excludability and non-rivalrous media products in the market? For Fuchs, it was a question of how to make knowledge products privately owned.

Therefore, we need to take a closer look at their discussion. First, Chae explains that the method of forcibly commodifying valueless objects such as software is solely possible through the introduction of legal enforcement which takes the form of intellectual property rights (Chae, M. 2004b, pp. 84-85; Kang, S. 2009, p. 291). Through such legal intervention, artificial monopoly power is given to the product itself as well as to the companies that sell the product. According to Chae, “Private ownership translates to all and sundry the private control, use, and beneficiary rights over an object. Therefore, no matter how the owner controls, uses, or disposes of its use-value, it is entirely the right of the owner” (Chae, M. 2004a. p. 254). After the creation of the copyright or patent system, legal measures were then taken to prohibit or restrict the reproduction or sale of certain publications or other works for commercial purposes. However, oddly enough, there are basically no prohibitions or restrictions on the reproduction, sharing, or use of the same work by private individuals. This is because “there was no need to prohibit or restrict these reproductions for technical reasons such as the cost or working times required to reproduce them” (ibid.). Therefore, in the era when digital information goods such as software are commodified, the ownership of buyers is limited to simple usage rights or profit rights in an extremely narrow sense

(ibid.).

In this respect, intellectual property rights become an extra-, or supra-economic coercion which involves guaranteed preservation of any capital expenditure on R&D labor and the acquisition of profits. Since the amount of labor required for reproduction of digital information goods is nearly zero, normal reproduction (copy) is possible without virtually any additional cost. Therefore, a follow-on stratagem is required that renders it not easily reproduceable, i.e. prohibits its facile reproduction, such as either a technically restricted or a legally restricted prohibition based on intellectual property rights (Kang, S. 2009, p. 291). Accepting this point, we can see that digital information goods are an extreme form or manifestation of these extra-economic constraints. Theoretically, normal economics demand nothing for product with no costs involved. In other words, it is impossible for digital information goods to be sold as commodities without obtaining artificial monopoly power (Chae, M. 2004b, p. 104; Kang, S. 2009, p. 291).

Furthermore, Kang explains that it is very easy to set the R&D cost as the selling price of the product, when the capital has acquired such artificial monopoly power. Kang's argument is well articulated in the following descriptive explanation.

> For example, even in the case of commodities such as automobiles and semiconductors, there is a huge difference between the cost of producing a product of the first unit and the cost of producing from the second unit on, and R&D costs account for most of this difference. Nevertheless, the reason that problems such as exist with digital information goods do not come to the fore in the automobile and semiconductor industries is that production for the second unit requires also a huge investing of fixed capital. In these industries, the size of the minimum investment capital required for production guarantees the monopoly status of each individual capital to some extent, and thus it can be said that it is relatively easy for capitalists to set prices for transferring R&D expenses onto individual commodity

> prices. However, in the case of goods that can be reproduced without a large invest of fixed capital, such as medical supplies (pharmaceuticals), if the results of R&D labor are disclosed free of charge to other competing capitals, it can easily be the case that the invested capital will be impossible to gain the preservation of R&D costs along with attendant profits.[104] Furthermore, digital information goods with almost zero labor required for reproduction can be reproduced (copied) normally without any additional capital investment. Therefore, if not by technically restricting reproduction through a copy protection device or by legally restricting through intellectual property rights, especially copyright, etc., it becomes nearly impossible to sell such as a product without obtaining artificial monopoly power.[105]

As we have seen so far, we were able to define these products as valueless objects in so far as the cost required for reproduction of digital information goods once produced is almost zero. And we have confirmed that technical or legal restrictions are needed as a hedge for these goods to become a 'full-fledged' commodity in the real world. In this regard, Chae and Kang point out that digital information goods are not originally suitable for production and consumption as commodities because of their innate natural characteristics, the main one being that they require almost no cost for their reproduction (copy). We know that in the age of digitization, it is becoming increasingly difficult to technically block or limit the reproduction of these products, and there are more and more of these goods than ever before. That is why mainstream economics seems to be dealing with intellectual property rights as a very important, yea, a make or break topic of the 'information economy' today (Kang, S. 2009, p. 291;

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[104] "In Chapters 5 and 6 of *Volume 3 of Capital*, Karl Marx describes the possibility that, if the results of R&D labor can be easily shared, it can have fatal consequences for the reproduction of capital (Marx, K. 1991, p. 199, 208, 209)" (Kang, S. 2009, p. 291).

[105] Kang, S. 2009, pp. 290-291.

Varian, H., Farrell, J. & Shapiro, C. 2004, p. 49).

4.2.3 Monopoly price of software[106]

According to Marxist labor theory of value, the value of software is determined by the amount of labor required for production or for reproduction (copy). Therefore, when software is copied, if it is reproduced without any additional labor or cost, they are valueless objects; namely have no value. And it is mostly through the intervention of the state in the form of, for example, intellectual property rights that such valueless objects can be sold as commodities in the market. So then, how is the high price of software sold in the market formulated or justified? In the 'Information Goods Value Controversy', their discussions expanded into "how can we explain the sales price of software that is expensively sold, regardless of the price of production or value in the original sense?" (Chae, M. 2004a, pp. 225-226). And they went on to explain the market price at which software is formed in the real world via Marxist labor theory of value.

Among the debaters of the 'Information Goods Value Controversy', Chae and Kang explain the market price of these goods, given that the value of software is almost zero, as follows. First, Kang said, "If you admit that the value of (reproduced) digital information goods measured by labor time is close to zero, in order to explain the phenomenon that some software is priced very high, one must look deep into the regulations and principles of Marxist monopoly price" (Kang, S. 2009, p. 288). Marxist monopoly price stipulates that "the price of a product is determined neither by the price of production of the commodities nor by their value, but rather by the demand of the purchasers and their ability to pay" (Marx, K. 1991, p. 898). This explanation relating to the gap between value and price as explained in Marxist economics is also confirmed in the price of software. In other words, for instance, in the same way in which stocks

[106] The author of this paper has recently introduced the issues of the 'Information Goods Value Controversy' in Korea through a short academic essay in a professional journal (Yun, J. 2023).

or bonds are priced has nothing to do with labor time, the case in the pricing of digital information goods such as software exhibits a similar dynamic (Kang, S. 2009, pp. 288-289). At the juncture, Kang explains that Marxist monopoly price concepts stem above all else from Marxist labor theory of value. According to Kang, "Marxist monopoly prices are established by the transfer of some of the socially produced, total surplus value to other sectors". Therefore, the explanation of the price of software as a Marxist monopoly price is by no means an exceptional category outside the system of labor theory of value" (Kang, S. 2009, p. 289). Hence, "explaining the price of digital information goods whose value is close to zero via a Marxist monopoly price can be a solution, and one based on the labor theory of value" (ibid.).

We note that Kang's explanation is similar to Chae's position. Chae pointed out already that the pricing of digital information goods such as software was a Marxist monopoly price phenomenon from the very outset of the 'Information Goods Value Controversy' (Chae, M. 2004b, pp. 84-85). According to him, "the capitalist state is 'artificially and intentionally' commodifying valueless goods which are unsuitable to become commodities, and this through violent means such as patents and intellectual property rights, police, and a certain 'directed' administration of justice". And because they are commodified in this fashion, the market is monopolistic from the outset, and the price is not dependent on any inherent value or price of production, but represents and remains a monopoly price that depends only on the buyer's desire to purchase and the attendant ability to pay" (Chae, M. 2004a. pp. 249-250). Of course, "mainstream economics too often defines the profit generated from (digital) information commodities as monopoly profit, which happens, however, to be completely different from the concept of monopoly profit defined in the labor theory of value."[107] "According to the labor theory of value, monopoly profit is established by the transfer of some of the socially produced total surplus value from other sectors" (Kang, S. 2009,

[107] The monopoly of capital or monopoly price is also examined and explained in mainstream economics. However, in mainstream economics, monopoly means that there is only one large capital left in an industry sector. Therefore, when a small number of firms dominate an industry sector, it is called an oligopoly rather than a monopoly. See in addition section 3 of chapter 5 in this dissertation.

p. 289). In other words, “the source of monopoly profit is the transfer of the surplus value of the non-monopoly part of the total surplus value produced socially. If monopoly profit did not exist, a society’s general rate of profit would be equal to the ratio of total surplus value to total capital invested. Thus, capital (re) distributes the total surplus value of the society to each other by this rate of profit” (Chae, M. 2015, pp. 596-598). In this respect, the reproduction of digital information goods such as software does not produce any surplus value, and the system is acquiring, as their own profit, the total surplus value produced socially (Chae, M. 2004a, pp. 257-258; see also Kang, S. 2008, p. 125; Kang, S. 2009, p. 293).

As above, Chae and Kang explain the market price of these commodities (digital information goods) as well as the value of software itself based on Marxist labor theory of value. Their arguments go beyond a narrow explaining of the value and price of software to explain the sources of profit that companies that produce digital information goods earn. In other words, their analysis suggests that the profits obtained by companies that produce no-value goods are monopoly profits. We agree with such an explanation as a valid approach to explaining the high prices of digital information goods such as software; and as a follow up we will then see, first and foremost, that this does not undermine the logical consistency of Marxist labor theory of value.

4.3 Marxist monopoly pricing of software

The ‘Information Goods Value Controversy’ discussed the value and price of digital information commodities represented by software in Marxist labor theory of value. In this debate, we were able to detect and examine the relationship between the value and price of commodities produced in capitalist society through the prism of Marxist economics. Above all, the actual inherent value of software seems to have been extricated and elucidated to some extent in that the value of the commodity can be explained via the socially necessary labor time. Furthermore, in the ‘Information Goods Value Controversy’, the price of software which sells and is distributed in the marketplace with the help of intellectual property rights was explained as the Marxist

monopoly price. However, some debaters who participated in the ‘Information Goods Value Controversy’ held either skeptical or critical views directed at the position of explaining the price of software as a Marxist monopoly price. Taking one example: in that Marx’s monopoly theory was in fact a later work written after Marx, the question of what kind of discussion or position to apply here was raised (Park, S. 2005, p. 279). In this regard, we will review the literature of Kang to help explain the fact that the price of software is a monopoly price. Kang proposes to show how the price of software is explained by the monopoly price through a focused research on monopoly price and monopoly profit. Furthermore, in order to show that the price of software is a monopoly price, he specifically suggests how this concept appears in the software industry. Thus, we can confirm our position more clearly in that we refer to Kang’s research that the price of software can be explained by the Marxist monopoly price. Hence, we will look at the development process of the software industry wherein the pricing of software is formed and maintained as a monopoly price, centering on the arguments of Chae and Kang.

4.3.1 Review of monopoly pricing

Chae and Kang describe the price of valueless goods such as software as Marxist monopoly prices. However, those who participated in the ‘Information Goods Value Controversy’ showed a passive, or at least neutral position on the monopoly price theory (Kang, S. 2008, p. 108). According to one debater, “Marx refers to the monopoly price in *Capital* by way of a competition theory that studies the actual movement of market price, but no specific theory on monopoly price has thereby been developed” (Kang, S. 2009, p. 293). And then, some debaters evinced negative views on any position of explaining the price of software as a monopoly price. At this juncture, Kang reviews relevant research literature on monopoly prices and monopoly profits to support his argument (see Kang, S. 2008, pp. 110-113). In this process, he reaffirms the discussions on monopoly prices and monopoly profits held until the 1980s, focusing on the former Soviet Union and German Democratic Republic, and suggests the

possibility that such research results can be applied to the price of software.[108] According to Kang, "The position of explaining the price of software as a monopoly price independent of value or price of production seems to be close to monopoly market price theory.[109] (…) However, the existing discussions on monopoly prices and monopoly profits proceed at a high level of abstraction, involving general rules of the capitalist economy as a whole" (Kang, S. 2008, p. 112). In other words, "existing discussions on monopoly prices do explain the characteristics of modern capitalism in which market domination by monopoly firms is generalized" (ibid., p. 113).

In a similar vein, Kang presents the reason for explaining the price of software as a monopoly price in the 'Information Goods Value Controversy' as follows; A proper explanation of the monopoly price of software lies not solely in the characteristics of capitalism whereby the market domination of monopolistic companies is generalized in the software industry, but instead arises from the characteristics of software themselves (ibid.). Furthermore, the fact that the monopoly price of software is established from the nature of the product itself means that the price of all software does not necessarily guarantee monopoly profit (ibid.). In other words, they point out that, even if the price of software is described as a monopoly price, all software sold in the market does not necessarily bring a monopoly profit higher than the average profit.

At this juncture, we are in agreement that the explanation of the price of software as a monopoly price stems from the labor theory of value, which describes the value of a commodity as human labor and defines its magnitude as labor time. Of course, it seems to be impossible to directly explain the software industry itself or the prices of these commodities in reference to the general principles of existing theories on monopolistic capitalism. However, the argument that the price of software is a monopoly price

[108] Kang Sungyoon (2008) examines the positions on monopoly market price theory, monopoly production price theory, and monopoly reproduction price theory. Further review or discussion of this topic is beyond the scope of this dissertation.

[109] The monopoly market price theory was the dominant view at the time (late 1950s and early 1960s). It defined the monopoly price as the market price and viewed that it was continuously separated from the value under the influence of the monopolist (Kang S. 2008, p. 111).

clearly does not deviate from Marxist labor theory of value. We can confirm these facts from Kang's research, within which he is looking into how the software industry developed in order to identify in detail how the software companies have set up their prices of commodities. And in so doing, we come up against the real world in which the selling price of software is formed by Marxist monopoly price, centered around his explanations.

4.3.2 Monopoly pricing in the software industry[110]

Kang has made a point of examining the cases in which software prices are formed and maintained via Marxist monopoly prices as has transpired in the development process of the software industry. According to Kang, "Inside the software industry, especially as regards the general-purpose software sector (e.g. MS Word), the monopoly position of specific companies is very strong and long-lasting" (Kang S. 2008, p. 118). As we are well aware, Microsoft, for example, has long dominated the market for operating system software (Windows) used in personal computers as well as in software such as application programs (MS Office, etc.) (ibid., 119). In this regard, Kang examined whether this phenomenon was due to the characteristics of the digital information 'good' in general or perhaps alternatively the specificity of the software industry. To this end, he depicts the development process of the IT industry by dividing it into three periods.

(1) The first period was the so-called mainframe computer era[111] from the 1960s to the 1970s. The technological development of the mainframe, which started in the 1950s, is commercialized in earnest with the launch of IBM's System/360[112] in 1964. The

[110] The explanation below is heavily dependent on Kang's writings (Kang S. 2008, pp. 118-128).

[111] A mainframe computer is a computer used primarily by large organizations for critical applications, bulk data processing (such as the census and industry and consumer statistics, enterprise resource planning, and large-scale transaction processing).

[112] On April 7, 1964, IBM introduced the revolutionary System/360, the first large "family" of computers to use interchangeable software and peripheral equipment, a departure from IBM's existing product line of incompatible machines, each of which was designed on a specific basis to

difference between System/360 and previous computers was that the models were compatible with each other, which represented the first attempt to provide the conditions necessary to function as a platform. At that time, only about 17,000 computers were used by American companies, but by the end of 1969, five years later, the number had increased to 90,000. Among various contenders, the share IBM accounted for was about 65% to 75% of the market, and the sales overall of about $2 billion in 1964 grew to $16 billion in 1976. During this time, software was sold primarily as part of the hardware, but up to this point, it was rarely ever sold as a stand-alone product. However, a subsequent court decision requiring IBM to unbundle in response to an antitrust lawsuit in 1969 greatly contributed to the growth of software as an industry in the 1970s. In the late 1970s, most companies purchased at least some software as a commodity, and specialized service companies appeared that went beyond simple programs to provide consulting and the like. Here, as Kang points out, software had been provided virtually or apparently free of charge under terms of a 'total' package (including the source code), before the software appeared as an independent commodity. And it underscores how the cost required for software development is preserved (still today) through the sale of hardware. According to Kang, "To what extent this method was possible was determined by the monopoly power of hardware manufacturers such as IBM" (ibid., p. 123).

(2) The second period is the so-called PC era[113], when Microsoft's rapid growth and dominance over the Desktop Operating System market was established. In 1977, stimulated by Apple II's experimentation and success, IBM launched a PC model equipped with DOS for the early 1980s. In 1980, the number of PCs in the United States was less than a million, but by the end of the 1980s, it had reached 100 million. With royalties ranging from $10 to $60 for every IBM PC clone[114] sold, Microsoft's

solve specific customer requirements.

[113] Unlike a terminal in a mainframe system, a PC is an independent device with its own task performance capability, and various types of software provide this capability.

[114] IBM PC compatible computers are similar to the original IBM PC, XT, and AT that are able to use the same software and expansion cards. Such computers were referred to as PC clones, or IBM clones. The term "IBM PC compatible" is now a historical description only, since IBM no longer

sales would grow 150 times from $8 million in 1980 to $1.2 billion in 1990. In this process, the existing System/360 model, which was a vertically integrated system, became divided into four constituent parts: computer manufacturer (IBM), microprocessor manufacturer (Intel), OS company (Microsoft), and application software companies (Lotus, etc.). Accordingly, competition among these companies to obtain monopoly profits in the IT industry unfolded. In this competition, the so-called "Wintel Standard" of Microsoft (Windows) and Intel won out. Winning the OS competition, Microsoft became the dominant monopoly with over 95% of market share following the success of Windows 3.0 in 1990 and Windows 95 in 1995. Kang explains that software emerged as an independent commodity during this period, and that Microsoft would also go one to dominate the application program market represented by Windows Office, based on its monopoly position in the OS market. In particular, in this process Microsoft began to provide core software (web browsers, media players, etc.), i.e. those vitally important to their competitors' existence, via combination sales (tie-in sales) in order to maintain and strengthen the monopoly. The 'tie-in sales' strategy they chose was to distribute the software free (sic) of charge. "These facts confirm that the price of these software elements represents, in the first instance, a monopoly price that is determined completely independent of its value" (ibid., p. 126). But according to Kang, "Microsoft's success can also be evaluated as contributing to the process of the development of the software sector into an independent industry in its own right. The relationship between software and hardware was in fact thus reversed; establishing a model in which Microsoft's operating system, via its operation, is not software dependent on hardware anymore" (ibid., p. 121). If anything, hardware was becoming dependent upon its ability to support the software applications.

(3) The third period is the era of network computing. In the 1990s, with the progress of corporate informatization such as the Enterprise Resource Planning (ERP) system,[115]

sells personal computers.

[115] Enterprise Resource Planning (ERP) is the integrated management of main business processes, often in real time and mediated by software and technology. ERP is usually referred to as a category of business management software—typically a suite of integrated applications—that an organization

a networked system emerged in which PCs, though existing separately, were also connected to each other through a network. And in the late 1990s, due to the ensuing proliferation of the Internet, external users and even individual users became even more connected through a network. However, specifically PC-centered networking is still dominant, and as a result, Microsoft and Intel still dominate the market. In this situation, the advent of network computing brought changes to the competitive structure that had previously been vertically differentiated. As new competitors emerged and interdependence between companies gathered steam, mergers and acquisitions between companies increased significantly. In particular, the rapid spread of the Internet ushered in a process of moving from PC-based platforms to web-based platforms. In this process, the company that secures the lead will later acquire a favorable position in the IT industry, especially the software sector.

Parallel to that time, the emergence of Web 2.0, represented, for example, by companies such as Google, operated via a completely different mechanism, namely, via a platform. Here the PC as such no longer functions as a platform, but rather only is needed to serve as a device to connect to the completely new platform, namely, the Web. In such a situation, Microsoft's monopoly power, which has maintained its monopoly position by dominating the PC OS market, is seriously threatened. Several companies' attempts to proliferate web-based platforms, and Microsoft's new strategies to defend their monopoly position against them, are fiercely unfolding. It is important to note that in this process, much of the software was offered free of charge or at a level that was incomparable to previous prices ("for a fee only"). This phenomenon supports the validity of the position of explaining the price of software as resting on a monopoly price independent of value. Furthermore, it shows the impact of new technology developments on the competition between monopoly capital, with probably more impacts to come (ibid., p. 127). For example, if Microsoft was involved in limiting the possibility of developing new technologies to ensure its monopoly status, Google provided software free of charge to promote the adaption to a new development of

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can use to collect, store, manage, and interpret data from many business activities.

productivity in a way noticeably different from Microsoft's. And Google undertook a strategy to preserve this innovation via the ploy of advertising revenue. According to Kang, "This is a method of conserving R&D costs as distribution costs (marketing costs) of other products that are not directly related to software" (ibid.). By this time, the distribution cost is completely irrelevant to the labor time required to produce the commodity, and represents merely the cost involved to sell the commodity. Kang points out, "In order to produce and sell valueless software capitalistically, the whole society has to bear these costs" (ibid., pp. 127-128).

Kang's explanation as cited above supports the claim that the price of software is a monopoly price. And in particular, the monopoly price of software is suggested by the characteristics of software, not forgetting the monopolistic characteristics of the software industry. In other words, whether monopoly prices can actually be realized depends on how much monopoly power the software producing company has in the marketplace (ibid., p. 118). In this respect, the profits that monopoly companies like Microsoft can earn through the sale of software are in fact monopoly profits.

4.4 Conclusion

So far now, we have looked at how the value and price of software can be explained in the Marxist labor theory of value, focusing on the 'Information Goods Value Controversy' raised in South Korea. The reason why we pay attention to these debates is that, above all, the inherent value and price of digital information commodities are there explored and explained within the characteristics of digital products such as software. In other words, the inherent value of these commodities is close to zero, since once produced software requires no additional labor or cost to produce a second unit. In the labor theory of value, if no labor is invested in the production of commodities, these commodities become valueless things, and their original price is effectively zero. Furthermore, these commentators explain the cause of the appearance of valueless goods as costly commodities in the market as state intervention such as intellectual property rights, while also delineating the market price of software sold in the market

as the Marxist monopoly price. We agree with Chae and Kang, who explain the value and price of software against the backdrop of the Marxist labor theory of value. And it can be confirmed that their explanation is also a matter of the value and price of specifically media products, which topics have not been observed or dealt with in media economics so far. In other words, the value and price of digital information commodities that are easily copied and transmitted once produced are explained by Chae and Kang in the Marxist labor theory of value. This is clearly different from the value and price of software described in the PEM as is the case with Fuchs. In this vein, the reason why we so focus on the value of software in the Marxist labor theory of value is to examine eventually how the value explanation of digital information commodities can go on to explain the overall digital media environment in general. In this regard, it is necessary to examine specifically the implications of the discussion of the value of software in the Marxist labor theory of value for specifically media economy studies. To this end, we will examine in more detail how the problems that have been dealt with in the media economy studies in general can be explained in Marxist labor theory of value.

5 Literature Review and Possibility of Applicability

In chapters 3 and 4, we compared and contrasted two discussions under review that explain the value and price of software via Marxist labor theory of value. We hold that Chae's position, namely, that software can be reproduced without any cost or labor, is the more Marxist explanation as opposed to Fuchs' position of explaining the price of software in terms of the value of knowledge. Going forward, in chapters 5 and 6, we will offer support of Chae's assertions which aim at representing the reproduced software as valueless goods, while in tandem explaining the prices of these commodities by monopoly pricing, all this through both a literary overview as well as a review based upon the stark realism of the every-day market. Of course, Chae's argument is the result of a debate that has already been conducted in South Korea; and in the previous chapter we were able to demonstrate that his argument to a large extent is based on the Marxist labor theory of value. Nevertheless, to a more specific degree, it will prove necessary to further review his arguments, and to expand and enlarge the subject under discussion to media products as well, and to clarify the issues there even more positively (actively) from a Marxist standpoint. This is because the approach summarized and presented above is importantly different from most current general positions or assertions in the fields of media and communication studies; and at the same time, it is also contrary to Fuchs' stated position of seemingly inheriting the Marxist tradition. In other words, it is an exposition of the value and price of media commodities once produced, regardless of the materiality of the commodities, via the Marxist labor theory. In this respect, our discussion needs to suggest that the explanation of the value and price of software in particular can go on to explain the value and price of media products as a whole; and moreover, our endeavor needs to show that the analysis of the inherent value of digital information commodities can positively present implications for media and communication studies. In other words, the goal of our study does not merely evaluate Marx's work or compare Fuchs' and Chae's claims to a final conclusion, but rather focuses on the issue of value of a commodity in order to find a more correct approach to explain the overall digital media environment.

In this chapter 5 then, firstly, we will in addition expand and apply the previously discussed approaches and concepts onto digital information commodities in general, and examine certain research trends of media products analyses, focusing on that PEM that has inherited the Marxist research tradition. At this time, it can be re-confirmed that the PEM explains the inherent value of media products from the point of view of utility theory rather than one characterized by the Marxist labor theory of value. This critical review from us will confirm how the value and price of media products can be explained more lucidly in the Marxist labor theory of value, and furthermore, show the fact that Fuchs' argument discussed above inherits the academic tradition of the political economy of media. In other words, we can see how the problem of the value of media products in general can be explained in the Marxist labor theory of value. Second, we will examine the historical and philosophical background of how valueless objects have been commodified, performing a literature review of intellectual property rights. Through this, it is possible to check in more detail how valueless goods emerge as commodities in our (capitalist) society, and what role intellectual property rights have played in the production and sale of these goods. Third, we need to examine in more detail the assertion that the price of valueless goods is a Marxist monopoly price through the basic concepts of Marxist economics, and check how it is differentiated from the concept of monopoly price explained awkwardly and insufficiently in mainstream economics. This review process will show how the price of digital information goods is explained as a monopoly price in the Marxist labor theory of value, and furthermore, the fact that the monopoly price is an important theoretical foundation for proceeding to explain the digital media environment in the next chapter 7.

5.1 Trends in analyzing the value of media products in the political economy of media

First, the fact that copies of software are valueless things was an inescapable result, and derived from the characteristics of these products themselves, in connection with which we highlight those characteristics of media products which in fact even media economic studies have also dealt with so far, i.e., characteristics such as non-excludability and being non-

rivalrous. And in this context, we highlight that one main, particular characteristic of software, namely that the first unit of production requires a magnitude of labor, but from the second unit on little labor (or no labor) is required, can be applied not merely to software, but extended also to media products in general, produced and distributed in digital form. In this respect, analysis of the value of media products was one of the major issues for analysists in the political economy of media. In this section, we will examine the trends in analysis of media products explained in the political economy of media, and see that their research focuses on media content, that is, immaterial products or mental labor. And, moreover, we note the fact that, given that they never objectively explain the value of these commodities, they are de facto giving up on the Marxist labor theory of value. As a result, they cannot explain the 'inherent' value of media products, and arbitrarily leave the differentiation between commodities and goods undistinguished. In other words, they define all goods sold in the market undifferentiated as commodities. However, we will present a clearer definition of commodities from a Marxist point of view and examine the commodification tendencies in which goods emerge as commodities, the two being distinct. In other words, we will investigate critically their tendencies in analyzing media products, and will show what problems they still encounter as they try to explain matters from their one-sided understanding of a Marxist perspective; expressed slightly differently as: how can anyone explain the value of cultural and service products.

5.1.1 Media product analysis in the political economy of media[116]

Besides Christian Fuchs, media scholars such as Vincent Mosco (1996) have actively embraced the basic concepts of Marxist economics when analyzing media products.

[116] We divided the PEM into English-speaking and German-speaking countries in order to better examine the value and price of media products. However, such research on the value and price of media products were not easily found. Especially in the German-speaking world, there was no research on the value and price of media products at all. For example, Horst Holzer (1994) and Manfred Knoche (2002, 2013, 2015) do not directly address the value of media products. Recently, German-speaking media scholars such as Sebastian Sevignani (2016) have begun studying the value and price of media products in the same position as Christian Fuchs. However, we can better find the research trend of analyzing media products in the English-speaking countries. That is why, this section focuses on the research of Vincent Mosco (1996) and Nicholas Garnham (1979).

We can pursue the research trends in their analysis of media products as follows: This is a field of study whereby the social relations determined in the product are formed by digging into the products one after another (Mosco, V. 1996, p. 141). So, media product analysis in the PEM deals with the processes of commodity and commodification (ibid., p. 140).

> The history of newspaper production in capitalist society has involved numerous processes, including commodification, which makes the storyteller a wage laborer who sells his or her labor power, namely, the ability to write stories, for a wage. Capital turns that labor power into a newspaper article or column which, along with other stories and advertising, forms a packaged product. It sells the newspaper package in the marketplace and, if successful, earns surplus value; a profit, which it can then invest in expanding the newspaper business or in any other venture that promises additions to capital. Marxist political economy views this as the realization of surplus value because the control that capital wields over the means of production (ownership of presses, offices, etc.) enables it to receive in labor more than it pays out in wages.[117]

As seen above, the PEM has been analyzing media products by actively accepting the basic concepts of Marxist economics. However, if we look more closely into their product analysis, the subject of analysis is not the newspaper itself, but the content contained in the newspaper, that is to say, mental production or immaterial production. [118] According to Mosco, "The process of commodification in communication involves transforming messages, ranging from bits of data up to systems of meaningful thought, into marketable products" (ibid.). Therefore, the

[117] Mosco, Vincent 1996, p. 146.

[118] "When the political economists think about the commodity form in communication, they have tended to start with media content" (Mosco, V. 1996, p. 146).

general trend of media and communication studies focused on news content as the product; and, in the extension of this product, the emphasis was placed on discovering the link between the product's status and its meaning (see ibid., pp. 146-148). This classification of media products into immaterial products seems to be the traditional research trend of the political economy of media. We can see this in Nicholas Garnham's research (1979) which explains media products as cultural products. Here, Garnham describes the commodity produced by the media as an 'ideology' that is the result of mental labor (Garnham, N. 1979, pp. 123-146). In other words, the production of media products in a capitalist society is an immaterial product that is the result of mental labor.

At this juncture, we need to look more closely at just how the value of immaterial products in the PEM was analyzed. At that time, they were focusing above all on the fact that media products cannot be easily exchanged as a commodity in the market: "The problem with cultural and information goods is that, because their use value is almost limitless, i.e. cannot be destroyed or consumed by use, it is extremely difficult to attach an exchange value to them" (Garnham, N. 1979, p. 140). In this analysis, we can identify and highlight their particular focus in the study, which is, however, a confusion between, and a mixture of, 'production of', and the 'economy of', immaterial commodities. Garnham observes the phenomenon that once produced mental labor (immaterial product) can be sold in the market; and in defining these commodities as classic public goods, he does so mainly in reference to, and in terms of characteristics that cannot be easily exchanged. And he tries to explain the real world where classical public goods are commodified by applying and accepting the concepts of Marxist economics.[119] However, Garnham's analysis results in a confession that he did not find the clear answer he wanted from a classical Marxist point of view. In doing so, Garnham points out that, in his words, Marx's account has "very narrow limits".[120]

[119] Nicholas Garnham (1979) attempts to explain production of non-material goods such as public goods within the scope of terms using the concepts of productive and unproductive labor to which Marx referred (pp. 140-141).

[120] According to Garnham (1979), "Marx's belief was that capitalist production of cultural goods was possible only within very narrow limits" (ibid. p. 141). However, the passage of Marx quoted by

This is confirmed by Garnham's point that Marx's explanation is not extensively sufficient to understand the economic contradictions of mental labor, whereby in reference to Marx's position he states the following: "Marx clearly foresaw the difficulty of including immaterial production under capitalism" (Garnham, N. 1979 p. 140). And Garnham goes on to state that "the economic contradictions that arise from the nature of cultural commodities[121] take different forms within different sectors of the media, and at different historical moments" (ibid., p. 141). And pursuing this we can summarize the five ways which Garnham refers to the value (price) of mental products as follows: (1) Copyright Act (2) A method of controlling access to consumption (for example, the box office mechanism and distribution channel at the point of sale) (3) Time manipulation (4) Selling to advertisers rather than consumers, and (5) National sponsorship (Garnham, N. 1979, pp. 141-142). However, this explanation by Garnham describes merely how the market price, or namely, the selling price at which a media product is sold in the market, is determined.

5.1.1.1 Review 1: Value problem of immaterial products

We are able to ascertain certain research methods in the descriptions of Garnham and Mosco, who both defined media products as immaterial products and viewed the mental production produced by the mass media as an object of analysis. And these commodities are, as described, products exhibiting certain economic contradictions that make it difficult to attach exchange value. This represents an analysis in the study of the reality of media products which confirms that media products, once produced, can be reproduced almost without any additional cost or labor, and thus the problem of

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Garnham while explaining his argument is an appendix to the back of Volume 1 of *Capital*, that is, written by Ernest Mandel. Here Mandel is referring to the production of immaterial goods, such as cultural goods and services, while explaining the productive and unproductive labor described by Marx (Mandel, E. 1990, pp. 1047-1048). At that time and in this connection, Mandel states that capitalistic production of commodities such as cultural goods is only possible within very narrow limits. Garnham quotes this passage and offers an arbitrary interpretation: "Marx's belief that the capitalist production of cultural goods was possible only within very narrow limits."

[121] It refers to the non-excludability and non-rivalrous of media products.

the value and price of immaterial products arises and must accordingly be dealt with.

However, if we look closely at their explanations, the value contained in immaterial products is being assigned to other sectors and explanations other than the labor time required for commodity production. In addition, rather than explaining the problem of the inherent value included in media products, it explains basically only the issue of the selling price as formed in the market. This is confirmed by the five ways that the value of mental products, which Garnham explained previously, is determined. We see this attempted explanation being derived mainly due to the inherent difficulty involved in articulating exchange value given the nature of the commodity. This position is also confirmed in Mosco's publications (2009), where Mosco is actively embracing critical theory to solve this problem. According to Mosco, "the cultural critique also defines a boundary that political economy will not cross because the critique aims to do more than suggest gaps" (Mosco, V. 2009, p. 130). Here, the neglected part which Mosco refers to is the tendency to take use-value for granted in Marxist economics. According to Mosco, Marxist economics has apparently neglected the problem of usefulness in its tendency to take use-value for granted (see ibid.). The problem of usefulness pointed out by Mosco turns out here to be actually the magnitude of utility. In other words, while analyzing media products, observers tend to focus on the problem of utility because of the difficult nature of attaching exchange value. Therefore, the magnitude, scope and estimation of the inherent value of certain mental products has become re-addressed as a matter of the magnitude of its usefulness.[122] This is to restate in other language the marginal utility theory, namely, utility theory of value, positively accepted and even insisted on by mainstream media economics; that is, the value of a commodity being seen as the magnitude of utility. However, Marxist economics takes the position that the magnitude of commodities exchanged in the market cannot be determined by the magnitude of use-value alone; and it is this particular aspect of the Marxist labor

[122] "This critique reminds us that Marx's chief aim was to interrogate capital and, given the primacy of this interest, he neglected detailed treatment of ideas that embody the fundamental negation of capitalism, including use value and contours of a socialist or communist society" (Mosco, V. 2009, p. 130).

theory of value that differentiates it from mainstream economics, and one, moreover, implying that any analyzing of the value of media products in terms of utility theory of value in PEM must be based on Marxist economics.[123]

From the above review, we can interpret that multitudes of media scholars today, including Garnham, Mosco, and Fuchs, busy themselves with explanations of the value of media products, but ones not really in synch with the Marxist labor theory of value. For example, they accept cultural critics in their media studies, but they provide no explanation for the value or price of mental products such as ideology.[124] Rather, they point out the limitations of Marxist economics, and then add for good measure that Marx skipped the problem of usefulness. This seems to have resulted partially from a lack of understanding or from an arbitrary interpretation of Marxist labor theory of value. Because, their product analysis actually rather deals with the problem of utility, which is in essence no different from neoclassical economics, and even prescribes everything sold (exchanged) in the media market as commodities. In this respect, our discussion needs to clearly distinguish between commodities and trends in commodification. Not all goods become commodities just because they are sold on the market.[125] In other words, our discussion is the commodification tendency of capitalist markets where goods, not commodities, become commodities. At this time, the distinction between commodities and goods can be clearly identified when looking at the magnitude of the inherent value contained in the products. Since the PEM has never

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[123] "Adam Smith distinguished between the uses of hired labor that enabled the capitalist to make profits so as to further advance production and those which simply absorbed existing resources. Employing someone to make things to sell was productive; employing someone to tend to one's individual desires was not. In this sense, Smith saw not only servants being unproductive and wasteful. He saw civil servants living on state revenues as counterproductive and wasteful. Marx accepted Smith's method of distinction and argued that being productive is producing surplus-value. In all this, Marx was careful to make it clear that the productiveness of labor did not depend on the physical form or how socially useful the product was" (Harman, C. 2009, p. 121-122).

[124] The subject of cultural studies or the cultural critic is only directed towards the political and social phenomena of immaterial products such as ideology, and it remains a completely separate theory from the problems of the value or price of commodities.

[125] "Things that are not products of labor do not possess a 'value'. If they're exchanged, they have an exchange value or price, but no value, and this exchange value has to then be explained separately" (Heinrich, M. 2005, p. 40).

raised such an issue,[126] an audience is, for example, then also defined by them as a commodity. Furthermore, they introduce their academic tradition as veritable Marxist economics.

5.1.1.2 Review 2: Audience commodity and prosumer commodity

Resembling Mosco's argument that depicts the initiating of the PEM via products analysis, the media research of these commentators lists their analysis of media products in several different chapters (see Mosco, V. 1996, pp. 140-172). Looking at the passages that analyze media products in their literature, they explain the tendency of commodification or describe the characteristics of capitalist society in that these products are exchanged in the 'market'. Let us consider whether this be the case for descriptions entitled 'audience commodity' and 'prosumer commodity'.

First, 'audience commodity' conveys meaning in terms relating to a broadcaster's profit model, which attracts advertising revenue through program provision, mainly in the fields of the broadcast media such as television and radio (Mosco, V. 1996, p. 148). Dallas Smythe (1977), who introduced this concept for the first time, stated that broadcasters' profits are generated when audiences, who do the 'consuming' of broadcast media, are exposed to advertisements (Smythe, D. 1977, pp. 20-21). Such explanations are also applicable for the Internet environment (see Fuchs, C. 2009b, p. 82). For example, when many users are exposed to advertisements in notionally free apps and various Internet services, profits of Internet companies exist and increase. So much for 'free'. In addition, Internet users themselves produce data or content, and by sharing it, they themselves become simultaneously both information producers and

[126] Nicholas Garnham (1979) analyzed the inherent value of cultural goods, and examined whether the production of these goods was productive or unproductive labor. This approach was to show that the labor producing these commodities is productive labor and to explain the magnitude of value of these commodities. However, the main issue of the problem is not whether this labor is productive, but how the value produced once is transferred to the second unit. This fact has already been reviewed in the 'Information Goods Value Controversy', which we discussed in the previous chapter. We can also see additions in chapter 4, specifically in section 4.2.1 of this dissertation.

consumers. Earlier the commentator Alvin Toffler (1980) described this under the term "prosumer" (see Fuchs, C. 2010a, p.190). Recently, the PEM describes Internet users as a 'prosumer commodity' or alternatively as a 'produser commodity' (e.g. McGuigan, L. & Manzerolle, V. 2014). It is argued that the more audiences (users) use the Internet platform, the more their content is both consumed and produced at the same time. So, if they produce or even consume more, also in terms of time, the greater will be the value of the audience commodities they produce; and this because thus the price of advertising will rise higher, and the profits of Internet companies will increase further. Digital workers who produce and consume content on the Internet have become the exploitation class of a new era that guarantees high profits for Internet companies (Fuchs, C. 2010a, p.191). Such is the concept of the prosumer commodity that is defined in the Internet environment.

While the analyst Smythe established the concept of an audience commodity to describe the broadcasting industry, Christian Fuchs insisted on a prosumer commodity to explain the digital industry. However, their arguments seem to have little to do with concepts emanating from Marxist economics. Karl Marx explains in his book *Zur Kritik der politischen Ökonomie* ("A Contribution to the Critique of Political Economy") how production and consumption are in important ways the same, but at the same time different (see Marx, K. 1961, pp. 622-626). According to Marx (1961), our consumption of something is a process of producing something at the same time. For example, in one form of consumption, say, the intake of food, humans produce their own bodies (p. 622). As such, the activities of people using the Internet are consumption and production activities at the same time. However, this does not mean that their activities are "productive" or produce "economic" value. The exchange relation is not the relation between online media users and online media owners, but the media company with its employees, and the media company with other companies (Kangal, K. 2016, p. 421; see also Caraway, B. 2016, p. 76). Meanwhile, the data of Internet users is not a commodity sold to advertisers, but a result originally of the productivity brought about by digital technology and represents a social characteristic of labor products. For example, natural resources exploited (used) by capital are

transformed and commodified in the capitalist mode of production. In other words, just as a human being requires lungs with which to breathe, “He requires something that is the work of man’s hands, in order to consume natural forces productively” (Kangal, K. 2016, p. 421). In this respect, Internet users’ data are also inherently valueless goods such as natural resources. That is, goods that have no “economic” value. However, valueless data has been transformed into a commodity in our society. This fact becomes more clear in the explanation of the inherent value and price of those data. In other words, once digital data such as natural resources are produced, no additional cost is required for (re)production.

Even if not via Marx’s explanations, the critical reviews addressing the term ‘audience commodity’ is also confirmed by Garnham. Garnham criticized Smythe’s theory, one which explains profits arising from the structure of the broadcasting industry, in the following words: this definition cannot explain the functions of cultural products that are directly exchanged, and moreover, does not fully explain the role of the state and the functions of advertising capital (Garnham, N. 1979, p. 132). And he points out above all that “the audience commodity produced by the mass media cannot explain the relationship between class and class struggle” (ibid.). These criticisms of Garnham point out that Smythe’s analysis of media products has little to do with capitalist mode of production or with an understanding of society as a whole. This is because obviously it was unclear what class the audience belonged to. In other words, it is a cogent criticism which points out that it is not possible to understand the broadcasting industry or to explain capitalist society as a whole through the audience commodity theory.[127]

In this respect, the audience commodity theory is simply overwhelmed by the

[127] The argument that the audience's TV viewing behavior creates surplus value, and therefore, that consumption behavior can also be productive, was already criticized for being in conflict with the labor theory of value that surplus value occurs only in the production process (Im, Y. 2000). In this regard, Christian Fuchs (2010a, 2016) is claiming a new class, namely, so called ‘multitude’ to explain the concept of prosumer commodity. Already at this time, the concept of multitude had been proposed by Michael Hardt and Antonio Negri (2000). In other words, Fuchs argues for the emergence of a new class in order to explanation knowledge labor, all of which however interesting, comes from outside Marxist economics.

phenomenon of being sold in the market, with all that that implies; and then it should not be forgotten that they had very questionably termed the audience itself as a commodity. Of course, the tendency of commodification in capitalist society is to analyze such things according to the following dynamic: there are products which have no value but can appear as commodities in the market. So, they explain that the audience itself can also be sold as a commodity in terms of a general tendency towards commodification. However, we can detect something missing in their analysis of the inherent value of these commodities. In other words, in order to assert the audience commodity theory, it is necessary to discuss what the inherent value of the audience actually is. If the product has no value, it should be defined as a good and not as a commodity. And if valueless goods are exchanged (sold) in the market, it is definitely a subject of discussion to examine how the valueless things can emerge as valued commodities. However, we can only note down their claims that an audience commodity is merely the audience exchanged as a commodity. This is because they, from the beginning, deal with the value of media products actually only in the shape of utility theory of value. From the outset they did not recognize the vital differentiation between the Marxist labor theory of value and the utility theory of value. Thus, some Marxist researchers such as Fuchs explain the high profits of media companies via the concept of audience commodities.

5.1.2 Media product analysis via Marxist labor theory of value

In the Marxist labor theory of value, the value and price of commodities are explained by the social labor time required to produce these commodities. In this regard, the PEM has also tried to explain media products in the Marxist labor theory of value. However, in the product analyses conducted so far by them, mental products (immaterial products) such as knowledge, information, and ideology have been at the center of discussion, and has basically stopped there. It seems that this research approach is overwhelmed by the fact that mental products are sold on the market, and it does not take a more detailed look at the labor time required to (re)produce these products. However, it is necessary to clearly recognize the fact that the core of the labor theory of value is the

social labor time required for the production of commodities. In other words, if these products can be reproduced without any additional cost or labor, then the theory concludes that they also have no value. Therefore, it is still necessary to dissect the commodification tendency of the capitalist market, where valueless goods are produced and sold as 'full-fledged' commodities in the market. Moreover, even within that PEM which accepts the basic concepts of Marxist economics, they have not been able to focus on the value analysis of these products, but have been outpaced by a real world where these are already sold as commodities in the market; they can only repeat their argument and accordingly limit it to the observation that these products contain knowledge or information. As a result, concepts such as 'audience commodity' and 'prosumer commodity' are being presented indiscriminately.

Conversely, Chae and Kang's discussion focused on how the value and price of software can be best explained in the Marxist labor theory of value. Above all, Korean debaters did not focus on the materiality of the product, but examined the value of commodities in the Marxist labor theory of value;[128] Moreover, media economy research, if at all trying to explain the value of immaterial goods (e.g. media contents, mental products, knowledge commodities, cultural products), has only so far done it insufficiently. This means that the research object itself is set differently in the study in order to explain the value and price of a commodity.[129] In other words, Korean debaters explain in detail, based on the labor theory of value, that knowledge or information

[128] According to Kang (2008), "From the labor theory of value, what has value is not knowledge or information in and of itself, but more properly the resultant product that is the product of knowledge (information). If software is viewed as knowledge, knowledge itself becomes a commodity; but in that case, this all becomes merely a different name for the same object, equating knowledge and software. Therefore, the value of R&D labor (research and development labor) for producing and developing software, whether it be the knowledge that can produce the software or the software itself (software cannot be forgotten as is the case with a mental state), must be equal to the labor time required to reproduce the software".

[129] We are thinking that the research tendency of media scholars who tried to explain the value of immaterial products stems from the excessive influence on them from the utility theory of value. However, in mainstream media economics that actively embraces neoclassical economics, it is perhaps natural to study the value of utility. This is because, in the utility theory of value, the value of immaterial products is viewed as a subjective problem from the beginning, and the 'inherent' value contained in a commodity is not considered.

itself cannot be a commodity. In addition, they focus on the fact that software, once produced, can be reproduced without any additional cost or labor. Hence, the value of a commodity in Marxist economics is maintained as equal to the labor time required to reproduce the software. Therefore, their discussion is focused on what they see as ultimately the more descriptive process in this regard, namely, the process of an extra- or supra-market (‘deus ex machina’) intervention in which valueless goods gain commodification and are commodified.

And in this respect, the discussion of Chae and Kang has implications for media economy research. First of all, although claiming their theoretical foundation is in Marxist economics, the PEM proponents has not been unguilty of analyzing media products outside of Marxist labor theory of value. And in mainstream media economics, which focused solely on the issue of utility, there too the inherent value or price of media products was not discussed. However, in a capitalist society where products are exchanged in the market as commodities, Marxist labor theory of value, which focuses on the magnitude of the value contained in each product, still is able in its way to actually explain the value and price of digital information commodities. In other words, it can be confirmed that the analysis of the value and price of media products can also be conducted independent of the materiality of the product, if in a distinctive way.

On the other hand, in the study of media economy, those research trends that offer definitions of media products as cultural products, service products, and public goods represent no problem and can be positively affirmed. These studies seem to be an approach to elucidate the high economic value of media products that are easily copied and transmitted once produced (see Kiefer, M. 2001, pp, 129-141, pp. 161-164). In this regard, we need to look at how the inherent value of cultural products or service products can still be explained in terms of the magnitude of labor time. And it is necessary to examine how the meaning of public goods can be explained based on the labor theory of value in Marxist economics. Through this, we will examine the differentiated approach that Marxist labor theory of value can suggest to the study of media economy.

5.1.2.1 Value of cultural products

What explanation can the Marxist labor theory of value provide, and how, when defining media products as cultural or artistic products? In Marxist labor theory of value, it is explained that the price of cultural products is a collection price that has absolutely nothing to do with the labor of the artist. "A work of art is a product of labor, but unlike normal commodities, it is a unique object, something that exists only once. The price that a buyer is prepared to pay for it is a collector's price, which has not the slightest to do with the labor expended by the artist" (Heinrich, M. 2005, p. 40). In this way, Marxist labor theory of value still explains the price of cultural products in terms of labor times.[130] In other words, the price of cultural product is determined by the characteristic of these products that they are produced only once.

Accepting this point, even if media products are defined as cultural products or mental labor, the value of these commodities can still be explained by the amount of labor time involved. For example, the value of newspaper article (mental labor) is defined by the labor time required to make the product. Of course, here the familiar, similar pattern is repeated: high cost is required for the first unit production, but once the content is produced, it is reproduced simply by duplicating it. Once produced however, newspaper articles do not need to be reproduced in order to sell the commodity. The original here is perhaps enough. This is also confirmed in the purpose of producing newspaper articles (content) as well as scientific knowledge. Newspaper articles or content is (re)produced for the purpose of understanding and for putting the content to use. Something similar can apply to the nature of R&D labor that produces software. No one need tries to reinvent the wheel or to independently reproduce again already-known scientific knowledge or news information. Presently, however, in the capitalist market, methods are being sought to sell newspaper articles that are copied (reproduced) without any additional

[130] In cultural studies, it seems that the issue of the value of cultural products has never been discussed. Researchers in cultural studies have generally investigated how cultural practices relate to broad systems of power that operate or are associated with social phenomena such as ideology, class structure, ethnicity, race, sexual orientation, gender and generation.

cost at a yet higher price than even its initial inherent value. This ties in with Chae's arguments and position discussed in the previous chapter. In other words, the core of the issue is how goods that in some cases do not warrant being produced or sold in the capitalist market yet emerge as full-fledged commodities.

5.1.2.2 Value of service products

In Marxist economics, the term 'commodity' does not simply mean the material objects being exchanged. For example, when we see media products as service products, what matters is not the material object being exchanged, but the very act of exchange. The difference between material and immaterial products (services) is that the time relationship between production and consumption is different. Material products are produced and consumed at regular intervals. However, for immaterial products such as service products, both production and consumption activities occur at the same time.[131] On the other hand, whether they become commodities or not is related to what social form they happen to be in or take on. In other words, in a capitalist society, services can certainly be exchanged, and in this sense, they become commodities. In addition, if value is realized by being sold in the marketplace, such labor creates both use-value and value.[132] At this juncture, the inherent value or price of the service product should be converted into the average labor times of the society.[133] Of course, the price of a service product is not necessarily expressed in terms of

[131] Services can also be exchanged and therefore become commodities. The difference between a material product and an immaterial service consists solely of a different temporal relationship between production and consumption. The material product is first produced and subsequently consumed. In the case of a service, the act of production is concurrent with the act of consumption (Heinrich, M. 2005, p. 42).

[132] R&D labor employed by capital to develop software is labor that satisfies someone's desires and needs. Therefore, such labor creates use-value, and in this sense, is productive labor (Kang, S. 2009, p. 280).

[133] Marxist economics explains that the market price activates up and down the prices of production, and at the same time continues to move to converge to the prices of production. The prices of production here result from the sum of the cost-price and the average rate of profit (Heinrich, M. 2005, pp. 144-148).

its inherent value.[134]

Here we need to look at Garnham's account, which focuses on the question of whether a teacher's labor is productive or unproductive (Garnham, N. 1979, p. 141). While analyzing media products, Garnham defines media products as service products and focuses in this connection on the labor of teachers. We can also visualize what Garnham's approach would most likely be in the Korean 'Information Goods Value Controversy'. Garnham argues that since the teacher's labor is productive labor, that is, labor that produces value, this value is divided into the next products. But the core of the problem is just how is the value produced to be transferred to the second product? This same problem was also raised in Fuchs' position as he attempted to explain the price of software.

In this respect, we can criticize Garnham's position, which defines media products as service products, and tries to explain the value of media products as such. At the core of the issue is not the debate as to whether the labor that produces media products is labor that produces service products, or whether their labor is in fact 'productive' labor. The value of a media product must be measured in terms of the labor time required to copy (reproduce) it, which can be something quite different.

5.1.2.3 Value of public goods

What are public goods in Marxist labor theory of value, and how can the value of public goods be explained? In point of fact, there is no interpretation or conceptual regulation of public goods in Marx's work. However, we can still examine the meaning of public goods through the conceptual division of 'commodities' and 'goods' as follows. First of all, as we have already seen, commodities contain both value and use-value. In Marxist economics, products that contain no value on the other hand are called "goods". Here, the absence of value in a product means that the purpose of producing a product

[134] Consider the gap between real price and inherent value.

is not production for exchange as such. (It can be said that it was not produced in the capitalist mode). In other words, a product produced by and for one's own needs can hardly be a commodity. Also, even if it produces use-value for others, it cannot become a commodity without transfer through exchange.[135] For example, an item made to give to a friend is not a commodity. Also, the labor of cooking for the family is not productive labor because it is not exchanged (sold) as a commodity. In other words, food prepared for the family has a use-value, but is not a commodity for sale. On the other hand, it is also now very much the opposite case (reference the digital world) that sometimes goods that have no value can indeed be sold as commodities in the market; and these goods appear as commodities in the market because of the unique characteristics of the capitalist social form. For example, digital information goods produced once are easily copied (reproduced) and sold as commodities.

After distinguishing the concepts of commodities and goods in this way, the concept of public goods can be more clearly elaborated and defined. In other words, public goods are goods produced for the benefit of all social and community sectors, and can be said to be products not intended for sale. These conceptual definitions can be presented when distinguishing the concepts of 'value' contained in a product and that of 'use-value'. At this juncture we remind ourselves that, just because certain goods are produced and sold as commodities in the market, it cannot be determined necessarily that they are then bonafide commodities; and the insights and regulations here presented are different from the concept of public goods described in mainstream media economics. Mainstream media economics define media products as public goods in terms of the characteristics of 'non-excludability' and 'non-rivalrous'.[136] So, they emphasize the public interest of the media, but there is no questioning raised in their

[135] According to Friedrich Engels, the medieval peasant produced a corn-rent for the feudal lord and a corn-tithe for the priest; but neither the corn-rent nor the corn-tithe became commodities simply by being produced for others. In order to become a commodity, the product must be transferred to the other person, for whom it serves as a use-value, through the medium of exchange (Marx, K. 1990, p. 131).

[136] Economic goods are classified according to their marketability, i.e., whether they can easily appear as commodities in the market. There is no exclusion principle or consumer rivalry, one speaks of a public or collective good with various distinctions (see Kiefer, M. 2001, pp. 132-134).

thinking with the phenomenon that these goods are sold as commodities. And in the capitalist market, where public goods are already privately exchanged, the public interest of the media becomes an ideal wish.

To this end, Chae and Kang clearly distinguish digital information goods from digital information commodities. They define products as digital information goods in that the reproduced software has no value. And thus, is analyzed the characteristics of the capitalist market where goods can be exchanged as commodities. In addition, they go on to suggest interestingly the possibility that digital information goods can be produced and delivered for all members of society as public goods.

5.2 Media economy studies and intellectual property rights

In today's digitalized production mode, there, of course, exists technical limitations that can prevent the reproduction or copying of a product once produced. Hence, in his commentary, Chae focuses on the way in which valueless goods such as software are commodified via the legal intervention of intellectual property rights. In other words, when digital information goods produced once are copied and distributed, any physical or technological restrictions that can prevent the copying become that much more difficult. So, his argument presumes that digital technology is universal, and his conclusion is that digital information goods cannot be produced and sold in a capitalist mode without the machination of intervening legal devices such as intellectual property rights.

We need also take a closer look at the process by which intellectual property rights confer artificial monopoly rights to commodified goods that cannot be privately owned. To this end, in this current section, we can find out how the copying of media products is restricted by law, focusing on the literature of Ronald Bettig (1996), which describes the historical and philosophical background of intellectual property rights. Through this, we can examine the tendency of non-commodity goods to be commodified in our society, and further confirm the fact that these legal interventions actually function for the copyright owner, that is, capital, and not necessarily for the initial creator, the writer

or artist. In other words, the legal intervention of intellectual property rights is explained as the relationship between the state and capital for the accumulation of capital in a capitalist society, which can, moreover, be otherwise seen also as state intervention to guarantee monopoly profits for media monopolies. This approach provides a new perspective on the understanding of today's digital media environment, which is a main thrust of this paper.

5.2.1 Early history and philosophy of intellectual property rights[137]

First, we will check the history and philosophical background of intellectual property rights through Canadian media scholar Ronald Bettig. Bettig (1996) explains that the first European copyrights came from the medieval Benedictine Abbey setting. According to him, "The Roman Catholic Church learned the value of the library in that it developed a way to lend out hand-finished manuscripts (p.13). It centralized the production, preservation and dissemination of artistic and intellectual knowledge. Thus, "Access to the manuscript is (became) another privilege, such as possessing wealth" (ibid.) And they started to demand payment for the right even to copy the manuscript. This practice was unheard of in ancient Greek or Roman times (see Bettig, 1996, pp. 11-14).

At that time, this practice was centered on the church, and monopoly of knowledge or literary property was extremely local. However, as improved communication methods such as correspondence and books appeared in cities where trade was fast-growing, first in Paris and then in the university districts of other cities, a transformation was unavoidable. This change in the communication system (communication method) soon heralded the disappearance of the church's knowledge monopoly (ibid., p. 15). And this because it was also the time for the first publishing houses to appear.[138] Bettig

[137] The following relies heavily on the literature of Ronald V. Bettig (1996).

[138] At that time, copies of books were still made by hand. However, as merchant capitalists organized urban trade, the trade in publications continued to increase.

describes the situation at the time as follows: “Publishers organized, for a fee, duplication of texts for buyers looking for specific manuscripts, and worked under strict university regulations. The university censored the works for textual accuracy and controlled the price” (ibid.).

The revolutionary development of the printing press made copying texts easier and faster. And with the arrival of the printing press in Venice, the publishing business there developed noticeably (ibid., p. 16). At this time already, the publishing businesses in Venice could be made and viably maintained through the innovative legal intervention of copyright. “When John of Speyer brought the press to Venice in 1469, the Venice Collegio granted him exclusive printing privileges for a term of five years. By extending these recognitions and privileges, the city government sought to encourage the import of new industrial technologies and promote the growth of local industry and commerce” (ibid). Bettig describes this as “first appearing in Venice in the fifteenth century; this granting of exclusivity by the state formed a precursor and subsequent foundation of a later extended copyright system” (ibid.). In addition, publishers’ privileges at the time were “given to selected companies in exchange for political allegiance, and were also used as a way to support new industries” (ibid.). In this respect, Bettig evaluates the history of the nascent copyright identified in Venice as constituting a novelty and, “thus bringing us to the essential connection between intellectual property rights and capitalism” (ibid.).

Laws regulating the printing and publishing trade became common in many European countries at the beginning of the 16th century. In particular, the process by which British commercial capital introduced the printing press and the way in which these monetary capitals secured monopoly rights in the publishing business provide unmistakably the origins of British copyright law.[139] At the time, the British government tried to lure printers and bookstores into the country and encourage the development of the book trade. Regulations such as licensing of printing presses and

[139] According to Bettig (1996), the history of English print technology began in 1476 when a merchant capitalist William Coxton set up a printing press in the precincts of Westminster Abbey (p. 17).

censorship of book titles and ratings were tightened for example (see ibid., pp. 17-19). In particular, in 1557, King Philip and Mary approved the founding of the publishing house 'guild', giving them exclusive rights to print and publish in England for the next 150 years.[140] This exclusive right now implies legally that only licensed printers and booksellers can make legal copies. As a result, the economic rewards of the commodification of literature flow to printers, publishers, and bookstores, not necessarily to writers. And in the process of gradually expanding the printing and publishing business, the public begins to search for various old works as well.[141] Thus, writers who made a living previously through sponsorship were now transformed in the late 17th century into writers paid by publishers.[142] Now even as we see writing at the end of the 17th century already becoming a way for authors to earn a living, the industrialization of literary activities forms in parallel, and the compensation system for writers completely changes. Conversely, bookstores who secured copyrights became employers of workers with pen and ink. And writing became increasingly a financially rewarding work, and competition in the marketplace became a matter of survival and a question of just whom, if anyone, could make a living from art and literature (see ibid., p. 19).

From the above description, we can confirm the historical origin and philosophical background of the commodification of literary properties. Above all, the right to copy manuscripts was monopolized by the ruling class; and later, with the invention of the printing press, the publishing business grew through state legal intervention. However, literary works, which were originally once the property of the entire community, are

[140] This license was renewed twice in 1662 and in 1694, and the first modern copyright law was enacted with the passage of Queen Anne's Act in April 1710 (Bettig, R. 1996, pp. 22-23).

[141] At that time, publishers began to pay authors for the right to copy and publish their work. Bettig explains that the payment for copying originals began with the publication of Milton's Paradise Lost in 1667 (ibid. p. 18).

[142] "For this work, Milton left us the first recorded agreement in which a publisher paid "copy money" for an original work, though it earned him a mere ten pounds total before his death in 1674. His widow, who inherited the copyright, sold all further rights to the "copy" for eight pounds. Ploman and Hamilton concluded that such payments were not based so much upon legal or moral grounds as upon (urgent) economic grounds" (Ploman, E. & Hamilton, L. 1980, pp. 11-12; Bettig, R. 1996, p. 18).

being increasingly privately owned and commodified in a capitalist society. As a representative example, Bettig adduces the times of ancient Greece and Rome, when literary works were not produced to be sold as commodities. These were general goods, products of labor with only (high or low) use-values. However, as the capitalist production mode became popular, most goods become commodities, and legal intervention became feasible and well-nigh inevitable because of the development of science and technology.

5.2.2 Copyright law for copyright holders

Clearly, intellectual property rights emerged along with and derived from the development of science and technology. The development of science and technology here refers to the invention of printing, digital technology, and now AI automation technology. The development of these productive forces requires ever stronger intellectual property rights. Such technological progress and the necessity of intellectual property rights are also being discussed as an important theme in mainstream media economics (e.g. Kiefer, M. 2001, pp. 274-279). However, mainstream media economists are accustomed to explaining the need for intellectual property vis-à-vis literature from the following perspective: “The author’s intangible works are characterized by protection by copyright, the right of reproduction, and the right of distribution. An author’s income is usually guaranteed by copyright, as it depends on the number of his works sold. In addition, copyright provides material incentives for cultural and artistic producers such as artists to increase production” (ibid., p. 277). In other words, it is pointed out that, without the intellectual property rights, material compensation for ownership or creative activities of easily reproduced intangibles is practically impossible. So, mainstream media economics adds that intellectual property rights, in accordance with their view, is a positive motivator for production activities for authors who want to gain private profit from capital.[143]

[143] German media economist Marie Kiefer (2001) introduces Goethe’s Faust as a representative

However, the need for intellectual property rights is not solely to protect the property of creators or to motivate artists to quality creative activities. By all means, the extension and protection of intellectual property rights can likewise be redirected and geared for the copyright owner, and not necessarily the creator. In this regard, Bettig (1996) points out that the intellectual property system is not really a reward for the original creators or, equally important, for society as a whole.[144] And this is confirmed by the fact-finding of culture and information products owned and managed by media conglomerates in the United States (see ibid., pp. 49-68). For example, power elites (the ruling class of the state) extend intellectual property rights into new technological and geographic areas, as can be identified by the ownership and control exercised by major media companies and their property holdings or copyrights. Furthermore, these results are reflected in the monopoly structure in which a small number of individuals and small groups own and dominate the global media industry.

In order to actually publish something, creators are often obliged to hand over ownership of their work to those who then eo ipso own it.[145] These later are the people who have the best means to spread (sell) their work.[146] These later are the ones determining when and where works of art or literature should be distributed in order to achieve the maximum possible return (see ibid., pp. 35-36). According to John Feather

example of this (p. 277).

[144] "The counterclaim developed here is that the intellectual property system results in the unequal distribution of the rewards for human intellectual and artistic creativity, especially to the detriment of actual creators, and that it primarily benefits the capitalist class rather than society as a whole" (Bettig, R. 1996, p. 44).

[145] Transfer of copyright is prohibited in Germany. However, in Korea and the United States, copyright is easily transferred. Assignment of copyright in these countries is already specified in the applicable Copyright Act. Although the transfer of copyright is not legally guaranteed for every country (as is the case in Germany), it is increasing noticeably in the digital environment. Thus, one could call it a copyright industry. In 2021, indeed, the value added by the total copyright industries to GDP exceeded $2.9 trillion, accounting for 12.52% of the U.S. economy (Stoner, 2022). There are cases in which big tech companies easily transfer copyrights owned by previous companies to themselves in the process of acquiring and merging numerous companies. For example, Google acquired Motorola in 2011 and resold it to Lenovo two years later, excluding most of its patents (Kim, 2014). Cases in which creators' rights are no longer protected have already become a serious problem worldwide.

[146] "The ruling capitalist class owns and controls the means of communication and is therefore able to manage the production and distribution of information and culture" (Bettig, R. 1996, p. 35).

(1996), “The copyright owners who dominated British publishing in the mid-17th century made this possible because they had dozens of valuable manuscripts or copies that they had inherited and purchased since the 1590s” (Bettig, R. 1996, p. 20; Feather, J. 1988, p. 41). They operated in a classic monopoly fashion and bought up all pertinent rights to copy the book. And they colluded with each other to limit competition in the relevant markets. Eventually, they charged a price higher than the market price for their product. Moreover, we seriously question the position that the strengthening of intellectual property rights guarantees the income or activity of creators and leads to high productivity. It certainly can, but the over-loud assertion that the strengthening of intellectual property rights affects both the rights of authors (creators) positively as well as the quantity and quality of their products can likewise also serve to obscure the essence of the problem. The core of the problem is that the substantive rights of intellectual property rights can be easily and simply transferred to others.[147] Therefore, the exercise of these obtained legal rights is a reality needing to be realigned in that such materials are already easily owned by publishers, book brokers and distributors with hardly a second thought for the artistic creator.

On the other hand, critical views on intellectual property rights are indeed being raised from various perspectives today. For example, modern legal scholars such as Lawrence Lessig (2002), and so-called ‘copyleft’ activists, as well as free software activists are critical of many of today’s intellectual property rights. According to them, intellectual property rights rather restrict than promote creative activities; they harm health (in the case of pharmaceutical patents), and can be harmful to the public interest.[148] In addition, mainstream economist Michael Boldrin (2009) prefers the term “intellectual

[147] For example, Paul McCartney does not own the rights to the songs he wrote for the Beatles, being outbid for them when they came up for sale by non-other than Michael Jackson with whom he had a number one hit duet record (see Bertram, C. 2019)

[148] Although not from the position of Marxist economics, the effectiveness of intellectual property rights is nonetheless being critically debated due to the unique characteristics of media products. However, their critical views do not expand to include a discussion on the value and price of commodities or to expand this into an overall analysis of digital capitalism. They remain centered only on legal validity or legal ambiguity issues (e.g. Lawrence L. 2002).

monopoly" to intellectual property rights.[149] As such, criticisms of intellectual property rights are being raised from various sides and viewpoints. Here, not only the semantic validity between property and rights, but also the ambiguity and abstraction of the legal term itself are undergoing discussion. Even if it is not exactly in every case the concept of commodification trends suggested by Marxist economics, critical views on intellectual property rights are sufficiently presented from various positions. This is because conflicts over intellectual property rights are intensifying in new industries such as biotechnology and nanotechnology within the galloping development of science and technology. In other words, the conflicts between intellectual property rights identified today and the adjoining debates engendered thereto, that is to say, conflicts to produce and sell products even other than commodities, are at the source the result of scientific and technological development.

5.2.3 Intellectual property rights and the role of the state

What is clear is that differences of opinion in regard to intellectual property rights are growing more and more in the digital society. However, it is necessary to examine the viewpoints from which these differences or criticisms were raised and what results are being drawn. For example, legal scholar Lawrence Lessig (2002) or the 'free software movement' are raising criticisms of intellectual property rights in connection with the important principle of the openness and neutrality of the Internet.[150] And the 'Free Software Foundation' and 'Free Press' insist on free digital information products while emphasizing net neutrality.[151] Their argument is that products that cannot be

[149] According to Boldrin and Levine (2009), "Strong patents do nothing to encourage innovation, primarily because they are explained primarily by their tendency to create monopolies in the market (see pp. 337-342).

[150] Richard Stallman, who served as founder of the GNU project and the free software movement, notes that this action will promote rather than hinder the progression of technology, since, "It means that much wasteful duplication of system programming effort will be avoided. This effort can go instead into advancing the state of the art" (The GNU Manifesto, in: gnu.org. Retrieved from https://www.gnu.org/gnu/manifesto.de.html).

[151] The mission of free press includes, "saving Net Neutrality, achieving affordable internet access for all, uplifting the voices of people of color in the media, challenging old and new media gatekeepers to serve the public interest, ending unwarranted surveillance, defending press freedom, and

considered technically or legally exclusive should be used for the benefit of the community as a whole. So, they are claiming the possibility of a "sharing economy". In such a case, the state would then be depicted in the main as an institution responsible mostly for consensus and coordination functions (see Kiefer, M. 2001, pp. 254-255).[152] However, these explanations do not address how our society accumulates capital. In this respect their argument and the position of Marxist economics are distinguishable. For example, their position on the state, as well as on laws that maintain and strengthen capitalist means of production, are completely different, and that from other viewpoints as well.

In Marxist economics, the state and law are by no means identical or to be understand in this way. State and law should always be looked at through economic relations.[153] These originally Marxist injunctions are embodied mainly in Engels' later works;[154] one of them operates from a view of a base (Basis) and of a superstructure (Ü berbau); another operates with a view of the state as an instrument of the ruling class.[155] In this respect, according to the German Marxist economist Michael Heinrich, the state has to continuously and directly intervene to encourage and enable capitalist production

reimagining local journalism. The group is a major supporter of net neutrality" (Kang, C. (2008), "Net Neutrality's Quiet Crusader: Free Press's Ben Scott Faces Down Titans, Regulators in Battle Over Internet Control", in: *The Washington Post*, 28: March 2008. Retrieved from https://www.washingtonpost.com/wp-dyn/content/article/2008/03/27/AR2008032703618_pf.html).

[152] The state should serve the public interest or the common good, i.e., represent the population of all citizens of a society (see Kiefer, M. 2001, pp. 254-255).

[153] Marx identifies the economic structure of society as "the real foundation, upon which there arises a legal and political superstructure" and emphasizes that "neither legal relations nor political forms could be comprehended in isolation, whether by themselves or on the basis of a so-called general development of the human mind, but that, on the contrary, they originate in the material conditions of life" (Heinrich, M. 2005, p. 203; MEW 13, p. 8).

[154] A few general elements of a theory of the state can be found in the later works of Engels, the *Anti-Dühring* (1878) and above all *The Origins of the Family, Private Property, and the State* (1884) (see Heinrich, M. 2005, p. 202).

[155] From the point of view drawn from the former, the economic "base" (productivity, production relations) essentially determines the political "superstructure" (state, law, ideology) and every phenomenon of the "superstructure" must have a corresponding cause in the "base." In the view articulated in the latter, the state is an institution that uses violence legally, and ruling class is able to use the state as an instrument of domination. Marx's regulations such as these guide us to understand the state institutions and politics in the form of capitalist society (see Heinrich, M. 2005, pp. 202-218).

(Heinrich, M. 2005, p. 209). In other words, being as a capitalist society functions via a rule of law, all citizens must obey the same laws and notionally enjoy the same rights and obligations. Thus, the state theoretically plays a neutral role for each citizen, but then again, through this assumed neutrality, the foundation of capitalist domination and of exploitative relations remains secured.[156] Protecting property, for example, means that labor power must be sold to people who have no property other than labor power. In other words, wage laborers must submit to capital in order to make a living.

On the other hand, according to Michael Heinrich, "the state also guarantees the general material conditions for the accumulation of capital, insofar as these conditions cannot be established by individual capitals in a capitalist way, since doing so would not yield a sufficient profit" (Heinrich, M. 2005, p. 210). Among these conditions are the establishment of infrastructure, research and education facilities, and the formation of monetary policy through central banks. The state pursues the capitalist general interest to collect and accumulate as much profit as possible mainly through policy. In this case, the interest of the general public is not always afforded equality with the specific interest of individual capital or individual capitalists.[157] In this respect, Heinrich points out that the capitalist process of production does not only produce commodities, but reproduces the prerequisite capital relations as well.[158]

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[156] "Under capitalist social relations, direct political force is not necessary for the maintenance of economic exploitation: it is sufficient for the state as a force standing above society to guarantee that all members of society behave like owners of private property. However, the state must be a discrete, independent force, since it has to compel all members of society to recognize one another as private owners. Under and posing as the rule of law, the bourgeois state treats its citizens as free and equal owners of private property. All citizens are subordinated to the same laws and have the same rights and obligations. … It is precisely by means of this neutrality that the state secures the foundations of capitalist relations of domination and exploitation. The defense of property implies that those who possess no relevant property beyond their own labor-power must sell their labor-power. To be able to appropriate their means of subsistence, they must submit to capital. This makes the capitalist process of production possible and reproduces in turn the class relations that are its precondition" (Heinrich, M. 2005, pp. 204-205).

[157] "The general interest is not always identical with the particular interests of individual fractions of capital or individual capitalists, which is why the state sometimes acts in opposition to these particular interests – for that very reason, there must be a self-contained instance independent of specific capitals" (Heinrich, M. 2005, pp. 204-205).

[158] The essential precondition of capitalist accumulation is the existence of wage laborers.

In this respect, we can explain and depict intellectual property rights as state intervention for the accumulation of capital. In particular, intellectual property rights are the only way digital information goods, which can be produced without additional labor, tend to become commodities. Many goods today cannot become commodities without the help of intellectual property rights. In addition, the aspect of intellectual property rights protecting the private property of creators simply deals in a fragmentary way with the alleged degree of legal effectiveness obtained. We can confirm the essential aspect in Marxist economics that the legal system maintains and strengthens the capitalist relationship of domination in a capitalist society. This is to explain how the capitalist state operates, starting from the problem of the value and price of commodities. Although there are differences in the method and degree of each country, strengthening intellectual property rights still faithfully fulfills the essential role of the state. In other words, the capitalist state capitalistically preserves the fruits of the digital revolution in order to maintain the exploitative relationship involved with, and via the capitalist method of production.

5.3 Media economic studies and monopoly pricing

The insight and explanation that general goods, which are valueless, become commodities through legal contrivance and compulsion, now leads us to the additional problem of the (selling) price of these goods sold in the market. Chae and Kang explained the price of the copied software as the Marxist monopoly price. And they explained that the monopoly price of software guarantees a monopoly profit for a company with monopoly power. In this respect, however, we will need to examine our point that the monopoly price explained in the labor theory of value is distinct from that of mainstream economics. In other words, it is necessary to examine how monopoly and monopoly price as explained in Marxist economics are then put to use, and what these conceptual designations have for media economy studies. Through this, we will confirm the validity of explaining the price of digital information goods as a monopoly price as suggested in one of the basic tenets of Marxist economics.

5.3.1 Monopoly and monopoly capital

First, in media economy studies, media concentration (Medienkonzentration) has been under discussion for a long time. Media concentration is, above all, adversely related to a broadly advertised media policy whose expressed goal is a democratic country based on media diversity (e.g. Heinrich, J. 1994, p. 132; Kiefer, M. 2001, p. 111; Puppis, M. 2007, p, 81). Therefore, in recent years, the diversity of the Internet is one of the most important topics in the field of media studies. However, the concentration examined in the study of media economy is presently pretty much limited to the issue of media ownership.[159] For example, the main question raised is one of "who owns how much media." However, from the Marxist point of view, concentration can well be, and should be viewed as a matter of profit. To explain this in more detail, we must first elaborate and distinguish the concepts of concentration and centralization suggested by Marxist economics.

Marx discusses the concentration (Konzentration) and centralization (Zentralisation) of capital in his famous work, *Capital*.[160] The concentration of capital referred to here, means an increase in capital through the conversion of surplus value into capital. In other words, a large portion of the profits obtained by capital exploiting workers is converted back into capital leading to a further exploitation of workers, and the capital becomes increased, sometimes exponentially. And the centralization of capital means an increase due to the merger of different individual capitals, which means that the capital becomes immense through the so-called mergers and acquisitions of companies.[161] And this concentration and centralization of capital is carried out in almost all major industrial sectors, with the result that giant monopolies dominate

[159] The political economists of media also are interested in the consequences of such media concentration. For example, much attention has been focused on the influence of concentration on the availability and quality of news, as well as the 'blockbuster complex' and the homogenization of content in cultural industries (Wasko, J. 2014, p. 262).

[160] See part 7 and part 8 of *Volume 1, Capital* (Marx, K. 1990, pp. 711-940).

[161] Michael Heinrich (2005) also makes presentation concerning the concept of concentration and centralization of capital (see p. 126).

specific markets. Marx defines the emergence of monopoly capital as "the operation of the immanent laws of capitalist production itself", together with "the necessity of natural history". [162] As we can depict, modern capitalism is actually a huge concentration and centralization of capital and production, and both markets and societies are already well dominated by huge monopoly capital.

Of course, this phenomenon of the monopoly of capital or of monopoly price is also examined and explained in mainstream economics. But in mainstream economics, monopoly generally means that there is only one large capital left in an industry sector (e.g. Kiefer, M. 2001, p. 89). Therefore, when a small number of firms dominate an industry sector, it is called an oligopoly rather than a monopoly. Therefore, mainstream economics says that, in the case of 'monopoly', competition is absolutely excluded; in the case of 'oligopoly' by way of contrast, while competition can be said to be 'limited' instead of 'excluded', it nonetheless remains dominant (see ibid., pp. 88-92). However, this explanation is an extremely ideological and arithmetic concept that only interprets characters surfacely. For example, in Germany's automobile industry, because Mercedes Benz, BMW, AUDI, VW, etc. coexist instead of constituting one giant capital, they are not technically a monopoly strictly speaking, but they do represent oligopoly capital; and while the market is then not a monopoly, these can be characterized as an oligopoly, if, however, one supposedly dominated by competition.

However, for Marx, monopoly means that a small number of capitalists or corporations intercept all profits; which, carried a step further, means that a particular capital

[162] "This expropriation is accomplished through the action of the immanent laws of capitalist production itself, through the centralization of multiple capitals. One capitalist always strikes down many others. Hand in hand with this centralization, or this expropriation of many capitalists by a few, other developments take place on an ever-increasing scale, such as the growth of the co-operative form of the labor process, the conscious technical application of science, the planned exploitation of the soil, the transformation of the means of labor into forms in which they can only be used in common, ⋯ Along with the constant decrease in the number of capitalist magnates, who usurp and monopolize all the advantages of this process of transformation, the mass of misery, oppression, slavery, degradation and exploitation grows. ⋯ The centralization of the means of production and the socialization of labor reach a point at which they become incompatible with their capitalist integument. This integument is burst asunder (Marx, K. *Capital Vol. 1,* 1990, p. 929).

structurally is a profit at a rate higher than the average rate of profit raised by other capitals (Kisker, K. 1999, p. 5). In other words, in Marxist economics, monopoly capital goes on to gain monopoly profits (Chae, M. 2003, p. 294). So, monopoly in Marxist economics does not mean that "only one firm" dominates the entire market. In any industrial sector, there is virtually no case where 'only one capital' or 'only one company' dominates alone. No matter how strong the monopoly appears to be, monopoly capital normally exists in the state of 'oligopoly capital'. Even in the case of a "monopoly business" in which the state guarantees a monopoly by law along with the coercion based on it, any national economy cannot actually maintain a monopoly because it has to compete with other capitals in the overall capitalist global economy. The fact that there are a large number of monopoly capitals in any industrial sector should be taken to mean that competition itself is occurring, if solely among the monopoly capitals. Even if there is only one firm in an industry sector, its capital cannot 'completely and absolutely rule out' competition from others. In other words, monopoly capital does not strictly exclude competition, but knows to restrict competition and/or to change the mode of competition (Kisker, K. 1999, p. 12; see also Chae, M. 2015, p. 598). As such, the term monopoly in Marxist economics has a different meaning from monopoly explained in mainstream media economics today.

5.3.2 Monopoly price and monopoly profit

In Marxist economics, the concept of monopoly is extended to the concept of monopoly price and monopoly profit, where the underlying price is determined simply by the desire and ability of the buyer to pay, independent of the price of the product as determined by price of production and value.[163] In this fashion, monopoly capital can

[163] "By monopoly price here we mean any price determined simply by the desire and ability of the buyer to pay, independently of the price of the product as determined by price of production and value. A vineyard bears a monopoly price if it produces wine which is of quite exceptional quality, but can be produced only in a relatively small quantity. By virtue of this monopoly price, the wine-grower, whose excess over the value of his product is determined purely and simply by the wealth and the preference of fashionable wine-drinkers, can realize a substantial surplus profit" (Marx, K., 1991, p. 910).

use its market power to raise its commodity price to a certain level, and the monopoly price thus formed becomes a monopoly profit exceeding the social average rate of profit. This is a method by which monopoly capital gains monopoly profits by setting a price higher than the price of production by using its market power. According to German Marxist economist Klaus Kisker (1999), the bourgeois oligopoly theory and Marxist monopoly theory are similar in that firms can set their own prices. However, the central point raised by the Marxist monopoly price is that it allows a monopoly rate of profit above the average rate of profit at a price above the price of production (Kisker, K. 1999, p. 5). In this respect, when goods that produce no value are sold at high prices in the market, the companies that produce them are using their market power (or reflected government power) to obtain monopoly profits higher than the social average rate of profit.

5.3.3 Competition of monopoly capital and pricing

As mentioned earlier, monopoly capital does not exclude competition, but restricts competition and changes the state and mode of competition. And in any industrial sector, there are multiple monopoly capitals, and competition among monopoly capitals continues to take place. Chae (2015) explains the competition of monopoly capital as follows; “In economics, competition among monopoly capitals is called ‘intra-sectoral competition’. And monopoly capital must compete not only with monopoly capital in other sectors, but also with other large capitals that have not yet reached the ranks of monopoly capital. This is because they have to prevent them from entering their sector, prevent them from competing on price and causing oversupply, etc. Monopoly capital calls this competition with other sectors ‘inter-sectoral competition’, and the various means and conditions that prevent the entry of (monopoly) capital from other sectors are called ‘entry barriers’” (Chae, M. 2015, p. 598).

In this way, monopoly capital is placed in an intra-sectoral competition as well as inter-sectoral competition. And in this competition of monopoly capital, a peculiarity different from that of non-monopoly capital emerges (ibid., p. 599). For example, while

monopoly capital competes with each other, agreements and collusions between monopoly capital intra-sectorially are made. In other words, it avoids price competition and engages in non-price competition through cartel structures. Non-price competition includes so-called product differentiation, intense advertising, tie-in sales, and discount sales, etc. These costs are unproductive costs because they do not contribute to the value of the product or use-value (ibid., p. 600). Rather, such competition imposes additional costs on monopoly capital and adversely affects their rate of profit. However, precisely through such manipulations they maintain their monopoly price and secure and expand their market share through non-price competition.

Nonetheless, the monopoly price of monopoly capital may not always be successfully maintained through mutual price setting or collusion (ibid.). For if (monopoly) capital from other sectors newly enters a particular sector, and they do increase supply and lower market prices, the existing monopoly capital cannot maintain its monopoly price or cartel.[164] Thus, monopoly capital must position its own monopoly price below a certain height as a result of inter-sectoral competition. In other words, the monopoly price or monopoly rate of profit that does not exceed a certain ceiling level (such as the monopoly of technical know-how or raw materials specific to a certain industrial sector), becomes itself a 'barrier to entry' (Chae, M. 2015, p. 601). On the other hand, even if the entry of capital from the other sector is effectively blocked, when monopoly capital competitively increases supply and floods the market with goods, this could also lower the future market price, and consequently, either the monopoly price or the cartel, or both, cannot be maintained. Therefore, monopoly capital generally maintains monopoly pricing and cartel structures by restricting its operations and even limiting production (supply) when the market demand is relatively fixed or is shrinking (ibid.).

We can likewise apply this monopoly price 'theory and practice' analysis to the pricing phenomena of digital information commodities such as software. At the same time, this

[164] Cartels as a special form of collective concentration, often characterized as children of need, arose when there was overcapacity or sales difficulties. Cartels have proven unstable in the history of capitalism (Kisker, K. 1999, p. 3).

can serve to illustrate the essence of the capitalist economy, which is obliged to continue such activity uninterruptedly. In other words, based on the above examination, we can better explain today's trend of monopolization of media companies from a Marxist perspective.

5.4 Conclusion

In this chapter, we define media products also as valueless goods, given the fact that they do not require any labor and cost in the second unit production. And we have examined the background of those goods which appear on the market as commodities in more detail. This review more specifically supports the content and assertion of the previous chapter that the value and price of software can be explained by the Marxist labor theory of value; and furthermore, it serves to confirm how the value and price of media products in general can be explained via Marxist labor theory of value. In other words, we have seen that the value and price of immaterial products can also still be explained in the Marxist labor theory of value. In this regard, we could see that the analysis of media products conducted in media economics so far has been focused primarily on the physical form of labor. The political economics of media, which claims to accept Marxist economics, also happens to reject the Marxist labor theory in media product analysis, and, more to the point, their product research also continues focused on some unmeasurable amount of mental work, based likewise ultimately on the utility theory of value. In other words, at the center of their research, they try to explain the size of immaterial goods that cannot be explained objectively.

In addition, we looked more closely at the structure of our developed society in which valueless goods are commodified via a recitation of earlier histories, and a historical look at the philosophical analysis of intellectual property rights. In other words, we can confirm that intellectual property rights may not be aimed as economic rewards for creators or as social and legal devices for society as a whole, but rather the intervention of the state to pursue capitalist interests in general. Of course, there is also accompanying analysis and explanation of intellectual property rights and the state as

performed in media economics. However, their research is presented separately from the value analysis of media products. In this regard, even Bettig's research too remains enclosed within the narrative of historical events rather than progressing to explain within the historical consideration of intellectual property rights the social structure in which valueless goods are commodified. In other words, these were hesitant to define media products as valueless goods because the political economics of media did not explain the inherent value of media products more specifically or in depth. As a result, despite the historical and philosophical analysis of intellectual property rights, they failed to explain in a more encompassing way the background structure of capitalist society, e.g. in this specific case, the example afforded by the media industry.[165] However, we were able to understand more clearly the historical and philosophical background of the emergence of valueless goods as commodities through Bettig's literature, and we were able to confirm how the general capitalist interest was pursued in the process of selling valueless goods as commodities.[166]

Finally, when valueless goods are sold in the market, the price of these commodities can be viewed as the Marxist monopoly price, which is an explanation differing from mainstream media economics so far. Monopoly in Marxist economics is not the absence of competition as in mainstream economics, but rather monopoly here consists in restricting competition and oftentimes even changing the modes of competition. In this connection therefore, we need to pay attention to the general Marxist analysis and fact that monopoly profits higher than the price of production are also in this instance

[165] Ronald Bettig (1996) gives numerous examples in his literature and describes how intellectual property rationalizes the accumulation of capital. For example, his explanations show how state interventions, mainly intellectual property rights, have changed and been developed in the US cable television and videocassette record industries. So, through his narrative, we can see how media capital has accumulated its own capital through state intervention in the media industry. However, he has not been able to derive the fact that media products are valueless based on the study of intellectual property rights. In this respect, we see that his research is limited to the analysis of events based on historical occasions.

[166] In chapter 7 of this paper, we examine more specifically how the study of the value and price of media products can explain the media industry as a whole, that is, how our study can explain the media industry in a digital capitalist society, something absents in Ronald Bettig's study. In other words, we are at pains to confirmed to what extent (and how) an abstract analysis of digital information commodities can describe the concrete analysis of the digital media environment.

the underlying dynamic operative here, rather than the notion that any unique monopoly appearing in the media industry should be thought of as a structure dominated by a few companies. In other words, it is possible through the dominance of these firms that goods that produce no value are sold at high prices in the market, and this profit is explained as monopoly profit in Marxist economics. These explanations thus deal more with the monopoly of the media industry from an economic point of view, and above all, they are the explanations suggested by the Marxist labor theory of value. In other words, it was possible to confirm how the deep analysis of the inherent value and price of media products can itself become an important theoretical foundation in media economy research.

6 Realistic Review and Possibility of Applicability

In chapter 5, we looked at the elucidation of the value and price of media products both in its own right and as a steppingstone to a clarification of the value of digital information commodities in general. And we supported the basis for this explanation in citing various publications and literature, and expanded our arguments to refer to media economy studies in general. In this present chapter, we need to apply the arguments already suggested by using examples of concrete reality, namely, those that serve to underscore our theme that the price of digital information commodities is a Marxist monopoly price. For example, in the process of the determination of the price of digital newspapers and digital TV (broadcasting) contents, we will examine how the monopoly price is actually established and maintained. Through this, we will show that digital information commodities can be explained by the Marxist monopoly prices, and will look more actively into the media industry from a Marxist standpoint. In other words, we will examine in more detail how valueless goods in the recent digital media industry appear on the market as commodities through intellectual property rights, as well as in the real world where these goods are sold at a price higher than their inherent value or price of production. To do this, we will look at three aspects: (1) Digital media industry and intellectual property rights today, (2) Monopoly pricing of digital newspapers and (3) Monopoly pricing of digital TV broadcasting contents.

6.1 Digital media industry and intellectual property rights today

We can first view the introduction of new and powerfully effective intellectual property rights for the digital environment via the digital newspaper industry. In particular, the German ancillary copyright for press publishers (Leistungsschutzrecht für Presseverleger)[167] revised in 2013, and the copyright law reform enforced by the European Union, represent excellent recent examples. Through these examples, we can

[167] In its original form, the law would have forced Internet content providers to pay fees, collected by a central clearinghouse, to publishers for displaying their content.

confirm the reality that intellectual property rights, made suitable for the digital environment, for example in the digitalized newspaper (media) industry, are expanding and intensifying all over Europe. Meanwhile, another case in which the state strongly intervenes in the digital media market is also observable and confirmable on the other side of the world, namely, in South Korea.

The Korean government has not too long ago launched a news copyright trust business to sell digital information goods as commodities. In 2006, the Korea Press Foundation [168] created a digital news brand called 'News Korea' by entrusting thereunto the copyrights of media outlets. This business model was at first evaluated as an achievement, in part, in that previously it had been almost impossible to successfully commodify various digital news contents as attempted by Korean newspaper companies. In this case, however, we should also be permitted to see such legal intervention, namely state intervention, as an attempt to protect their own industries in a changing global digital environment. And staying with the case of South Korea, where a strictly parallel legal framework, as is the case in Germany, has not yet been established, the government's intervention here to protect its own media industry can be equally confirmed.[169] In this respect, their individual case becomes in itself a sort of modern history of copyright, which is changing and developing to be made suitable for the digital age. In other words, the tendency to commodify valueless things, that is, the capitalist state's intervention in the market to maintain the capitalist mode

[168] The Korea Press Foundation is the government approved regulatory and competition authority for the Korean media as an organization, similar to Ofcom in the United Kingdom.

[169] The way government agencies sell goods by enlisting and entrusting such to corporate copyrights can be seen in the relationship between the state and the media. Of course, the relationship between the state and the media may differ from country to country. However, the role of the state in securing capitalist general interests in capitalist social relations is almost everywhere the same. In the previous chapter, we affirmed Michael Heinrich's point regarding the general interest of capital: "the capitalist state plays a role of guaranteeing general material conditions for capital accumulation when there are conditions in which individual capitals do not obtain sufficient profits in the capitalist mode" (Heinrich, M. 2005, p. 210). A similar example is the screen quota system. In the global market, many countries have introduced a screen quota system to protect their own film industry. And since 1994, France has stipulated that about 60 percent of the time spent on music broadcasting on radio have its origin in European music and 40 percent of this in French music.

of production, can be confirmed as ongoing.

6.1.1 Intellectual property rights in a digital market: copyright in Europe

The German publishing industry declared in the 2009 Hamburg Declaration that "universal access to a website does not necessarily mean free access".[170] It is clear that publishers, including newspaper companies, cannot allow access to their content without "consent" or perhaps better, "reward". The declaration, first issued by six large German publishers, has made an international appeal well beyond German borders and concerns itself, moreover, with the global future of digital journalism (ibid.). Mathias Döpfner, CEO of Axel Springer AG, commented on the move: "We are confident that representatives of search engines and other aggregators will work with us to identify, develop, and jointly use market opportunities for legitimate paid content on the Internet"[171]

This proposed movement is eventually realized through the legislated ancillary copyright improvements for press publishers (Leistungsschutzrecht für Presseverleger) in Germany.[172] This law, amended in 2013, requires Internet search operators such as Google to pay copyright fees (license) to the media when they link to an article.[173] Unauthorized use of digital content, including news articles, is prohibited unless a

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[170] Die Welt Zeitung (2009), "Schutz Geistigen Eigentums: Erklärung der Hamburger Verlage" in: *Die Welt*, 8. June 2009. Retrieved from https://www.welt.de/wirtschaft/article3886003/Erklaerung-der-Hamburger-Verlage.html

[171] Pressemitteilung von Axel Springer (2009) "Internationale Verlage unterzeichnen; Hamburger Eklärung zum Schutz des geistigen Eigentums", in: *Presseportal*, 09. July 2009. Retrieved from https://www.presseportal.de/pm/6338/1437614

[172] In Europe, on April 9, 2001, the 'Copyright and Related Rights in the Information Society' were enacted into law for the specific reason that the spread of computers and the attendant use of works through the Internet was now an ongoing activity (Directive 2001/29/EC). The German Copyright Act, which accepted this, moreover also established the right to public delivery through an amendment on September 10, 2003, and defined it as the right to deliver a work to the public, whether wired or wireless, by a method accessible to the public at a place and time chosen by the public.

[173] The content of this paragraph on Google tax trends in Europe relies heavily on Kim Ikhyun's literature (2018).

royalty agreement is signed for at least one year after publication. Following Germany in 2015, Spain also devised a so-called Google tax, protecting the copyright for press publishers. However, when Spain passed the Google tax, Google immediately responded by closing down Google News in that country. And from 2015, when the law took effect in earnest, the Google News Service was no longer in Spain. There was also a struggle between publishers and Google in Germany. In 2014, Axel Springer demanded a fee from Google based on the relevant legislation, which Google refused. As a result, Axel Springer blocks their content from Google searches. However, after just two weeks of this, Google could resume searching in Germany. This was because it was judged that the traffic coming through Google and the inflow of Google News would be more beneficial to the media. Unlike Germany or Spain, France has chosen a 'third way'. In 2013, the French government allowed the use of news by Google on condition that Google contribute 6 million euros to the Digital Publishing Innovation Fund. Google also worked closely with French media outlets to provide advertising technology to help publishers increase sales (Owen, L. 2013).

Attempts to contain giant platform operators such as Google have been carried out not only in a single country, but also at the level of the European Union (EU). The EU has been proposing a reform of the copyright law since 2014. Günther Öttinger, then European Commissioner for the Digital Economy and Society, announced that he would reform European copyright law by the end of 2015.[174] He said he would introduce a Google tax that would require platform operators to pay copyright fees (license) when linking works such as news articles from media outlets. Copyright reform began to accelerate in earnest with the European Union's concept of a Digital Single Market in 2015 (Kim, I. 2018, p.21). The Digital Single Market is a policy that belongs to, and integrates with the European Single Market and is a plan to revitalize the economy while simultaneously laying a moral foundation centered on digital data. The following year, the European Commission (EC) officially proposed the Copyright

[174] Press release of the European Commission (2015), "Digital Single Market Strategy: European Commission agrees areas for action", in: *European Commission*, 25. March 2015. Retrieved from https://ec.europa.eu/commission/presscorner/detail/en/IP_15_4653

Directive to the European Parliament, and the debate over platform regulation began in earnest. The proposal stipulates that giant platform operators such as Google and Facebook be assessed a certain amount of tax every time, they link content. And platform operators such as YouTube will be obliged to filter out copyrighted content uploaded by users.[175]

Even when these provisions were first introduced, there was criticism that such could paralyze daily Internet activities. Among these criticisms, the most controversial revolves around determination of the period of copyright exercise. When the first Copyright Directive was submitted, the rights of copyright owners were discussed in relation to 20 years. However, in the course of the discussion, the duration of copyright exercise was reduced to five years, and in the final draft of the 2019 reform bill, it was adjusted down to two years. Although it was difficult to reach an agreement on copyright reform in the EU due to differences between member states, an agreement was eventually passed through final negotiations in 2019.[176] A member of the European parliament and rapporteur, Axel Voss, said at a press conference after the law's passage through the plenary session, "This revised copyright guideline is significant in that it is a significant step to correct the current situation where a small number of large platform companies are allowed to take huge profits without adequate compensation for the work of the thousands of creators and journalists on which they depend. This will help make the Internet a future-ready space that benefits everyone, not just the powerful few".[177]

But Europe's tightening of copyright law did not seem to go as smooth as Axel Voss' hopes. American media criticized the European guidelines as "the type of rule that can

[175] The regulation on the imposition of link tax is in article 11, and article 13, also termed 'upload filter', imposes responsibility on platform operators to prevent copyright infringement (see Kim, I. 2018, pp. 22-26).

[176] Trilogue means the European Parliament, the EU Council and the European Commission.

[177] Press conference (2019), "Press conference by Axel Voss (EPP, DE), rapporteur, and Sajjad Karim (ECR, UK) on the trilogue deal on the copyright directive for the digital single market", in: *European Parliament*, 14. Feb. 2019. Retrieved from https://multimedia.europarl.europa.eu/en/press-conference-voss-karim-trilogue-copyright-directive-digital-single-market_I167990-V_v

come out if you think that there is only YouTube or only Facebook on the Internet" (Vincent, J. & Brandom, R. 2018). In particular, Forbes, an American economic magazine, mentioned that the regulation could be made mainly because there are no giant platform operators such as Google and Facebook in Europe (Colin, N. 2018). Amendments to this Directive will now be reflected in national legislation in each Member State. And European media firms can claim legal rights under the amended legislation. However, it remains to be seen how these legal interventions work in the digital media market. Because the real question remains whether giant IT companies like Google and Facebook will pay royalties.[178] What is clear is that intellectual property rights suitable for the digital environment have been extended to all of Europe in the above-mentioned digitized newspaper industry. Of course, recently in France and even in Australia negotiators have made agreements to procure huge sums from Google and Facebook.[179] However, such an agreement is not merely a result of legislative reform, but is suitably an example of the state protecting its capital by partially adjusting the monopoly power of global monopolies. In other words, this is not just a legal amendment suitable for a market where digital technology has advanced. The very essence of the revision remains the intervention of the capitalist state to produce and sell goods, that cannot normally be considered commodities, very much as lucrative commodities.

[178] We can view the strengthening of antitrust laws as state intervention to protect its own capital. In fact, the European Union is imposing huge fines on global firms such as Google for violating antitrust laws. Thus, while the EU publicizes Google's monopoly influence, it seems quiet about the domestic market dominance of its own national monopoly firms. This shows how national institutions like the European Union protect their own capital. However, the core of the issue is that even if numerous firms divide and occupy the market, the monopolist can still obtain monopoly profits. Therefore, the essence of antitrust law should be the blocking of monopoly profits that are higher than average profits.

[179] Google has agreed to pay $76 million over three years to a group of 121 French news publishers to end a more than year-long copyright spat (Rosemain, M. (2021), "Exclusive: Google's $76 million deal with French publishers leaves many outlets infuriated", in: *Reuters*, 12. Feb. 2021. Retrieved form https://www.reuters.com/article/us-google-france-copyright-exclusive-idUSKBN2AC27N). And Google has agreed to pay Rupert Murdoch's News Corp for content from news sites across its media empire (BBC NEWS, "Google to pay Murdoch's News Corporation for stories", in: *BBC*, 17. Feb. 2021. Retrieved from https://www.bbc.com/news/business-56101859).

6.1.2 State intervention: News copyright trust business in South Korea

As illustrated and confirmed by the European intellectual property reform, the digital media market requires strong state intervention. Of course, there are various ways in which the state can intervene in the market, such as supporting the management of media outlets or contemplating future strategies, all in addition to straight-out legislative methods. This may be the case with the South Korean government's support policy to sell digital information goods that are of no value (in that they do not contain value) as commodities. For example, this is precisely the business option opted for, one in which the South Korean government sells digital news contents under the mantel of a trust scheme.

The news copyright trust business is a business in which the news copyright holder entrusts the copyright to another person, and then they sell the news. In South Korea, such a news copyright trust business has been ongoing since 2006. If we look at the matter and contents of the scheme in more detail, at first, 66 media companies jointly created a digital news brand called 'News Korea'.[180] News Korea is a project that sells news commodities (copyrights) to consumers in a parallel fashion to the copyrights of media companies such as NLA (the Newspaper Licensing Agency)[181] of the United Kingdom and PMG (Press Monitor GmbH)[182] of Germany. However, the difference between them and News Korea is that News Korea is operated directly by a government agency.[183] In the beginning of the News Korea business, media companies jointly entrusted their copyrights to the Korea Press Foundation (KPF)[184], and they then sell

[180] Initially, 66 newspaper companies participated, and as of 2017, 81 companies are selling news through News Korea. As of 2017, the news fees paid by the Foundation to newspapers were 12.9 billion KRW (9.5 million EUR). The foundation withholds 7% of the sales of news content as a trust fee.

[181] NLA was founded in 1996 by British newspapers, and NLA is a publisher-owned rights licensing and publisher services business with a core aim of supporting journalism.

[182] PMG Presse-Monitor GmbH was founded in 1999 by German press publishers and provides the most comprehensive German daily press database to businesses, schools and government agencies.

[183] NLA and PMG are privately owned limited companies.

[184] The Korea Press Foundation is a quasi-governmental organization that manages, regulates and supports Korean media outlets as an organization, similar to Ofcom (Office of Communications) in

news under the management and supervision of the KPF and distribute the profits (Lim, Y. 2013, p. 20). The KPF not only sells news content, but also promotes news copyright protection. There is an adjunct activity to inform the populace that news also can and does enjoy a copyrighted status, and that it should be thought of as an artistic creation, not as a free-for-all. The KPF takes 7% of the sales from news content sales as trust fees. According to Lim (2013) who researched News Korea, "Newspapers, as the copyright holders, created something out of nothing without investing a single penny" (ibid., p. 22). This project has significant implications in that it had been almost impossible to make paying for digital news content workable in Korea, which the South Korean newspaper industry had been at pains to do and had tried directly, but unsuccessfully. In other words, unlike many overseas newspaper subscribers, most Korean subscribers were getting their digital news for free.

The situation in South Korea, where digital news is provided free to subscribers, mostly results from the fact that media outlets have yet to find any 'paywall' model. Against this background, the News Korea business has a structure in which a certain amount of income is guaranteed to participants in addition to advertising revenue. According to Yang's report (2018), in 2017 the KPF sold and distributed about 12.9 billion KRW (about 1 million EUR) in news copyright fees (Yang, S. 2018, p. 76). Considering that the sales amount in the first year of 2006 was 20 million KRW (about 14.000 EUR), this represents remarkable growth (ibid.). In 2017, there were 81 media outlets consigned to sell news,[185] so the copyright fee distributed by the KPF was reported to be an average of 143.5 million KRW (about 100.000 EUR) per media (ibid.). Sales revenue and the number of commissioned media have steadily increased over the past decade. The problem, however, is that news is being bought by public institutions rather than being sold to private companies or individuals. Therefore, the KPF is planning to expand the number of media firms and itself specialize in varying products to sniff out various new customers (see ibid., pp. 78-81). More than 30 years have

the United Kingdom.

[185] The number of registered trust media of the Korea Press Foundation in 2020 is 106.

passed since the advent of digital newspapers, and South Korean media outlets have yet to present a clear paywall strategy. In such a situation, the South Korean government's trust project to support the media market is a support policy presented in the context of the structural problems of the South Korean media market. However, the situation in which a state institution sells news (goods, valueless things) to public institutions and distributes the profits to newspapers has implications for our theme. Above all, in a situation where government agencies take the lead as regards the sale of digital information commodities, the price of these commodities has absolutely nothing to do with the production cost or value of the commodities. Therefore, it is here then possible to inspect directly a process of the commodification of digital information goods that are actually not commodities. In other words, we can here witness one reason why valueless things can emerge as commodities, namely, via a process made possible through a direct intervention of the state.

This state intervention is due most of all to the nature of the digital newspaper (media) industry, which conflicts with the capitalist way of production. In other words, it is the 'legal' intervention of the capitalist state that enable goods, which, once produced and easily copied, to be made into expensive commodities. Such state intervention appears in the form of state monopoly capitalism; and yet, even in spite of strong state intervention, endless clashes are, nevertheless, pre-programmed in this mode of production. We can understand these conflicts in more detail in the case of the prices of news goods formed as monopoly prices.

6.2 Monopoly pricing of digital newspapers

Once having been produced, digital newspapers can be simply copied without any additional labor or cost. Therefore, it is virtually impossible to technically limit the use (propagation) of digital newspapers.[186] On the other hand, it also ought to be

[186] The way digital media outlets commodification "valueless" goods are realized through various methods also other than state intervention. For example, cable TV or Pay TV could be excluded to some extent through the set-top box. Today, such technical blocking is carried out through methods

considered that news has a higher use-value than any other of the similar 'general goods'. In this section we will look at the process by which digital newspaper prices are set and maintained at Marxist monopoly prices. First, we can distinguish between a case where a digital newspaper is sold directly to subscribers (Business to Customer: B2C), and then following, a case where it is sold to Internet content providers such as Google and Facebook (Business to Business: B2B). For the case of B2C we look at how the price of digital news is formed and maintained in light of the Paywall discussion at the World News Media Congress of 2017 as reported by an newspaper industry-related business employee in attendance.[187] Paywall is a method of restricting access to content, especially news, via a purchase or a paid subscription. In the case of B2B, we can look at how the monopoly price is established through the monetary fee convention that the South Korean search engine 'Naver' pays to the news media outlets.

6.2.1 Paywall for digital news[188]

In the newspaper industry, a payment method for subscribers to purchase digital news contents is called a 'Paywall'. There are hard paywalls and soft paywalls. The former has no access to the news content at all without paying a subscription fee. So, you have to pay a certain amount, sign up for membership, and then log in to access the news contents. The latter allows you to access some contents without paying a subscription fee, but only shows a certain number of articles before demanding an additional paid subscription. This payment system is largely divided into hard paywall, metered paywall, and freemium paywall. We can look at how monopoly prices are formed and

such as encryption, integrated authentication, and paywall, etc. Just as the digital environment requires stronger and more diverse state intervention, various technical barriers are required. Without such interventions as these or notionally the various technical possibilities available such technical blocking, it cannot be transformed into a commodity.

[187] The 69th World News Media Congress and the 24th World Editors Forum took place in Durban, South Africa from June 7-9, 2017.

[188] The content of this section is heavily dependent on Lee Junghwan's literature (2017). In June 2017, he participated in the general meeting of the World News Media Congress and introduced survival strategies sought by the newspaper industry related business employee.

maintained through the strategies and successful recounts of newspapers to monetize digital news contents. In particular, the meaning of the paywall recognized by the employers in the newspaper industry can be seen in the fact that the price of digital news content has no relationship to the latter involved production cost or with its own subsequent inherent value.

6.2.1.1 Hard paywall

In the newspaper industry, hard paywall is introduced as a payment system that helps to unite those loyal readers able and willing to subscribe. Of course, you have to be confident in the quality of your content. As media strategist Karl El Hitti points out, “If a website offering free content introduces a hard paywall, it may lose 90% of its readers” (Lee, J. 2017a, p. 19). The British Times and The Wall Street Journal are newspapers that have chosen hard paywall as their form. The Times actually dropped 90% of its traffic in 2010, but it did not give up its paywall. Rather, the Times maintains a deeper relationship with a smaller number of loyal readers. News Corporation chairman Rupert Murdoch has long argued that free news should be banned. So, in 2010, a hard paywall method that hides all articles at once behind a payment system was introduced. Subscriptions start at $12 for 12 weeks and then at $28.99 per month at the end of the promotional period. Annual memberships start at $272.91 and go up to $347.88 the following year. What the Times and The Wall Street Journal, which both introduced hard paywalls, have in common is that there is no free content. If you pay, you can see it, if you don't pay you can’t see the article (Sullivan, D. 2017).

Business Insider describes the success requirements of a hard paywall as follows: First, success is only possible for content that is highly specialized or has a clear target audience. Unless its content is completely unique, readers will go looking instead for free content. Second, it should be a content with few competitors. Comparing prices is meaningless, and no matter how expensive the price, it must be content such that one cannot help but press the payment button (Boland, M. 2016). Hard paywall has few success stories in this regard precisely for this reason. According to an American Press

Institute (API) study, in 2016, only a third of 98 media outlets ran hard paywalls. Local media outlets such as Newsday and the Honolulu Star-Advertiser produce local news content with little competition. Hard paywalls have been successful because they create overwhelmingly interesting content that cannot be found elsewhere, such as is the case with the Wall Street Journal (Lee, J. 2017a, p. 22).

6.2.1.2 Metered paywall

According to the API, most media outlets that have introduced metered paywalls limit the number of free articles to 10 per month. Media companies with fewer visitors also display less free articles. The average subscription fee for a metered paywall is $2.97, which is lower than a hard paywall ($4.43) or premium paywall ($3.52) (Williams, A. 2016). As 'Business Insider' points out, "The content of metered paywall is relatively less differentiated and has a high possibility of duplication, so it is not easy to raise the price" (Lee, J. 2017a, p. 17). Therefore, it is important to set a limit on how many articles can be viewed for free in metered paywall. A representative example of metered paywall is the New York Times, which tried to charge for content several times, but noticed that subscription sales had overtaken ad sales only from 2012 on (ibid., p. 5). In the third quarter of 2019, it secured about 4.1 million paid subscribers, and the total number of paid subscribers including paper newspaper subscriptions was about 4.9 million. More than 80% of all subscriptions are made online (Lee, J. 2019).

The New York Times' paid content dates back to 2005. Under the name of Times Select, the column and archives of past articles were bundled together and sold for $7.95 per month and $49.95 per year (Lee, J. 2017a, p. 6). Within two years, the number of paid subscribers increased by 220,000 and sales also increased. However, it fell short of initial expectations, and as a result of a consulting process, it was decided that it would ultimately be better to increase online advertising sales simply by allowing an increase of the number of visitors to the site. The New York Times Vice President Vivian Schiller at the time admitted, "The introduction of Times Select has resulted in significant paid subscribers and is a success of its own, but the rate of increase in paid

subscribers has not kept pace with the growth of online advertising" (Pérez-Peña, R. 2007). "It has given me the belief that providing unlimited access to the New York Times reporting and analysis is the best way to preserve the long-term viability of our brand and journalism, and to serve the interests of our readers" (Lee, J. 2017a, p. 7). In fact, the number of visitors to the New York Times has increased significantly after abandoning Times Select, and advertising sales have also increased significantly to make up for any loss many times over. But then the New York Times reported that a second paywall model would be introduced in March 2011. You can read up to 20 free articles per month, and to read more, you can sign up for a paid subscription. It is a strategy to increase the effectiveness of advertising aimed at loyal readers while maintaining the reputation of being the best newspaper in the United States, and this without squeezing out general readers (ibid., p. 8). In 2012, subscription sales surpassed advertising sales for the first time, and by the end of 2012, online paid subscriptions had risen to 670,000. Gaining confidence, the New York Times reduced its 20-page article limit down to 10 in April 2012 (Beaujon, A. 2012). It raised the paywall a bit more. As Steven Brill points out, "Reducing the article limit from 20 to 10 would turn out to have little effect on overall sales" (Lee, J. 2017a, p. 10). It was after Donald Trump was elected president that paid subscriptions to the New York Times truly gained momentum. The New York Times temporarily lifted restrictions on free articles during the election period, but after the election, again raised the payment system, even as online paid subscriptions skyrocketed. In the first week after the election, more than 40,000 subscribers signed on, and nearly 300,000 in the fourth quarter alone. In 2016, the number of subscribers increased by 580,000, reaching 1.85 million by the end of the year, and the number of online paid subscribers approached 2.85 million as of the third quarter of 2017 (ibid., p. 11). The free article limit was subsequently reduced to 5 articles in December 2017, and even to 2 articles from July 2019 on.

The reason why the New York Times can set a relatively high price while applying a metered paywall is because the brand value is high and the target audience is wide (ibid., p. 13). The New York Times has become a newspaper that produces the world's highest quality content, both in name and reality. So, if you attract only 10% of your

visitors as paid readers, you can still achieve profits of more than $15 million. The chairman of New York Times, Mark Thompson said, “Our business is journalistic storytelling, no one should beat us at that.” “Advertising cannot save the press. Paid content and subscription will” (Innovation Media Consulting, 2017). The New York Times plans to have 10 million paid readers by 2025.

6.2.1.3 Freemium paywall

In the freemium paywall, there is a still separate content service available, but only for paid members. So, this constitutes a way to let free readers know that there is more advanced content available out there (Lee, J. 2017a, p. 25). For example, the articles one sees are different depending on the membership level, and there is content where general members cannot even see the title of the article. Obviously, there are users who are satisfied with the free service, but many users cross the paywall and sign up as a paid member. American political news site ‘Politico’ introduced a premium subscription model in 2010. Politico provides all content for free, but ‘Politico Pro’ provides premium content for a fee. It provides special content in 24 categories; including politics, technology, media, and energy (ibid., p. 26). Subscriptions range from $10,000 to $30,000 per year, depending on the subscription package (Ingram, M. 2015). According to Digiday, as of July 2017, Politico Pro had more than 20,000 subscribers, and revenue from Pro subscriptions accounted for half of Politico’s total sales (Willens, M. 2017). According to Fortune Magazine, Politico Pro’s subscription renewal rate is close to 93% (Ingram, M. 2015). As Fortune noted, “A subscription renewal/extension rate of over 90% is unprecedented in the media industry” (ibid.). Politico targets government officials, lobbyists, and analysts interested in specific policy issues (Lee, Ja. 2017, p. 26). In the meantime, German media group Axel Springer acquired Politico in August 2021 to enhance and augment Politico’s international growth (Lee, E. 2021).

For the premium content model to succeed, it is necessary to secure specialized content; and further to watch closely what content drives readers to subscribe. The newspaper

‘Bild’ published by Axel Springer is running a premium model on the web and a hard paywall on their mobile app under the name of ‘Bild Plus’. Bild also initially introduced a freemium paywall as well as a hard paywall, but switched then as well to a yet more expensive premium paywall model. Launched in 2013, Bild Plus has acquired 353,000 paid readers in four years (ibid., p. 28). Tobias Henning, who oversees the payment strategy of Bild, said, “The strategy of keeping the door open with certain payment models for online and mobile ‘web’, but locking in the distinct mobile premium ‘app’ with a hard paywall was effective” (Lee, J. 2017b). It left open the possibility of moving from enjoying free content on the web to a paid subscription, but making it impossible to view anything in the premium app without paying. Axel Springer’s ‘Die Welt’ also switched from hard paywalls to metered paywalls and then on to premium models. Their digital paid subscribers increased from 17,100 in 2012 to 76,000 as of May 2017 (Lee, J. 2017a, p. 29). Bild and Die Welt have elevated themselves to a status as established mass media, and are enticing readers with more professional paid content while still maximizing the enjoyment of reading with free content (ibid.).

Zoura, a subscription solution service provider, is advising the following five strategies for expanding subscriptions (Rayapura, A. s.d.). First, you need to create non-commercial content. You need to provide compelling content that your readers will not find anywhere else. Second, the behavior of readers should be studied. Understanding how and when people consume your content can increase conversion rates. Third, additional services should be used. Whether it is sports highlights or free music streaming, a well-chosen ‘add-on’ enhances the reader experience. In point of fact, media outlets that have partnered with Spotify, which offers free music, have seen significant gains from paid subscriptions.[189] Fourth, you need to balance advertising revenue and content revenue. Although the Financial Times makes most of its revenue from content, it also generates results from advertising sales. Analyzing your readers and devising a paywall strategy can greatly reduce wasted marketing efforts. Fifth, the possibility of a live event should be paid attention to. The Guardian is a pioneer in this

[189] Spotify Technology S.A. is a Swedish music streaming and media services provider.

field. TED-style forums[190], celebrity speakers, music concerts, and membership services making available Mediterranean cruises expand the reader experience.

6.2.2 News purchased on the search engine 'Naver'

In some cases, digital news content is sold directly to subscribers, but also then to content distributors such as the search engine Google. Currently, media outlets sell their products to platform providers and demand user fees to pay for same, thus obtaining royalties. Therefore, as discussed in the previous section, European countries are strengthening their intellectual property rights via the introduction, for example, of a Google tax. However, in South Korea, search engines such as Google were already paying media outlets (news contents producers) to use content without the encouragement of any relevant legal amendments or state intervention. In this nexus, we need to examine the structure and background of the South Korean search engine 'Naver' in regard especially to its purchasing news content from media outlets. To this end, we will briefly review the growth process of the South Korean search engine Naver and the situation there in which news content appears as a commodity. What we should pay attention to here is the fact that the price of digital news content is formed and maintained as a monopoly price. This could be also a further example of the nature of the news content usage fees that Google is currently paying to France and Australia.

6.2.2.1 Search engine in South Korea

It has become a common trend today for platform operators (referred to in South Korea more as "portal sites")[191] such as Google and Facebook to take the lead over content

[190] TED is a nonprofit organization devoted to spreading ideas, usually in the form of short, powerful talks (18 minutes or less). TED began in 1984 as a conference where Technology, Entertainment and Design converged, and today covers almost all topics — from science to business to global issues — in more than 100 languages. Meanwhile, independently run TEDx events help share ideas in communities around the world. (Retrieved from https://www.ted.com/about/our-organization)

[191] In South Korea, a search engine is more often called a portal or portal site. In this regard, we would like to designate, indicate, and refer to the search engine as a 'portal' when explaining the case which

producers. In South Korea as well, the monopoly status of portals began in 2003, and as digital news increased at that time, their monopoly power increased (Kim, Y. 2008, p. 30). At that time, 77% of news users were already consuming news on portal sites, and this behavior continues until the present day (2021). According to the Digital News Report 2019, 76% of South Koreans read news articles on portal sites. On the other hand, by way of comparison, 4% of people read articles on media-owned websites.[192] In other words, it can be said that literally all news in South Korea is consumed through portal sites (search engines). Among them, Naver is by far the most used search engine by South Koreans.[193] Naver users mainly achieve access through smartphones,[194] and their favorite services appear in the following order: search services, news, e-mail, and shopping. Among these services, the information that users mainly search for can be cataloged under the category of news (politic, economy, social). In other words, South Koreans access Naver to view (read and listen to) news and use Naver to search for yet other news at the same time. This situation means above all that digital news consumption is too concentrated on Naver, and on Naver's powerful, ubiquitous influence.[195] On the other hand, there are no examples of South Korean media outlets successful in any of their own paywall strategies for subscribers,[196] and it is predicted

applies to South Korea.

[192] This as a result of surveying the channels most used to watch online news over the past week, in 38 countries, 29% of media websites, 31% of search engines and news gathering services, 24% of social media, and 14% of mobile and email notification services. In comparison, South Korea showed high dependence on search and news gathering service platforms, with 4% of media websites, 76% of search and news collection services, 9% of social media, and 10% of mobile and email notification services (Kim, S. & Kim, W. 2019. p. 22).

[193] According to the 2019 "portal site usage behavior survey analysis report", domestic portal sites Naver (94.7%) and Daum (69.2%) are ahead of Google (67.5%) (Jang, S. (2019), "How satisfied are you with the portal news service?", in: *Mediatoday*, 02. Dec. 2019. Retrieved from http://www.mediatoday.co.kr/news/articleView.html?idxno=203916).

[194] The devices used to access the portal were identified as smartphones (73.1%), desktop PCs (16.2%), laptops (8.5%), and tablet PCs (2.2%) (ibid.).

[195] As a result of a survey of platforms "using news in the past week" in Korea, Naver showed the highest score at 66%. After Naver came YouTube (40%), Daum (34%), KakaoTalk (28%), Google (25%), and Facebook (25%) (Kim, S. & Kim, W. 2019. p. 31).

[196] Jeong Donghoon (2017) points out the reasons for the failure of B2C Paywall system in South Korea as follows: 1) Media outlets did not properly interpret the changing mobile environment. 2) Readers were accustomed to free news 3) A small market size 4) High expectations of users for digital platforms 5) Undifferentiated news supply from media outlets (Jeong, D. et al., 2017, p. 104).

with some concern that they will also not succeed in the future (Jeung, D. 2017, p. 59). In this situation however, peculiarly, South Korean media outlets do have a structure (B2B) that sells news to companies such as portal sites. This is a typical feature of the South Korean portal market, and overseas portal sites (search engines) do not as a rule purchase content on a fee basis except for the major news agencies (e.g. AP, Reuter and UPI). However, South Korean daily newspapers and Internet news media outlets have made considerable profits early on by selling the latest news, breaking stories, and news DBs (Date-Bases) to portal sites such as Naver. For example, in the case of the Chosun Ilbo newspaper, which has the largest circulation in South Korea, it is earning 1.5 to 2 billion KRW (more than 1 million EUR) in annual revenue from the portal sites (Jeong, D. et al., 2017, p. 63). In this regard, it is necessary to examine the background of the phenomenon of search engines purchasing news content from media outlets, centered on Naver in South Korea, and how sales fees are set.

6.2.2.2 Naver's news service

South Korea's portal market, which first appeared in 1999, entered a growth phase after 2002. From this point on, portal sites began to provide news services in earnest (Kim, Y. 2008, p. 29). They secured various news contents through contracts or partnerships with offline and online news providers, and served as news platforms that provided this coverage on their website (ibid., p. 43). At this time, their intermediary role was not a simple linkage method, but a strategy in which media outlets provided news in bulk, and the editorial activity of the portal site was actively reflected in the subsequent news contents (ibid., p. 58). In this respect, Korean portal services are differentiated from overseas portal sites. For example, if Google or Yahoo obtain their income in the advertising market by servicing news content of media outlets in the form of a link, Korean portals provide news content on their own homepage through contracts or partnerships with news providers, and, moreover, are active in raising advertising revenue. Furthermore, they produce their own portal news by either briefly editing long titles from news provided by the media outlets, or by hiring editors and reporters directly. In this regard, criticisms have been raised that Korean portals even play the

role of an actual news media, and the issue of unfair transaction methods has been raised since early on (Hwang, Y. 2005, p. 10).

In such a situation, Naver, the one media entity most under dispute, changed the news link method to out-link in 2007, and will guide users to the content of the article on the website of the relevant media outlet (Kim, Y. 2008, p. 58). In addition, by creating a page for each media outlet called 'Newscast' on the Naver homepage, the editorial rights of news were left to the media outlets, emphasizing cooperation with the media outlets. As a result, the number of visitors to the website of media outlets increased significantly, and media outlets became engrossed in competition to increase the number of visitors to their websites. To increase the number of clicks, media outlets began to slightly change the title or content of the articles they had already sent, or alternatively to copy the articles of competitors. In addition, they started writing related articles by following news articles related to popular search terms (popular search rankings) on the portal (Kim, T. & Son, J. 2007, p. 122). As a result, a reporter for a major daily newspaper could write 50 to 100 short articles a day, and the same article was sent out with different titles or some changed sentences to avoid losing competition with other media outlets (Jeung, D. 2017, p. 87). This has become an attractive source of income for the news media outlet, as it generates a certain amount of revenue per click.[197]

Naver announced another reorganization plan in 2013. It changed the existing 'newscast' to a 'newsstand', and strengthened the news search service and news content service (called Naver News, much like Yahoo News and Google News). 'Newsstand' is an out-link method provided only on the PC web; and an in-house news search and news content service also provides articles from affiliates in an in-link

[197] There are two types of online advertising, CPM and CPC. In CPM (Cost Per Millennium), advertising costs are paid only when a banner is exposed, and in CPC (Cost Per Click), advertising costs are paid only when the user clicks on the banner to move to the advertising page. CPM would be a lot easier, but the unit price is ridiculously low. When exposed to 1,000 people, it costs between 500 KRW (about 38 cent) and 4,000 KRW (about 2,90 EUR). CPC can have received from 50 KRW (about 4 cent) to 300 KRW (about 22 cent) per click, but the actual click rate of the banner is not even in the range of 1-3% depending on the location (Lee, J. 2018, pp. 6-11).

method on both the PC and on mobile (Kim, M. 2017, p. 94). At that time, Naver's reorganization was seen and recognized as a way to reduce the sensationalism and redundancy of excessive article titles and to improve the quality of digital news content (ibid., p. 95). However, it does happen to coincide with the time when Google strengthened its mobile news service in Korea in 2013 (Kwon, J. 2016, p. 32). Newsstand provides news from affiliated media on the first screen (web page) of the portal site, and 30% of advertising revenue generated thereby in the form of out-link is delivered to the media outlet. And the attached news search service basically provides the news of affiliated media outlets in an out-link method. But there is no economic benefit for media outlets other than perhaps the gain of securing an additional number of visitors (Kim, M. 2017, p. 95). On the other hand, in the case of news content provided on the Naver website in the in-link method, Naver still paid content usage fees to the media outlets. As of today, Naver enters into an individual fee contract with the media outlets for Naver's own news content service.[198] For example, as best we presently are aware, 119 South Korean media outlets were selling news content to Naver in October 2017 (Kim, M. 2017, p. 97).

6.2.2.3 Purchase news of Naver

It came to pass first in 2002 that portal sites paid media outlets a fee to purchase news contents in South Korea. At that time, Yahoo Korea had been playing the role of a portal in a de facto unrivaled position, but domestic portal sites chose to contract or partner with media outlets to provide a variety of news contents (Kim, Y. 2008, p. 58). In the meantime, media outlets have easily partnered with portal sites to find more subscribers in the online market. However, it is not known just how the revenue sharing contract is conducted in the partnership between them. According to Kim (2017), who analyzed the digital news market in South Korea, Naver pays them on a monthly basis, but then too, the specific method of how the usage fee is calculated is unknown (Kim,

[198] In 2019, 411 media outlets applied for a search service alliance with Naver, but only 26 media outlets signed an alliance. This is the aspect where one can get a glimpse of Naver's influence.

M. 2017, p. 98). According to Naver, “The usage fee is calculated considering the size of the media outlet, the influence that particular media has in the offline market, and how the articles are used within Naver (ibid.). Other than that disclosure, Naver’s position is that detailed standards cannot be revealed because they constitute the contents of a private contract with each affiliate. On the other hand, looking at the position of domestic media outlets on how usage fees are being set, media outlets have been demanding appropriate compensation, being as news articles are provided on portals at especially low prices (ibid., p. 105). According to them, the price of providing articles on portals varies from company to company, and the content adopted by each media outlet is different, so the amount of revenue is likewise very different. According to a general explanation by related employees, usage fees are fees paid by portals according to factors such as media influence, quality and credibility of content, the brand value, and by readership (ibid., p. 106). As a result, the majority of complaints are that the portal (Naver) unilaterally determines the price of digital news contents purchased from the media outlet and almost monopolizes the related revenue (see ibid., p. 113; Jeong, D. 2017, p. 63). In the related industry circles, it is not well-known which news media outlet is receiving the usage fee, and the criteria and methods of determining the usage fee for news content are also unclear.

As such, in South Korea, conflicts between media outlets and portal sites over the distribution of digital news contents are raised via various issues. First of all, the media and portals exhibit different positions on the extent to which digital news content contributes to revenue. Media outlets count the number of people entering portals due to news as “contributions and achievements of news”. However, the portals themselves judge the contribution of news instead in terms of how these lead consumers to advertising revenue. Of course, it is true that these are very different positions; however, above all, related industry experts criticize that there is no reasonable way to calculate the contribution that news actually makes to the bottom line (see Kim, M. 2017, pp. 107-112). Furthermore, the most problematic unknown is the amount of usage fee that media outlets receive from portals. Media outlets are of the opinion that the usage fee is “less than the production cost”, “fair evaluation is not made”, and “a fair standard

for calculation is yet necessary" (Kim, M. 2017, p. 111; An, M. & Kim, S. 2017, p. 222). In other words, it is the position of the media outlet that the contract itself is not fair because the portal (Naver) takes the lead in the fee negotiations. In this regard, Kim (2017) pointed out that the value of news content requires a more in-depth economic approach (p. 114). And then again, many people agree with a need for further discussions and studies for calculating the economic value of news content, and that a debate concerning the fair distribution of profits is deemed unavoidable, and more efforts need to be made for this purpose. Examples include academic research, related field employee dialogue, and mediation with national institutions (e.g. An, M. & Kim, S. 2016; Kim, M. 2017; Jeong, D. 2017). Needless to say, the conflicts over profit distribution are still not resolved.

In the midst of this, suddenly in April 2020, Naver completely abolished all usage fees that had been paid to media outlets so far. According to Naver, "we will focus now more on our role as a partner and platform that provides technical tools and data to continue sustainable growth with media outlets" (An, H. 2019). Naver switched from the existing pay model to a news advertising revenue model as a way supposedly to secure transparency and to ensure the sustainable growth of media outlets. This decision was also a unilateral action by Naver; and as a result, Naver presently allows the media outlets to operate all advertisements submitted by the media to Naver on Naver's website. This decision also put an end to the unfair dispute over news usage fees between Naver and the media outlets. However, news readers now encounter advertisements in the middle of the article and at the bottom of the article, as well as different advertisements for each news article. In other words, the controversy over cost that has existed between producers and intermediaries is now transported onto the backs of the consumers. On the other hand, media outlets are now working very hard on advertising sales for the Internet space given to the portal site Naver.

In the enlightening case of Naver as described above, we can proceed to confirm that the price of digital news content as determined by the desire and purchasing ability of the buyer in the B2B sector also applies similarly to the B2C case formerly discussed.

Not only that, we were able to get a glimpse of how Naver competed in expanding its influence in the new digital market. Naver's news provision as such is an intra-sectoral competition, and it quickly entered the media industry with a service strategy differentiated from global competitors such as Yahoo and Google. And in this process, Naver paid news usage fees to media outlets to provide news content. There occurred an inter-sectoral competition between first: news media capital which had not yet entered the portal market, and second: Naver (large capital). However, in the early period, Naver's power (influence) was lower than that of news media outlets, and news content was an essential service for portal sites. In this situation, the price of digital news content has ultimately been decided by a company with high influence (monopoly power) in the market. Naver has actually paid higher usage fee to media companies with the proper size of circulation or a high brand value than to those of lesser rank. However, paying a usage fee to Naver has now ironically become an unnecessary expenditure. This is because, although news cannot be circulated today in South Korea without Naver, which has monopolized the production and consumption of news, Naver, as a consequence, unilaterally abolished the usage fee paid for news content over the past 30 years. We can thus catch a glimpse of the digital media environment in which the digital newspaper industry competes with the giant IT industry in the case of the portal site Naver. Of course, even in the news media market itself, competition among numerous news media outlets, that is, intra-sectoral competition, is fierce and expanding.[199] In this competition (inter- and intra-sectoral), the price of valueless goods is determined only by the monopoly power of the market, and as a result, the digital environment is accelerating the monopoly power of the monopolies.

6.3 Monopoly pricing of digital TV broadcasting contents

The structure in which digital news content is established at a monopoly price can also

[199] News media outlets must compete with other sectors such as portals, and at the same time, compete with news media outlets within the sector. Non-price competition occurs in this competition between capitals, and these costs do not contribute to the value of the commodity or use-value (see section 5.3.3 of this paper for details).

be confirmed in the case of digital TV broadcasting. In order for once produced TV content to be traded as a commodity, copying and re-transmission of these products must be physically restricted. In other words, if there were to be no technical restrictions or legal regulations, anyone could easily access it and pass it on to others simply for free. Therefore, physical restrictions are also required in the broadcasting market, through which TV content can be sold as a commodity.[200] And when these physical constraints become commonplace, the valueless goods consequently need a selling price in the market. This is because, as a result, goods with no value must play the role of commodities in the market. In the case of Netflix, for example, we are probably paying 2 euros to watch a movie today. And one has to pay 12 euros per month for a prime service without ads on YouTube. We know that these (fluctuating) prices were established completely independent of, and with no real thought given to the price of production or the inherent economic value of the commodities. Therefore, there may be frequent conflicts between producers and buyers, and this in the very processes of trading commodities. We will interpret this phenomenon and contend that the essence of these conflicts starts from the characteristics of these products, and show that the price of commodities is determined by monopoly power.

In this section, we will look at examples of conflicts that arise when (digital) TV content is traded. The first cases involve conflicts that occurred where the transmission of terrestrial broadcasting was at issue; 1) Conflict of re-transmission fees in South Korea, 2) Conflict of carriage fees by ARD and ZDF in Germany.[201] And the second item cited involved an additional conflict over the license fees of public broadcasting.

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[200] In the 1900s, as broadcasting technology first began to develop, copyrights serving to block the copying of these products was strengthened, not only in the broadcasting industry but also in the film and record industries. We can find specific methods cited in the literature of Ronald Bettig (1996) to technically block the copying of films, cable, and videocassette recorder. In other words, through the case of the media industry in the United States, it is possible to see how media products, once produced, are artificially blocked from being copied (see pp. 82-181).

[201] ARD (Arbeitsgemeinschaft der öffentlich-rechtlichen Rundfunkanstalten der Bundesrepublik Deutschland) is a joint organisation of Germany's regional public-service broadcasters. ZDF (Zweites Deutsches Fernsehen) is a German public-service television broadcaster based in Mainz. They are run as an independent nonprofit institution, which was founded in cooperation by all federal states of Germany.

And we will look at the case of the contribution service (Beitragservice) of ARD, ZDF and Deutschlandradio in Germany. We can confirm that these conflicts originate from the characteristics of digital information commodities, and above all, it can be confirmed that the dispute is caused by the monopoly power at work in the market. In other words, the conflicts we are going to examine in this section can be seen in their more essential aspects via the analysis of the value and price of digital information commodities.

6.3.1 Conflict of terrestrial broadcasting

6.3.1.1 Review 1: Conflict of re-transmission fees in South Korea[202]

Cable TV in South Korea started in 1995. In the days when only terrestrial broadcasting existed, there was only program transactions between a terrestrial broadcasting service provider[203] who planed, organized, produced, and transmitted TV programs, and a service provider that provided content (Yeom, S. & Park, M. 2010, p. 36). However, with the advent of cable TV, professional program providers (PP) appeared, and the broadcasting channel trading market was formed. In this case, broadcasting channel transaction means that a program provider[204] regularly organizes programs and supplies broadcast channels with advertisements with which to pay TV platform providers.[205] Looking at the trading situation of broadcasting channels in the early days of cable TV, program providers operated under a license system starting in 1995. Hence,

[202] The conflict of re-transmission fee refers to a price dispute arising when Korean terrestrial broadcasters retransmit (resell) their broadcasts to pay-tv platform operators (cable TV, satellite TV, IPTV). In other words, it is a question of how to determine the price of these products when once produced broadcast content is retransmitted. Terrestrial broadcasting companies sell their own broadcasts as individual contents (programs), but in the dispute over terrestrial re-transmission fees in South Korea, the entire broadcast channel is traded.

[203] Terrestrial broadcasting service provider refer to operators with terrestrial broadcast channels, such as KBS, MBC, SBS, ARD, ZDF, and RTL.

[204] Program providers are also called channel providers because they provide their own TV channels.

[205] Pay TV platform providers include cable TV, satellite TV, IPTV, and more recently new inclusions such as Amazon TV, Netflix, and Disney TV.

cable TV was obligated to (re)transmit all licensed channels, and the distribution of license fees between system operator (SO) and program provider was carried out through collective negotiations (ibid., p. 11).[206] In this situation, there were not many conflicting interests between cable TV operators and program providers. However, in 2001, when business licenses for program providers changed to a registration system, the number of them increased rapidly. In addition, from 2002 on, it was possible to enter into a channel configuration contract between an individual pay TV operator (SO) and an individual program provider. As a result, the relationship that previously could be called fairly equal was changed to a relationship in which program providers were subordinate to the system operator (ibid.). In other words, the influence of platform providers, namely a system operator, had become stronger. Competition among program providers, which accordingly increased in number, has now intensified, and those who focus on advertising revenues can maintain low license fees (see ibid., pp. 36-39). This is confirmed from the license fees paid by the system operator to the program provider, which fell to 13% in 2003 from 32.5% in 1995 (ibid., p. 11). As such low license fees payments continued, the Korea Communications Commission[207] in 2008 stipulated that the distribution of license fees for program providers should be more than 25% (ibid., p. 40). As a result, the average rate of license fees for channel usage paid to program providers by the 99 cable TV operators in 2009 was maintained at 25.2%. As such, mutual conflicts were stabilized to some extent by the Korea Communications Commission's forcing of payment of license fees and their regulated amounts. However, related industry employees repeatedly complained about the unclear criteria for distributing license fees (ibid., p. 43).

On the other hand, according to Kim (2017), who studied the dispute over re-transmission of terrestrial broadcasting in South Korea, the problem of terrestrial broadcasting re-transmission began to emerge in earnest in 2008, when IPTV (Internet

[206] In 1995, the cable TV service fee in South Korea was set at 15,000 KRW, of which 32.5% went to program provider and 15% went to system operator (Yeom, S. & Park, M. 2010, p. 36).

[207] The Korea Communications Commission is a South Korean media regulation agency modeled after the Federal Communications Commission of the United States of America.

Protocol Television) was introduced. In other words, as pay TV operators expanded in diversity to include cable TV, satellite TV, and IPTV, terrestrial broadcasting companies as well as the transactions of their TV channels became likewise more diverse and complex. IPTV operators who have entered the TV market have been active in concluding contracts for re-transmission of terrestrial broadcasts. This is because satellite TV had great difficulty in attracting subscribers when it started its business in 2002. Although satellite TV provided 140 channels, it was unable to retransmit terrestrial broadcasting. As a result, satellite TV had great difficulties in attracting subscribers (Kim, D. 2002, p. 77). In the end though, through these cases, IPTV operators became active in terrestrial broadcast re-transmission contracts. Hence, Kim points out that 2008 was the moment when a new concept of a terrestrial re-transmission contract or re-transmission fee, one which had not existed before, came into being (Kim, T. 2017, p. 62). According to Yoon (2017), as the sales of TV advertisements, which are the main sources of income of the terrestrial TV service providers, continued to decline, the movement to recover same in return for re-transmissions of terrestrial TV increased and diversified.[208] In fact, with the introduction of IPTV in the year 2008, terrestrial broadcasters first demanded a re-transmission fee for cable TV (Yoon, S. 2017, p. 80). However, cable TV operators took the stance of complaining that they had already been performing universal TV services and, moreover, as such, did this in order to alleviate broadcasting blind spots. So, in a situation where terrestrial re-transmissions were being made free of charge, and this over a period of several decades, the differences between the relative positions could not be easily narrowed (ibid.). In the end, their conflict required legal judgments, and various lawsuits were filed in court (see Kim, T. 2017; Yoon, S. 2017). And in 2013 the court[209] ordered a ban on unrecompensed re-transmission of terrestrial TV channels, and cable TV operators therefore had to pay a re-transmission fee (Kim, T. 2017, p. 63). Subsequently, in South Korea, terrestrial broadcasters would then require

[208] It is natural for companies to find ways to increase profits. However, it is necessary to focus on the fact that these revenues arise from the characteristics of digital information commodities.

[209] Seoul Central District Court. 2013.2.15. Decision 2012 kahap 2208.

of the pay cable TV operators 280 KRW (about 0,20 EUR) per month per subscriber (ibid., p. 64). Although they were dissatisfied with the terrestrial broadcasters' unilateral re-transmission fees (it is called CPS: Cost Per Subscriber), some large cable TV operators still signed contracts with terrestrial broadcasters. However, small and medium-sized cable TV operators continue to re-transmit terrestrial broadcasts without signing any contract with terrestrial broadcasters (ibid., pp. 64-66). Therefore, lawsuits and claims for damages between cable TV operators and terrestrial broadcasters are on the increase.

In the course of following the legal disputes, we can confirm that terrestrial broadcasters abuse their dominant position in the market. The fact that the re-transmission fee was positioned at 280 KRW is a one-sided price, suggesting a dominant position in the market; and some related industry employees point out that there is actually no solid or transparent basis for a truly objective re-transmission fee calculation. In addition, despite the considerable differences between IPTV, satellite TV, and cable TV, the same re-transmission fee was set for all of them. It is also argued that terrestrial TV should be able to be received by more people as a broadcast because public responsibility is now stipulated.[210] In this situation, re-transmission's conflict within the TV industry has been dependent on court rulings, and this without establishing a policy directive for the re-transmission system. In 2013, the Korean National Assembly proposed an amendment to the Media Act and the IPTV Act to expand the scope of terrestrial re-transmission and allow the state to support it. The amendment would include in its contents the expanding of the target of mandatory re-transmission and establishing a new consultation structure to resolve disputes between program providers and system operators. However, this did not then lead to an amendment of the current law (Yoon, S. 2017, p. 81). Yoon points out that, in the absence of an undisputed re-transmission policy, the conflict between the court's re-transmission decision and the market continues to worsen (ibid.). And this conflict only

[210] Cable TV operators do claim that they have been implementing universal broadcasting services and resolving blind spot difficulties such as occur in mountain areas.

serves to confirm the difference of positions between each of the participants during the CPS renegotiations held every three years. In the June 2020 negotiations, terrestrial TV raised the IPTV re-transmission fee to 500 KRW (0,40 EUR) per subscriber. This is a 25% increase from the 400 KRW (0,30 EUR) signed in 2018 (Sun, M. 2020).

In the depictions above, we can see the problems involved in how to determine the price of such commodities when a once-produced TV program (channel) is re-transmitted to another pay TV platform. At this time, terrestrial TV entities are charging re-transmission fees based on their monopoly influence, which has nothing to do with the price of production or the value of said commodities. In other words, when valueless goods are sold as commodities, the price of these commodities is actually determined by the monopoly power of the relevant market as well as by the purchasing power of the respective buyer and even when in conflict to this. Under this rubric, the conflict between terrestrial broadcasting retransmission is, in the final analysis, not because there is no policy or no legal basis, but because importantly there is no objective standard for determining the price. This market structure is confirmed more clearly with the newly emerging digital broadcasting technologies; and above all, it is advantageous to companies that have secured giant capital or happen to be first in the market. In other words, we can understand the case of providing digital information commodities for free on YouTube and Facebook as non-price competition.[211] For example, terrestrial TV entities are maintaining and/or expanding their market share while providing their products to YouTube for free. That is, through non-price competition, they preserve the monopoly profits formed in the market. In other words, terrestrial TV operators are providing their products free of charge to monopolies such as YouTube in the 'global' market based on the monopoly profits developed and preserved by them in a 'domestic' market. Here, a protection of the content creators,

[211] We presented a conceptual distinction in the previous chapter 5 on non-price competition; Monopoly capital, which is placed in an intra-sectoral competition and inter-sectoral competition, competes with each other and at the same time colludes via agreements. Non-price competition includes so-called product differentiation, intense advertising, tie-in sales, and discount sales, etc. These costs are unproductive costs because they do not contribute to the value of the product or use-value. See again section 5.3.1 of this dissertation.

which they always claim to be doing, or call it ‘copyright enforcement’, becomes superfluous. This shows that digital information goods are inherently valueless things, while at the same time showing that, via intellectual property rights, valueless goods can be commodified. In this respect, we can, moreover, confirm that this pricing of digital information commodities, especially TV programs, is also determined by the influence of the market (monopoly power).

6.3.1.2 Review 2: Conflict of carriage fees by ARD and ZDF in Germany

In contrast to South Korea, cable TV operators in Germany are paying re-transmission fees to copyright trust organizations such as GEMA[212]and VG Wort,[213] etc.[214] In this respect, there seems to be no conflict of re-transmission fees between terrestrial TV and cable TV in Germany.[215] But nonetheless, there remains indeed a dispute regarding carriage fees (Einspeiseentgelte) in Germany between an ARD/ZDF on the one side and a cable TV operator, for example, Vodafone, on the other.[216]

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[212] Gesellschaft für musikalische Aufführungs- und mechanische Vervielfältigungsrechte (GEMA; Society for musical performing and mechanical reproduction rights) is a government-mandated collecting society and performance rights organization based in Germany, with administrative offices in Berlin and Munich.

[213] The collecting society Wort (VG Wort; Verwertungsgesellschaft Wort), based in Munich, administers the royalties from secondary exploitation rights attributable to language works, including radio and television, in Germany.

[214] GEMA grants cable network operators and operators of master broadcasting antennas the music rights for re-transmission according to §§ 20, 20b German Copyright Act. The re-transmission right allows the responsible network operators to feed in the broadcasted program simultaneously, unaltered and thoroughly in the respective cable network and retransmit it to the associated households. The remuneration for cable re-transmission rights exercised by the collecting societies AGICOA-Germany, GEMA, GÜFA, GVL, VFF, VGF, VG BILD-KUNST and VG WORT accounts for 5.5% of those cable network operators retransmitting radio and TV programs by cable.

[215] In the case of Germany, the conflict of re-transmission fee seems to have been resolved to some extent through the mediation of the state agencies in the long-term interests of the related operators. However, this does not mean that state agencies (courts, GEMA) have reasonably adjusted or determined the re-transmission fees, that is, the price of the commodity. We see that the dispute was settled by mutual agreement or compulsory arbitration on prices which we maintain cannot have been calculated in an objective manner or according to an objective measure.

[216] There was also a dispute between public broadcasters and cable TV of small and medium-sized companies in Germany. There is also a problem with carriage fees between public broadcasters and

First of all, cable TV operators in Germany have been obligated to re-transmit channels of public broadcasters (ARD/ZDF). [217] In the meantime, from 2008 on, a contract for mandatory re-transmission was signed between public broadcasters and Germany's largest cable broadcasters, KDG [218] and UKBW [219] (Kim, T. 2017, p. 67). The obligatory re-transmission contract (Must Carry Regulation) became the legal basis for the carriage fees paid as a consideration for using the transmission line of the cable TV provider, which inevitably occurred when the broadcasting was re-transmitted. In fact, according to the contract for re-transmission, ARD/ZDF had until 2012 paid 60 million euro to Kabel Deutschland and Unitymedia, both of which in turn have since been taken over by Vodafone. However, in spring 2011, the broadcasters jointly decided to cancel the contract and stop their payments (Krieger, J. 2017). Faced with this fait accompli, cable broadcasters in turn filed a lawsuit, and disputes over carriage fees in Germany began. Looking at the legal dispute in more detail, the previously agreed upon obligation of public broadcasters ARD/ZDF to abide by the mandatory carriage contract was emphasized as the vital point.[220] In addition, the cancellation of the mandatory carriage contract jointly exercised by public broadcasters was viewed as an abuse of a dominant position in the market under the Fair Trade Act (ibid.). And the higher regional court's rulings on all these matters supported the hands of the cable broadcasters (Krieger, J. 2017).

The above conflict of carriage fees in Germany at first resulted from public

satellite broadcasting and DVB-T. However, our discussion is limited to the dispute between the public broadcasters ARD and ZDF and the large cable TV provider Vodafone.

[217] The programs of the public broadcasters ARD and ZDF have to be fed into the cable network due to must-carry regulations. In return, carriage fees were previously paid to the cable network operators. However, these payments were discontinued on January 1, 2013 after the broadcasters terminated the carriage contracts in due time. This section deals with the question of whether the cable network operators are entitled to remuneration for their carriage service.

[218] In 2013 Kabel Deutschland merged with British telecommunications company Vodafone, now 'Vodafone Kabel Deutschland'.

[219] UKBW is the Unitymedia Kabel BW. In 2019 Unitymedia was merged with Vodafone.

[220] Pressemitteilung (25/2017) von OLG Düsseldorf, VI-U (kart) 16/13. 19. July 2017. Retrieved from https://www.olg-duesseldorf.nrw.de/behoerde/presse/archiv/Pressemitteilungen_aus_2017/20170719_PM_Oeffentlich-rechtliche-Rundfunkanstalten/index.php

broadcasters using cable lines to transmit their own channels and content. And the legal dispute centered here on the question of whether the public broadcasters are obliged to pay fees for the distribution of their channels and content on cable networks (ibid.). According to the court, the carriage contract from 2008 has not been effectively cancelled, meaning that the broadcasters are still obliged to pay carriage fees. However, the main issue we are at pains to adduce here is that there was no objective standard for calculating the carriage fees, and furthermore let us not forget that it is, of course, possible to use a cable line without any additional labor or cost.[221] And the one side was making this very point. But in other words, on the other side, any cable TV company understandably wants to recover part of its equipment cost or cost price (Kostpreise)[222] afforded to its users. This can be seen as a result of the monopoly influence formed in the market[223] and the historical (traditional) specificity of the relevant market.[224] The problem arises that all this could set a precedent, emerging as it does in this present day when platforms are now diversified. For example, a telecommunications company providing an Internet network may request a network fee from a public broadcasting service provider, and a platform provider such as YouTube may request a fee for using its own server.[225]

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[221] The Düsseldorf High Court ruled payment of a transmission fee of 3.5 million euros. These calculations are based on the costs that have been paid so far.

[222] In Marxist economics, cost price refers to the cost of the means of production and wages incurred to produce a commodity.

[223] The ability to recover constant capital (means of production) in addition to average profits in certain industries is possible through the monopoly power of a company.

[224] Germany's cable network construction project was initially handled by the German government agency (Deutsche Bundespost). Then it was operated by Deutsche Telekom AG from 1995 on, and in 1997 an exclusive commission demanded that Deutsche Telekom should sell its cable network. Currently, the German federal government owns 31,9% of Deutsche Telekom's shares. In other words, strictly speaking, the cable network construction project was actually built up from the beginning with the taxes of the people. Furthermore, the carriage fees paid by public broadcasting companies to cable broadcasting companies today are covered by the license fees for public broadcasting. This is then a situation where the general public is paying not only the initial construction cost of the cable track connection, but also a fee for using that very track connection.

[225] Of course, these issues may be resolved to some extent through the active intervention of the state. However, the regulation of obligatory (re)transmission of public broadcasters requires more and more powerful state intervention in the fast-changing digital media environment.

As the media environment changed due to the onward development of information and communication technologies, the state's intervention was required; but the state's intervention is never always guaranteed to prove profitable for its own companies (capital) or even its own people. The German cable network market was operated by Deutsche Bundespost and by Deutsche Telekom until 1997, but for many reasons, German cable broadcasting today is operated by global companies rather than German companies. In this respect, the dispute over carriage fees in Germany is in a dilemma. One thing is clear however; namely, that it has become inevitable that various and varying policies of capitalist states are necessary in order to actively and specifically protect the interests of their own monopoly capital.[226] Such state intervention is required whenever a new technology emerges; and after some time the relevant market may somewhat drift back into an inertia state. However, this market stabilization is by no means exclusively the sole result of state intervention. It is simply that the monopolistic domination of a few companies has eroded even certain other older conflicts and competitions in the market. That is to say, although seemingly stable, monopoly profits can always be maximized. We can easily see these precedents in the film and music industries.

6.3.2 The license fees of public broadcasting

The most urgent and conspicuous part of the state's intervention in the broadcasting industry is today the operation of public broadcasting services. In particular, the determining of the license fees for a public broadcasting service requires strong state intervention. This is because, normally, pay TV fees are formed by buyers' desires and payment abilities, whereas license fees for public broadcasting service must be paid irrespective of whether the broadcast is received or not, wanted or not wanted.

[226] In this respect, we can see the "Feed-in electricity 'tariffs' system" as a recent example. Feed-in electricity tariffs (FiT) were introduced in Germany to encourage the use of new energy technologies such as wind power, biomass, hydropower, geothermal power and solar photovoltaics. Feed-in tariffs are a policy mechanism designed to accelerate investment in renewable energy technologies by providing them remuneration (a "tariff") above the retail or wholesale rates of electricity (see Wikipedia. Retrieved from https://en.wikipedia.org/wiki/Feed-in_tariffs_in_Germany).

Therefore, there is a large potential for conflict when reforming the license fee system for public broadcasting or raising the license fee.[227] Among these conflicts and changes, none is more at issue than the problems involved in explaining clearly the basis for calculating a reasonable license fee and the resulting legal imposition of obligatory payments. Of course, in many modern societies, various public services are financed by taxes. However, the purist theory goes that the license fee for public broadcasting should not be a tax directly supported or managed by the state. Representatively, the contribution service in Germany is a non-tax utility bill (Abgabe), which is paid by all homeowners regardless and without exception. In this sense then, we need to look at how the contributions serving to finance a public broadcasting service are formed and maintained. In particular, a few years ago Germany entered into a debate about the legal basis for compulsory payment of broadcast fees during a process of changing to the contribution model (Rundfunkbeitrag). And at present in Germany, the contribution model for the ARD, ZDF and Deutschlandradio seems to have already some legal basis in place. Nevertheless, the discussion about the operation of public broadcasting or the setting of license fees is still being formulated and issues raised.

6.3.2.1 Review 3: Contribution service in Germany

The main thrust of the new contribution model in Germany was to lump the existing license fee, which had heretofore been levied on those actually using the system, onto private home owners (households) and workplaces regardless of whether they took advantage of the offerings or not (Baetz, B. 2012). However, a great deal of controversy arose before and after the start of this recent contribution model, and 600 lawsuits were in progress within a year of the system alteration (Bilger, C. 2014). Dividing the point of controversy separately into two broad issues, the first is the very nature of a contribution model in a legal sense. In other words, it was not clear whether the license

[227] South Korea's public broadcasting license fee has not increased from 1981 up to now 2023. It is 2,500 KRW per month (about 2 euros).

fee was in fact truly a legal concept under the category of royalties or perhaps of utility bills, and many scholars have expressed differing views. In this process, the federal administrative court stipulated that the collection of non-taxable utility bills, termed a 'contribution', is a financing that meets the characteristics of public broadcasting services based on the "binding precedent of the federal constitutional court" (Ehrenberg, M. 2016).[228] The second controversy was the question of whether it was appropriate even to impose a contribution model, (which, of course, serves as the financial basis of a public broadcasting service) upon homeowners, that is, upon households. On this issue, the court resolved this controversy by terming it "the normal way" to receive public service offers on say, the Internet.[229]

As a result, it seems that Germany's contribution model has managed to establish a legal basis to some extent. However, before and after the reform, debates about whether the reform is unconstitutional (or not) stand out. For example, according to Anna Terschueren (2013), who was a former employee of Norddeutscher Rundfunk (NDR), the contribution model is 'a purpose tax against competence'.[230] Therefore, it is argued that the contribution reform amounts to an increase in taxes to maintain the income of public broadcasters; and due to this respect, a new financial model is needed. Meanwhile, German law scholar Ermano Geuer has criticized the flat-rate charge (Pauschale) as a violation of the principle of equality. According to Geuer (2013), radio reception is specifically linked to people, but these flat-rates are based on the number of apartments. In addition to the criticism that the contribution reform contains an unconstitutional element, Terschueren raises problems with the financial structure of

[228] The Federal Administrative Court declared the contribution to be lawful in its judgment of March 2016 (Ehrenberg, M. (2016), "Rundfunkgebühr ist rechtens", in: *Der Tagesspiegel*, Retrieved from https://web.archive.org/web/20171015125428/http://www.tagesspiegel.de/medien/bundesverwaltungsgericht-rundfunkgebuehr-ist-rechtens/13339096.html).

[229] Der Tagesspiegle (2018), "Rundfunkbeitrag in wesentlichen Punkten verfassungsgemäß", 18. July 2018. Retrieved from https://www.tagesspiegel.de/gesellschaft/medien/bundesverfassungsgericht-rundfunkbeitrag-in-wesentlichen-punkten-verfassungsgemaess/22811662.html

[230] Anna Terschüren (2013), concluded in her doctoral dissertation while working for the German public broadcaster (NDR) that the contribution reform was unconstitutional (see her Dissertation. Retrieved from https://www.db-thueringen.de/receive/dbt_mods_00022199).

public broadcasting service as such. For example, the structural relationship between the broadcasters and the KEF[231] (Kommission zur Ermittlung des Finanzbedarfs der Rundfunkanstalten) remains a subject of controversy when providing the necessary resources for a public broadcasting service. Furthermore, ARD and ZDF are still not released from the problem of endangering the diversity of programs, being as they too are obsessed with, and practically beholden to advertising and sponsorship (Müller, M. 2013). This is because there is now in place on-going ancillary revenue from public broadcasting programs, as well as licenses for sale.[232] In addition, there is controversy over the high cost of broadcasting, combined with criticism that public broadcasting service is too pro-governmental. These critical stances often question the fundamental role of public broadcasting service, and go on to point out the excessively compulsory nature of the contribution reform in the country.

Our interest lies in viewing Germany's contribution reform above all in terms of how the state produces public goods with high use-value. In particular, public broadcasting service is one of many public goods (Reine Ö ffentliche Güter), and it is an institution in charge of communications among the national community members; of course, in this regard, it is a common consent that the democratic state should not directly control public broadcasting or influence public opinion formation in any propagandistic way. However, we know that for decades ARD, ZDF and Deutschlandradio have ensured their existence and development with the support of the Federal Constitutional Court (Rath, C. 2021). And even in this reform process and the adjunct license fee increase controversy, we can see that the Federal Constitutional Court and the Federal Administrative Court became the patron saints of public broadcasting (ibid.). We can interpret that this is one instance of how a capitalist country, Germany, operates public

[231] The Commission for Determining the Financial Requirements of the Broadcasters (KEF) examines the financial requirements of public service broadcasting in Germany and recommends that the state parliaments set the broadcasting fee, which is then collected by the contribution service of ARD, ZDF and Deutschlandradio.

[232] According to the KEF committee, from 2017 to 2020, other operating income of 2,871.5 million euros was generated. From 2021 to 2024, it is expected to import 3,030.8 million euros. (KEF 22. Bericht 2020, p. 266)

broadcasting.

On the anther hand, above all, what is most noteworthy in this reform process is that the contribution reform of public broadcasting was due in the main to the development of digital technology. These developments are confirmed by a glance at the Interstate Broadcasting Agreement (Rundfunkstaatsvertrag) [233] and various 'broadcast judgments'[234] pertaining thereto. These compromises explain the new role of public broadcasting as a means of providing financial resources in order to ensure a smooth performance of the role of public broadcasting in the now digital age. So, looking at the results of this reform alone, it seems that the original goal has been achieved to some extent. In other words, in the digital era where multimedia is popularized, a certain amount of financial resources has presently been secured to continuously carry out the responsibilities and duties for which public broadcasters have here-to-date been responsible.[235] However, it should also be noted that German public broadcasting actually has had no choice but to compete in the global market in its role as a distinct form of national capital, and this global competition is accordingly heightened by the continuing development of digital technology. This is because public broadcasting has to date existed in the capitalist mode within a capitalist global economic structure.[236]

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[233] The Telemedia Act has been criticized for its vague formula that website operators can be prosecuted if they violate that law by giving their visitors the opportunity to post their own text (e.g., to post comments). For example, some courts ultimately required that all comments from users be verified before posting. This is virtually impossible for large sites that would then have to question all online communities. Konrad Lischka (2007) argues that Germany's "ruthless" judges endanger Web 2.0.

[234] Broadcasting judgment is a trial decision that appeared in the process of contribution reform, but also a judgment to protect public broadcasting in the digital broadcasting market. Here, we can see the clash between private interest and public interest. For example, ARD and the BBC's global program sales are growing significantly. This is an example where the concept of Öffentlichkeit (public sphere) is limited to the national level.

[235] The assigned task of German public broadcasting is specified in the first sentence of Article 11 of Chapter 2 of the Interstate Broadcasting Agreement (Rundfunkstaatsvertrag); The public service broadcasters' assignment is to act as a medium and factor in the process of free individual and public opinion-forming through the production and dissemination of their offers and thereby to meet the democratic, social and cultural needs of society.

[236] Around 1990, a number of public service sectors were privatized. For example, in Germany, Deutsche Telekom, Deutsche Bahn, and Deutsche Post are representative thereof. We can see similar privatization in countries such as the UK and South Korea. This is an example of the commodification, commercialization, and privatization of public goods by the state. Visible is the

And as such, no one is untangled and can stand aside from this global competition. Thus, for the time being, in order for the very influential ARD/ZDF[237] to continue its mission, not only as a broadcasting company, but also as national capital, it has had also to survive in global competition. In this regard, these entities took advantage of being able to have the mere reception of public broadcasting serve as a legal basis for securing financial resources for public broadcasting, based on the sheer receiving capabilities of digital equipment. We have to see that this has definitely been conceived as a scheme for public broadcasters to ignore, trump, by-pass, or accommodate their schemes to the achievements of digital technology development and simultaneously respond to competition in the real world.[238] And above all, the problem remains that it cannot be yet determined decidedly whether the present role of public broadcasting, which has been dominate so far, can still be so performed and maintained in the digital age as has been the case in the past.

Meanwhile, even more state intervention may be required in the future to maintain the competitiveness of public broadcasters in the digital media market where monopoly capital dominates. This is in contradiction to the existing social banner (slogan) that the state should not control or interfere with public broadcasting. For example, we observe that the critical points of Anna Terschueren and Ermano Geuer, raised during this reform process, actually stem from the underlying conflict arising from the commodification of public goods. In other words, when we try more and more to artificially produce and distribute public goods with no value (or just with use-value),

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fact that many public corporations compete in capitalistic ways in the structure of the world economy today.

[237] BLM (Bayerische Landeszentrale für neue Medien) has been examining the influence of media groups on the public opinion market since 2012. According to the latest results (second half of 2020), the top five media groups are ARD (21.4%), Bertelsmann (11,6). %), ZDF (7.4%), Springer (6,7%) and KKR (6.4%) (see Die Medienanstalten (2021). Retrieved from https://www.blm.de/files/pdf2/medienvielfaltsmonitor_2020-ii.pdf).

[238] Europe's largest public broadcasters (ZDF, France Télévisions and RAI) are co-investing in various projects and co-creating contents to compete with global giant IT companies like Netflix (See Zarges, Torsten (2018), "Neue Allianz von ZDF, France Télévisions und RAI, Europas Serien-Antwort auf die Netflix-Euro-Milliarde", in: *dwdl.de*, 04. May 2018. Retrieved from https://www.dwdl.de/magazin/66766/europas_serienantwort_auf_die_netflixeuromilliarde/?utm_source=&utm_medium=&utm_campaign=&utm_term=).

it can conflict with the existing legal and social perceptions that society has created and with which that society is still operating. Of course, these critical views could be resolved to some extent until now in the case of Germany with the Federal Court's rulings, but new critical views on the operation of public broadcasters may continue in the future; and public broadcasters will find themselves relying, or indeed having to, on a stronger patron saint each time. For example, the BBC and ARD limit their broadcasting coverage to their own countries today. And they try to earn additional income by selling broadcasting programs as commodities to other regions. Such a clash can be confirmed in other industries beyond that of the broadcasting field, and will raise questions about the original meaning of public goods (Reine Ö ffentliche Güter) in our society. Because, these series of processes are based upon, and yet susceptible to the continuous, irreversible development of science and technology, and will serve to expose the fact that the products jointly produced by the community can be easily and simply transferred, and at the same time can be used in yet other production activities at no cost.

6.4 Conclusion

In this chapter, we looked at cases where digital news and digital TV contents were commodified through state intervention, and looked at the real world where these commodities are formed and sold at a monopoly price. Through this, we were able to confirm the following points. 1) We have confirmed that although digital information goods that are easily copied and transmitted can be commodified through the intervention of the state, just how the price of these goods is actually formed and maintained in the market is independent of price of production or of its inherent value. In other words, the prices of these commodities are best explained by the Marxist monopoly price. 2) Even if digital information goods were exchanged as commodities, it was virtually impossible to rationally trade them like normal commodities between producers and consumers, in which the commodities have inherent value. For example, the strengthened intellectual property rights in Europe can perhaps force global IT

companies such as Google to sell digital information commodities (e.g., digital news content), but in the market for these commodities, the price of the products is ultimately determined by the dominance of the market players. In other words, even if legal intervention in the digital media environment recognizes the rights of copyright owners to some extent, the exchange standard (value) of digital information commodities is still unclear. Therefore, only monopoly power has the decisive influence on the price of commodities; and the exchange of these commodities proceeds according to the desire and ability of the buyer. In other words, various conflicts appearing in the process of product exchange are smoothed over by monopoly capital, and any incipient state of competition can be changed.[239] 3) When digital information goods are sold as commodities, the burden of these costs is eventually transferred to consumers. Conflicts between re-transmission fees and carriage fees appearing in the broadcasting areas, and usage fees of the search engine Naver and Google could be resolved to some extent by court arbitration. However, the burden of high cost is ultimately borne by the consumer. Furthermore, in the real world where, for example, German public broadcasters produce and sell broadcast programs, the meaning of 'public sphere' (Öffentlichkeit) is again questioned. This is because, while the digital information goods produced by public broadcasting are being sold as commodities in the global market, the mission of public broadcasting cannot be continued without the strong intervention of state agencies in the license fee reform process. Of course, at this juncture we can raise also the question of how the entire community will provide the necessary high costs for the first unit production about which we continue to speak little.

The above facts originate from a study on the value and price of digital information commodities. And this allowed us to explain these commodities as valueless goods and their prices as Marxist monopoly prices. In other words, in the digital media market,

[239] A monopoly does not mean that one firm dominates the entire market. Even if there is only one firm in an industry sector, its capital cannot completely rule out competition. So, monopoly capital does not exclude competition, but restricts competition and changes the mode of competition. See again section 4.3.2 and section 5.3.1 of this dissertation.

these goods become commodities through extra-market intervention, and the prices of these commodities are determined by the desire and ability to pay. These facts are due to the characteristics that digital news and digital TV contents are easily copied and delivered. Present regulations lead to the fact that (digital) media outlets that provide digital information goods as well as companies such as Google and Netflix gain monopoly profits through market dominance. In addition, in a market where there is no objective standard for commodities prices, such as in the digital media market, the role of the state becomes more important, and in this case, rational state arbitration is virtually impossible. This is because the very existence of a state must accommodate the general interest of its own capital accumulation. In other words, state intervention is required more and more by the development of science and technology, but the capitalist state has no choice but to commercialize and privatize the use of public goods such as public broadcasting. This is the fate of the capitalist state, which must produce and sell digital information goods that can be easily copied and transmitted as costly commodities in the market. This case is to be understood in terms of the contradiction and conflict between material productive forces and their relations of production in a digital capitalist society. Perpetual capitalist competition made high labor productivity possible, but in the capitalist economic system, public goods are used here just as limited public good. For example, individual national capitals are placed in global competition. This is the conflict between public goods and private interests as seen in the real world. At this time, as is detailed in mainstream economics, the state does not take the role of consensus and coordination, but rather comes to the fore pro-actively to protect its monopoly capital. In other words, we can identify here the capitalist state described from the Marxist point of view, that is, an instrument serving to preserve the original capitalist mode of production.

7 Concrete Analysis of the Digital Media Environment

So far, we have established that the value and price of digital information commodities can be explained in Marxist labor theory of value; we have defined digital information commodities as valueless objects in line with a Marxist viewpoint, above all, as being due to the fact that the production of the second unit requires no labor. And given the fact that valueless goods can be sold in the market through state intervention in the form of intellectual property rights, the prices of these commodities were consequently correctly labeled as Marxist monopoly prices. This is a problem that neoclassical economics does not deal with in depth, or on occasion, even lightly dismissing it under the rubric of utility, (i.e., the inherent size of value contained in each commodity, when they are exchanged, in terms of the amount of usefulness). In other words, ours is a different approach from the high fixed cost and near-zero marginal cost described in neoclassic economics (utility theory of value), and this is also different from the mainstream media economics which explains the value of immaterial products as if it were treating of heating oil or dealing in categories of journalism (media studies) rather than economics (e.g., Kiefer, M. 2001; Heinrich, J. 2002; Albarran, A. 2002; Picard, R. 2011). On the other hand, our approach is also different from the value assessed by the research of knowledge products as described in the PEM such as that proposed by Fuchs (e.g., Fuchs, C. 2016; Mosco, V. 2017; Sevignani, S. 2016). And because we are enquiring into the size or magnitude of the inherent value contained in individual commodities in the capitalist market in which commodities are exchanged with each other, we chose to employ the theoretical vitality of the Marxist labor theory of value to examine this. And we also looked at how the value and price of digital information commodities can be explained from a Marxist point of view.

In this chapter, we will enlarge our analysis to the overall digital media environment based on the explanation of the value and price of digital information commodities identified in Marxist labor theory of value. The extension of this study to a further analysis of the digital media environment has the following three implications. First, we can confirm that our study accepts Marx’s research method; From abstract to

concrete, and from concrete to abstract. In other words, our research has so far focused on abstract aspects, namely, the value and price of digital information commodities to analyze the concrete digital media environment. Now, we will look in reverse at how the analysis of the value and price of digital information commodities can concretely explain the digital media environment. Second, our ultimate research objective is in the digital media environment, and once arrived therein to reaffirm how we will explain the changing and developing digital media environment from a Marxist point of view. At this time, the digital media environment we are talking about is a digital market in which digital information commodities are produced and traded that do not require any additional labor and cost for second unit production. Third, this study will illustrate the fact that it presents research methods and results well differentiated from mainstream media economics and the political economy of media. Therefore, our research, following a set procedure, needs to be expanded to explain in this chapter the concrete digital media environment based on the analysis of digital information commodities, and summed up once again in the knowledge: reproduced digital information goods are valueless things and the price of these commodities is a Marxist monopoly price.

In this chapter, we will examine the digital media environment based on the fact that digital information commodities are valueless goods and, nevertheless, that these commodities are formed and maintained at Marxist monopoly prices in the real world. Our analysis of the digital media environment will look at three aspects: (1) Analysis of digital media policy, (2) Analysis of digital journalism, (3) Analysis of the digital media industry.

7.1 Analysis of digital media policy

In this section, we will look at the digital media policies in force today and suggest how to understand and explain digital media policies starting from the fact that digital information commodities are valueless goods. To this end, we especially will pay great attention to efforts to find representative regulatory policies in the digital news media market, one that is changing as the media environment is digitized. However, our

interest is not to criticize these regulatory policies or to suggest definitive new policies, but rather to look at how such changes and developments are being responded to in existing media economics or in media politics. In other words, until now, this vast majority has been trying to sell valueless goods as commodities, without properly seeing as an alternative the benefit potential of advances in digital technology.

7.1.1 About digital news media policy

First, as is generally known, the fields of academia that comprise media and communication studies today are divided into media economics and media politics.[240] Meanwhile, while media economics and media politics are divided, at the same time they share to a large extent research contents, with each, however, emphasizing its own research object within the greater media and communication studies (Publizistik- und Kommunikationswissenschaft). For example, media economics mainly studies economic activities (production, consumption) in the media field based on the basic theories and methodologies of economics; while media politics investigates political issues in these same related fields (media and communication) (see Beck, K. 2007, pp. 205-222; see also Kiefer, M. 2001, pp. 35-38). In this regard, the main research subjects of media politics are media companies and states, not forgetting consumers and citizens at the same time; and the main research interests involved are focused on democracy, diversity, ownership, and formation of public opinion, etc. Therefore, in the digital society, media politics is concerned with such topics as freedom of the press, media pluralism, and the quality and diversity of digital news. The aim of this academic interest is to reconcile the contradiction between the commercial orientation of a media company (private interests, unburdened business license) and the important public mission in which the media service-function arises (media freedom) (see Beck, K. 2007, p. 216). We can see representational examples in the outgrowth of media regulation policies, that is, for example, relating to covering media ownership or control issues,

[240] Around Marshall's time, neoclassical economists changed the name of the discipline from the traditional 'political economy' to 'economics' (Chang, H. 2014, p. 87).

market entry and operation of media outlets analysis, and regulation of content. And the independence or reinforcement of politics via public broadcasting has been emphasized in concepts such as democracy, transparency, and diversity of public opinion.

In this respect, speaking now in terms of Marxist economics, that is, the approach attempting to explain capitalist society starting from the analysis of commodities, the problems addressed by media and communication studies are forthwith presented from a different perspective. The other perspective we are talking about here does not mean a new conceptual identification of democracy, diversity, and media property, but rather a problem that has not been addressed in media politics until now, namely, how to display the surroundings so as to reformulate the problem. For example, we have confirmed that digital information goods, once produced, can be reproduced without any cost or labor. In this regard, we, of course, recognize the benefits of digital technology development that can produce and distribute valueless goods as a high level of productivity, but other considerations follow: how to produce and distribute digital information goods that can be shared free of charge, for example. As we saw earlier, the universalization of digital technology enables the production of goods that no longer require any labor. This is the high level of productivity achieved by competition in capitalist societies. In other words, it is necessary to discuss how the social community can (and does) organize the production of digital information goods, which are expensive to produce in the first unit, but not necessarily in succeeding ones. This approach does not start with how to effectively allocate limited resources. In other words, if neoclassical economists start with the problem of distribution, Marxist economics starts with the analysis of the capitalist mode of production. In that sense, this approach, in highlighted contrast to its opposite, does not separate the interdependence of economic and political systems as is the tendency when the academic areas are bifurcated (media economics versus media politics). [241]

[241] In other words, Marxist political economy does not divide the fields of study between economics and politics or sociology. However, media communication studies at present do distinguish between media economics and media politics. Strictly speaking, however, media politics can be seen to be

Furthermore, the interrelationship itself between economic and social systems is expanded and connected as a subject of study. The interconnected subjects of such a study are unfamiliar to the existing media and communication studies. This is because existing media and communication studies have mainly tried to rationalize the distribution (namely allocation) of products produced by private companies (Kiefer, M. 2001, p. 36).[242] Thus, they are not outfitted with an analysis able to recognize the production of goods that are no longer able to be exchanged as has been the case in past days due to their potential for high productivity. As a result, they tried to create a manipulated environment and conditions in which even valueless goods could be traded in the market. Of course, these research tendencies are "derived from ideas that arise and develop spontaneously in everyday practice" (Heinrich, M. 2001, p. 32). According to Marx, "People in bourgeois society inhabit a bewitched, distorted and upside-down world" (Marx, K. *Capital* Vol. 3, p. 969; Heinrich, M. 2001, p. 32). He points out that this "religion of everyday life" is not only the basis of everyday consciousness, but also the background for certain categories of political economy (Heinrich, M. 2001, p. 32). In other words, media and communications studies have so far paid little attention to the underlying basic categories of the capitalist economy. A typical example is that they did not forthrightly explain what the inherent value of digital information commodities is, and how the prices of these products, traded in a competitive market, were formed. In other words, the contradictions and conflicts between the high productive forces and capitalist relations of production and distribution can explode into chronic overproduction and crisis. So, we are not adequately able to get a grip on the fact that, armed solely with their narrower analysis, the contradiction and conflict between the high productive forces and the capitalist relations of production and distribution may lead to chronic overproduction and crisis

based on an economic analysis of how to effectively distribute limited goods.

[242] For Jürgen Heinrich (2002) like Alan Albarran (2002) or Robert Picard (2011), the central question of media economics is the classic problem for economists in general: the allocation of scarce resources, i.e. the distribution of economically scarce resources to alternative uses in the media system (Kiefer, M. 2007, p. 36). However, with the generalization of digital technology, goods produced once are easily copied and transmitted. In other words, it can be copied infinitely.

(Chae, M. 2004a, p. 258).[243]

Accepting this point, we defined digital information goods as valueless things and described the prices of these goods as Marxist monopoly prices. And based on this value and price analysis, we describe the powerful state intervention in the digital media industry as follows: First, strong state intervention in the digital media industry appears under the guise of media policy. As discussed above, the state's intervention in commodifying goods, not commodities, appears first in a legalistic form. Intellectual property rights are here representational. On the other hand, there is an alternate form in which a state agency directly sells digital information goods. This includes trust sales such as News Korea. These examples are also confirmed in the traditional media industry. For example, until now, many countries have actively intervened in such markets in industries such as the publishing, film, cable TV, music, and telecommunications industry, and thereby have helped to produce and sell goods as commodities. Such interventions are recently confirmed in the gaming industry. However, as a result, oftentimes assorted (media) giants control all of these industries. These state interventions are also confirmed in terms of violations of media freedom. Because what the state seems to want to protect is capital of the media, not freedom of the media. So, media freedom and state intervention tend to conflict with each other.

Now at present, the centralization and concentration of capital is also visible in the news media industry. Hundreds of newspaper companies have been acquired and/or merged, leaving only a handful of newspaper companies; and news media outlets are even being acquired and merged with large Internet companies.[244] Therefore, insisting on merely an 'ex post facto' regulation of 30% audience share is ultimately giving up

[243] These contradictions and conflicts appear, socially and politically, as class struggles that intensify in various forms such as mass unemployment, irregular and underemployment, widespread poverty, frequent and intense strike struggles, imperialist aggression wars, and national and international popular resistance (Chae, M. 2004a, p. 259).

[244] The 10 largest newspapers in Germany control 61.6% of the total newspaper market (Röper, H. 2018, p 216).

on diversity protection.[245] This result is not due just to an outdated thinking that sticks to the 1/3 rule in a changing media environment. Nor it is not because antitrust laws are not working properly. In other words, the laws of capitalist competition cannot be bettered merely with a few additional legal provisions. In this respect, we can explain state intervention as participation into a fundamentally accelerating market competition. The structure of reproducing and selling digital information goods as commodities is, in the end, the intervention of the capitalist state to maintain the capitalist mode of production. So, even should a strong antitrust law work admirably well, the future of the news media industry looks likely to eventually be the same as the music industry or the film industry. In other words, the entire pie in the news media market will be seen to be divided among three or four companies. This is because mainstream media economics introduces regulatory policies to prevent monopoly only after the rise of oligopoly. In this respect, the pluralism of digital news media and the diversity of opinions remain as mere political slogans. We have to rethink as to why, on the one hand, the digital environment can be the worst moment for some news media, but, on the other hand, can be the best atmosphere today for other news media such as The New York Times. If media politics has formerly been thinking about how to sell valueless goods as commodities, what media policy should be thinking about in this present digital age is how to effectively produce and distribute valueless goods. For example, at issue should be the structure of a now digital market in which valueless goods are exchanged, and one given and directed to the characteristics of digital products; and one aware that these goods are on sale at monopoly prices. And then perhaps thereafter we can delve deeper into what media politics has dealt with so far: democracy, diversity, public sphere, media freedom, and the like. For example, the criterion for determining the dominance of public opinion has relied heavily on a program's viewer-share up until now.[246] However, the monopoly profit rate of a media

[245] The 30% standard was introduced in Germany by the Michel Kommission and the Gunther Kommission in the 1960s. They have traditionally viewed Germany's political spectrum as divided into conservatives, liberals, and progress, and the diversity that can represent these three forces is one-third (Shim, Y. 2010, pp. 50-56).

[246] For example, the German Kommission zur Ermittlung der Konzentration im Medienbereich (KEK) works to ensure diversity of opinion.

company can also be a criterion for determining the dominance of public opinion.

7.1.2 About intellectual property rights

Digital technology is the best reproduction and distribution technology ever developed by mankind. The way digital media outlets commodify valueless goods are realized through various methods other than state intervention. For example, cable TV (or Pay TV) is able to be excluded to some extent through the set-top box. Today, such technical blocking is carried out through methods such as encryption, integrated authentication, and paywall, etc. Just as the digital environment requires stronger and more diverse state intervention, so here various supportive technical barriers are required. Without this intervention, such cannot be transformed into a commodity. In this respect, who will own the digital information goods is very important.[247] If the right of ownership is not recognized, it generally becomes impossible to sell anything as a commodity. Therefore, it is necessary to think about who, and for whom legal intervention is needed to maintain the capitalist structure of production. As mentioned above, media scholars such as Ronald Bettig have pointed out that this legal intervention on behalf of intellectual property rights serves mostly to strengthen the concentration and centralization of the media industry in capitalism, especially under the aspect of research. Unfortunately, however, his research did not begin with the analysis of the value of commodities and, as a result, failed to explain the capitalist social structure in which media products were commodified by intellectual property rights.[248] In other words, his historical research on intellectual property rights was not a study to understand the social structure of capitalism, but a study of certain individual events in history. That is why, despite historical and philosophical analyzes of

[247] Everyone is well aware that the new data economy has endless potential. However, most people want, first of all, to be clear who owns the data (e.g., Banterle, F. 2019, pp. 199-225).

[248] The notion that one must know history in order to understand the present has a certain justification when applied to the history of events, but not for the structural history of a society. Rather, the opposite is the case: to examine the constitution of a particular social and economic structure, one has to be already familiar with the completed structure. Only then will one know what to look for in history (Heinrich, M. 2005, p. 21).

intellectual property rights, the erroneous claims asserting that the value of knowledge and information are the price and value of today's digital information commodities have become widespread. In counter-distinction to this argument, we focused first on the issue of the value and price of digital information commodities, and based on this, we exhibited the role of intellectual property rights in the process of commodification of valueless goods and the deeper grounds for its indispensable necessity. In this respect, while Bettig's description of intellectual property remains an important foundation for understanding the reality in which digital information goods are rapidly increasing with the development of artificial intelligence and automation technology, it remains, however, an incomplete one.

In other words, we need to think about the meaning of intellectual property rights in modern capitalism, where market domination of monopoly capital is prevalent. First of all, we see the development of science and technology primarily as the development of the productive forces of capitalist society. Ironically however, as a result, digital technology and artificial intelligence automation technology have reached a stage where it is no longer possible to maintain capitalist relations of production. In this respect, parallel with this development of capitalism, the scope of application of intellectual property rights is continuously expanding. For example, in the Corona era, the development of a corona vaccine required a huge cost for the first unit production, and the vaccine once produced can be easily and simply reproduced. Recently, we could catch a glimpse of the production and distribution of vaccine development in a non-capitalist way.[249] Of course, at the same time, we were able to have insisted to us the case for producing and selling these vaccines in a capitalist way.[250] Indeed, efforts to strengthen intellectual property rights, i.e. to commodify goods through state

[249] Cuba has also waived intellectual property rights for vaccines and has announced plans to export or donate a number of vaccines at low prices.

[250] Conversely, the United States, Germany and the United Kingdom have been able to directly identify commodification strategies for developing and selling vaccines. So, there was a critical point of vaccine capitalism in the process of vaccine development and sales. Nevertheless, vaccines developed in these countries were sold as commodities, and legal protection for vaccines was further strengthened in the course of vaccine distribution.

intervention, have been increasingly applied to human genes and animals in recent years (Kang, S, 2009, p. 294; Kang, N, 2002, p. 45). This increase in the scope of application of intellectual property rights means that the research results of competitors are more easily imitated due to the on-going development of productivity. Furthermore, it means that more and more products are produced as goods that are no longer sold as genuine commodities on the market (see Kassabov, O., 2021).

In this regard, we go on to consider that particular commodification of goods with high use-value which we call ‘news’. News, once produced, is easily copied or transmitted. Because of its high use-value, many people are willing to pay generous sums to get the news. However, the structure of the publishing market which had been maintained for hundreds of years is now being radically changed by digital technology. We should like to start with an analysis of the value and price of digital information goods in order to understand the structure of the changing news market. Various legal interventions, that are continually being strengthened precisely in the digital news market, attempt, via the structured interventions of the capitalist state, to artificially uphold goods that cannot be originally sold as commodities. This approach has so far maintained and sustained the capitalist market, and no one has raised too many questions or concerns. However, with the development of digital technology, and the fact that reproduction does not require any labor, we are provided with an additional insight into the capitalist mode of production so far. For example, one can say, the purpose of digging a well is not first and foremost to sell for a certain cash price the water that comes out of it; more to the point, we dig a well in order to drink its water communally. The amount of labor required to dig the well is in fact insignificant compared to the benefit of the amount of water that comes out of it. Following the metaphor, past media politics, when one thinks about it, looks more like they have so far explored and developed policies to sell ‘their’ water from a well. But now once you understand the benefits of digital technology, you need to think about how to dig a drinking well for the benefit of all. The ‘benefits for all’ here transcend national and ethnic boundaries. This understanding brings us back to see the reality, why we are paying so high a fee for digital communication despite the highly developed labor productivity of digital technology.

For example, open-source software (OSS) is computer software where the copyright holder grants users the rights to use, study, change, and distribute the software and its source code to anyone and for any purpose. Open software is a representative example of a high productivity community producing and distributing public goods. We can already see certain results such as open software around us. Even without any economic compensation, the production and distribution of digital codes that can be used by others using high productivity (digital technology) is expanding. So we should be proposing a way to publicly expand the production and distribution of open source for the benefit of the community. Furthermore, the state should seek policies that organize the production of public goods rather than interventions for those that exclusively own them.

7.2 Analysis of digital journalism

In this section, we will look at the changing structure of journalism in the digital media environment. For example, free news as well as paid news are both increasing in the current digital media environment. In this situation, news media outlets are emphasizing innovation and setting up new payment strategies. At the present, professional journalism or quality journalism is still emphasized, but with the development of science and technology, cases in which computers automatically produce and sell news are also increasing. We want to look at these changing trends in journalism. As our starting point, our view begins with the salient fact that digital information goods are, above all, valueless goods with no value. At this point, we would like to examine why professional journalism or quality journalism is still emphasized today. And as the next step, our analysis of journalism intends to examine just how those ‘news goods’, now at the crossroads of computers and journalism, can be produced and sold, which fact normally implies only goods which possess high use-value; and go on from there to propose the possibility and expandability of alternative news media from a Marxist point of view.

7.2.1 About quality journalism

The word ‘quality journalism’ is probably a common term used to describe commercial mass communication (Krone, J. 2010). This quality is supposedly guaranteed by the awarding, for example, of the “Journalist Award” and its attendant lavish celebration (Lünenborg, M. 2012). However, it does not necessarily follow that such quality journalism guarantees the public value of a society, namely, democracy. Of course, all this holds out the alure of elevated achievement, but only to a limited extent. For example, experiences of, or even reporting of inequality, exploitation and oppression do not necessarily lead to a fundamental critique of capitalism itself. Strictly speaking, in Marxist economics, quality journalism refers to journalism just with high use-value. Indeed, high-quality journalism or professional journalism is readily paid for in the real world. However, the amount of the use-value cannot determine the inherent price of journalism. Nevertheless, in the market characterized by competition, it seems like the quality of journalism is adjudicated and traded in terms of the price of journalism. In this regard, we must, however, carefully interpret the media market where the use-value of journalism is traded at its inherent price. Because, we have already seen clearly that a high use-value of a commodity cannot always determine the price; and, moreover, that conflict often arises in the exchange process because there is no standard, (strictly speaking, ‘value’) regulating price fluctuation.

We see this, moreover, as a characteristic of the capitalist mode of trading in the digital media market. In other words, the daily newspaper is a news commodity produced in the form of journalism and can be sold at a price higher than its inherent value (from the viewpoint of Marxist labor theory of value). So, quality journalism is used to evaluate the quality of news, and tries to notionally present the criteria for good and bad articles. To this end, they develop their own indices for evaluation, and evaluate individual news media outlets thereby.[251] However, just because there is a category

[251] The “project for excellence in journalism” in the United States (Mitchell, A. 2013) is a representative example, and there is a ‘good journalism research society’ in South Korea (Jang, S. 2018).

‘free news’ - and free is certainly not scalable like price - this need not necessarily imply low-quality journalism or non-professional journalism. Also, not being selected for a project for excellence in journalism does not necessarily mean poor journalism or low-quality reporting. A high use-value for a good can just as easily mean merely a high degree of need just for the individual recipient. In other words, high use-value does not necessarily mean high use-value for all users, nor for every individual. The degree of need is a very subjective matter, and it is not possible to artificially select or evaluate which goods are necessary or unnecessary for an individual or a society. This is also a necessary factor regarding diversity and the public sphere. In this regard, the recent emphasis on quality journalism may just be due to the fact that the business model of media companies, one that had worked before, is no longer operable or relevant, or perhaps even possible, with the further implication that it may constitute simply a quickly formulated commodification strategy to sell at a price that is irrelevant to the inherent value.

Meanwhile, in these days when quality journalism is emphasized, we need to critically look at the structure of the more mundane ‘commercial’ journalism that only produces content which makes money. News sold for a subscription fee is thoroughly interested in consumer desires and the ability to pay. News media can now technologically look to see who is reading their articles and just what consumers are actually interested in, as well as how much money they have. Therefore, news media outlets naturally reorganize their organization accordingly; integrating newsrooms to produce and sell news. This innovative form of corporate management also has for them the allure that it reduces editorial and journalistic staff, and favors those who are proficient in computer programming.[252] In this process of so-called innovation, many people are instead even expressing concern about a decline in quality journalism and speaking about a crisis of journalism. However, we ourselves can understand this crisis as a change in the structure of communication brought about by digital technology.

[252] The distinction between editing and reporting disappears, and you can have a full working life by learning a new programming language and by ‘shooting’ and reporting solely by yourself (see Kang, A. 2018).

Journalists alone are no longer the only ones to provide relevant topics for public discussion. Citizens who are not satisfied with legacy media employ other avenues such as individual podcasts, Internet broadcasting channels, and blogs, and are flocking to the Internet. The influence of the media, that is, newspapers, broadcasting, and radio, which had previously determined and presented the agenda so far, is changing in the now mobile-equipped society. In this changing structure, above all, it is the inherent value and price of journalism that is being exposed. In other words, the profits of the legacy media that have been unilaterally obtained so far, now, given the digital market, are in need of a stronger influence (monopoly power). The media market is an area where valueless goods can no longer be sold as commodities without corporate (or state) influence. This is because the price of digital news commodities is still determined by the subscriber's desire and ability to purchase. In this respect, today's changing communication structure is ironically causing information poverty amidst an abundance of information. That is, the ability to acquire information is often determined according to the size of wealth or, respectively, to the degree of poverty. We can explain this problem via reference to the capitalist mode of production in regard to commodified valueless goods. In a now digital capitalist society, quality journalism is the competition of capital to obtain more profits through higher use-value.

7.2.2 About computational Journalism

The most representative attention-getter of the disruptive changing structure of digital journalism is the replacement of human work through computers. The meeting and interfacing of computers and journalism is called 'Computational Journalism'[253] in the media industry. Computational journalism can be defined as the application of computation and digital progress to the activities of journalism such as information gathering, organization, sense-making, communication and dissemination of news information, while upholding values of journalism such as accuracy and verifiability

[253] In this dissertation, the term of computational journalism encompasses data journalism, artificial intelligence journalism, and robot journalism.

(Diakopoulos, 2007).[254] The processes of collecting and analyzing information in real time, creating and editing news contents, and even automatic distributing are all carried out on a computer. In many cases, computational journalism has already been enacted (Beckett, C. 2019). Currently, numerous news media outlets produce the commodities they need with code (or information) that anyone can easily obtain. We are already aware today of cases in which news is produced and distributed through 'open source' in the field of journalism. The Washington Post, for example, established the Computational Politics Journalism Institute in conjunction with Northwestern University in the United States to collect, analyze, and report data on various elections held across the United States.[255] Vox Media asked readers for their opinions through the Coral project,[256] and created new articles using their comments. Radmesser, designed and initiated by the German newspaper, 'Der Tagesspiegel', is a case of actively utilizing open source.[257] And Germany's 'Der Spiegel' used bots[258] to identify discrimination against foreigners in real estate rentals.[259] All of the above examples are computational journalism in which computers and journalism have largely merged to become one. The cases of writing and distributing news through open

[254] The reason why we look at computational journalism in the paper is to reiterate that, like open source, there is no labor involved. A product that does not involve any labor finds expression in the example of computational journalism in an automated manner. From a Marxist perspective, the products of computational journalism are valueless thing and are described as mere goods.

[255] In 2013, Amazon acquired the Washington Post which was a 130-year-old newspaper. And the Washington Post's elections engineering team established a computational political journalism R&D lab (see Wash Post PR Blog. Retrieved from https://www.washingtonpost.com/pr/2019/07/24/washington-post-establishes-computational-political-journalism-rd-lab-augment-its-campaign-coverage/).

[256] Coral brings journalists and the communities they serve closer together through open-source tools and strategies. Retrieved from https://coralproject.net/

[257] Der Tagesspigel distributed sensors to citizens to ensure safe bike paths in the city of Berlin. And they identified which roads had a high risk of collision between bicycles and cars. The data collected in this way tells which areas have the most bicycle accidents and which roads need to be repaired. In other words, sensors distributed to citizens produced data in the form of crowdsourcing, and media companies then wrote news articles based on the data. Der Tagespiegel had opened-sourced how to make a sensor and even the code to analyze the data collected through the sensor. See more on the website of Tagespiegel. Retrieved from https://interaktiv.tagesspiegel.de/radmesser/index.html.

[258] Bot is application software that executes automated tasks (scripts) on the Internet.

[259] This is an example of AI used in terms of data journalism. See more about the result of the Spiegel action. Retrieved from https://interaktiv.br.de/hanna-und-ismail/

source are increasing not only in the United States and Germany, but also in South Korea. News media outlets are collecting and organizing various information in more business processes. The ease of collecting data through computers is a benefit of technological advancement. Of course, creating the first code takes labor and cost. However, a characteristic of digital technology is that once-created, code can be changed and organized into yet another data version. For those who produce the code, the intention most likely was to use the code in that form, not to sell that code. With the result that, let it be said, with free code, and a laissez faire attitude toward that code, one can create new results over and over again.

In some respects, intellectual property rights seem to be less effective in the arena of the usage of digital information and codes than in other areas. However, it is still possible for one to establish rights in the code and ask for a certain price. In other words, it is very much for sale as a commodity. In this way, the code, which has no value, becomes a commodity in the capitalist way through various contrived, artificial methods. These examples can be confirmed today in the big news media outlets and in the giant IT companies. In other words, they are creating news commodities by reprocessing code (information) that has no value. In such cases, we can see the following facts. First, with the development of science and technology, information (code) that can be used for free has increased, and these benefits are now emerging amidst the question as to how to make use of them. Second, giant news media entities who want to earn yet additional profits are artificially marking and upgrading their rights in reprocessing (reprocessed) information (code) out of information (code) actually obtained by them for free. We know, for example without doubt, that they are demanding stronger intellectual property rights in order to sell their commodities. However, in the process of producing commodities, they are now more and more using the obtained information obtained for free. These changes are feasible depending on the size of the capital. It is not an effort to realize better ‘quality’ journalism, it is a simple investment amidst competition.

7.2.3 About alternative journalism

If the digital information goods produced once are subsequently delivered at no cost, it cannot be ruled out that more innovation and public welfare can be increased for the whole society. This movement can already be seen in the web encyclopedia Wikipedia, the Linux operating system, the software system Python,[260] and the computer language R,[261] etc. These are used today as public goods, and they have much in common in the way they all operate. 1) The purpose of production is use, not sale; Therefore, they produce goods, not commodities. 2) In this sense, production activity is not for the purpose of profit; production activity is not carried out to earn a living. The guarantee of livelihood is replaced and substituted for by other altruistic aspects. 3) Their production activities as well as their outcomes are politically and economically independent. Consumption of goods leads to free use by those who need them and leads to the production of other goods. 4) It nevertheless still retains the characteristics of digital information goods, namely non-excludable and non-rivalrous; these characteristics of digital information goods are productively used in uninhibited production and unrestrained distribution for all. 5) Product development is not initiated from capitalism competition; the driving force of creative activity comes from individual interest and various other society-benefiting motivations.

We can also well imagine alternative journalism based on these laudable characteristics. The 'alternative' here means that digital information goods are produced and delivered in another mode of production other than the capitalist mode. Of course, the problem of the creators' livelihood must be solved, and the huge cost for the first unit production must be guaranteed to be reimbursed.[262] Only then can alternative journalism be

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[260] Python has an open, community-based development model maintained by the non-profit Python Software Foundation.

[261] R is a programming language, software environment and freeware for statistical calculations and graphics. It was initiated by Robert Gentleman and Ross Ihaka from the University of Auckland, New Zealand, and is now being developed by the R Core team. R is widely used in statistical software development and data analysis, and it is widely used in statistical software development due to its easy package development.

[262] The dominant social production in modern society is still the capitalist mode of production.

feasible. But even in this sense, alternative journalism is neither strictly a moral matter nor an idealistic model of an unrealistic utopian society. This is because recent cases of providing digital information goods as goods rather than as commodities have indeed been confirmed also in journalism. An example is the cooperative news media.[263] They applied the particular mode in which a community operates onto the realm of journalism. Thereby, production is made jointly, and distribution is made free of charge. However, this movement is, upon reflection, merely the application of the socialist mode of production that operates within a capitalist society. In other words, since the production mode of society as a whole is still capitalist, alternative journalism will hardly be realized just because individual workplaces operate in a socialist manner. Because, in a situation where the dominant mode of production in society as a whole is capitalist, journalism on its own part by itself cannot be non-capitalist. For example, when media companies shifted from a family-oriented management structure to a regulation format composed of minority shareholders, better regulation of influence on public opinion was possible than was before (Shim, Y. 2010).[264] And media companies listed on the stock market are now turning to a sponsorship model. We hold that this structural change is a change in the mode of production stemming from the development of science and technology.

In this regard, it is clear that we are living in an era in which the mode of digital information goods production and its subsequent distribution are changing in a society now armed with a high productivity called digital technology. Furthermore, the means by which anyone can socially express and communicate their opinions have become common, communal, and commonplace. So, citizen journalism was born, and an

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However, Marxist economics explains that capitalism is by no means a trans historical and natural social and economic system. It is a historical, transitional mode of production. In other words, it is a historical social system initially formed by the dissolution of the feudal society (Chae, M. 2015, p. 24).

[263] For example, representative cooperative news media outlets include, for example, the taz in Germany and the Pressian in South Korea.

[264] In an interview with Professor Otfried Jarren, he said “It is possible to regulate public opinion only by controlling stock fluctuations and controlling owners” (Shim, Y 2010, p. 185).

environment was created to become a writer or a journalist without the help of a publisher. In other words, the alternative journalism we are talking about stems from the intrinsic characteristics of digital information goods, and at the same time is based on the ongoing development of digital technologies prevalent and underway today.[265] In fact, alternative journalism (or media) refers to goods that are jointly produced by the community; and, moreover, to the fact that anyone can easily use the goods once produced, that is to say, truly 'public' goods. Alternative journalism could create new public spheres [266] that hitherto have not been organized by commercial mass communication. And we will be able to discuss experiences of inequality, exploitation and oppression here more in depth.

7.3 Analysis of digital media industry

Next, our analysis now focuses on the digital media industry. At this time, the digital media industry refers to that field where once produced digital information commodities can be copied (reproduced, transferred) and can be sold easily and simply; e.g. software, gaming, music and digital news industries, etc. In this section, we will look at where the profits of digital media companies that produce and sell digital information commodities come from. That is, we will look at how and where the high

[265] There are various definitions of "alternative media". John Downing (2001), for example, defines "radical alternative media" as media "that express an alternative vision to hegemonic policies, priorities, and perspectives". And Christian Fuchs (2010) also argues that alternative media must have four distinct properties; The first being that the audience of these media must be involved in the creation of what is put out in alternative media. The second is that it has to be different from the mainstream. The third is that it should create a perspective different from that of the state and major corporations. The fourth property is that alternative media must "establish different types of relationships with the market and/or with the state".

[266] The Theory of Communicative Action (Theorie des kommunikativen Handelns) by Jürgen Habermas (1981) has been well-received by the public. The concept of communicative action means equal interaction of subjects and is presented as a rationality that pursues mutual understanding and communication. Therefore, Habermas's theory has a democratic character. In this regard, media and communication studies are very interested in Habermas' theory. However, Habermas emphasizes the successful intervention of the state and the acquisition of legitimacy through democratic procedures. In other words, Habermas's theory sees democracy as an emphasis on behavior adjustment (see Moon, Y, 2018, pp. 554-570). However, we attempt to present a study of the public sphere and democracy through the analysis that digital information commodities are valueless goods.

profits of digital media companies that produce and sell valueless goods emerge. This review underscores the real world of the digital media industry in the fact that these companies earn monopoly profits.

Simultaneously, we do not ignore that a driving force of today's rapidly changing and developing digital media industry results from capitalist competition. In other words, the advancement of science and technology is the result of capital investment to achieve higher profits. However, the development of science and technology has unwittingly and probably inescapably engendered economic conditions now possible to produce valueless goods. This eventually expands into a mode of conflict within capitalist production, and leads to a structure in which the sale of valueless goods is impossible without the state's intervention. This example can be seen in the digital media industry.

7.3.1 About surplus value

Mainstream economics no longer asks about the value of products, given that everything sold in the market makes a profit. However, mainstream economists such as J. M. Keynes also pointed out the problems brought about by financial speculation as early as the 1930s, criticizing financial capital as a gamble and its profits as a transfer of profits from other sources. We would like to present this fact more clearly in the Marxist labor theory of value. Marx saw finance as a catalyst that converts money capital into productive capital (Keynes, 1932). Income generated in the financial sector comes from the value created by others. Finance does not add value in itself, but takes a share of the surplus value created in the production process (Mazzucato).

As mentioned earlier, in Marxist economics, a commodity must include both use-value and value. Therefore, not all products that satisfy human desires become indisputably commodities.[267] In our present sense, reproduced digital information commodities are

[267] A thing can be useful, and a product of human labor, without being a commodity. He who satisfies his own need with the product of his own labor admittedly creates use-values, but not commodities. In order to produce the latter (commodities), he must not only produce use-values, but use-values

goods that contain no value. In other words, these digital information commodities did not include any surplus labor of workers. Therefore, the market price of digital information commodities was completely independent of the inherent value or price of production required to produce these commodities. In other words, the market price of digital information commodities is the price formed by the competition of the marketplace.[268] This fact can be extracted and distinguished when analyzing the inherent value and price of digital information commodities. On top of this it comes out that, in Marxist economics, digital information commodities can be defined as a valueless object that produces no (surplus) value, that is, in other words, a good. Nevertheless, digital information goods are being traded as profit engendering commodities in the (capitalist) market through various artificial mechanisms and methods. If we agree with this position, we arrive at the following problem: When digital information goods are copied, the companies that reproduce them produce no surplus value. This conclusion is also confirmed by those Marxist economists who say that "robots produce no surplus value".[269] In other words, for economists basing their comments on the Marxist labor theory of value, the profits generated in the process of producing commodities in a capitalist society are due only to the surplus labor of workers. Then, however, where do the high profits of media companies that produce digital information goods come from?[270]

In this matter, we need to focus on the fact that the price of digital information

for others, social use-values (Marx, 1990, p. 131; see again Chapter 2, Section 4.1 of this dissertation).

[268] The assertion that the selling price of a commodity is the price formed by competition in the market is also mentioned in neoclassical economics. In other words, neoclassical economics also suggests the concept of a monopoly price. However, the difference between their argument and the monopoly price mentioned in Marxist economics is the explanation of monopoly profit. And although the price of a commodity does not seem to be sold according to its value, in fact, the price of production is still at the center of the fluctuation of the price (see again Chapter 2, Section 4.3 of this dissertation).

[269] Only unpaid human labor produces profits (Goldstein, F. 2008, p. 83; see also Marcy, Sam 1986, p.67).

[270] To this question, the PEM scholars like Christian Fuchs (2015b) explain that the profits of digital media companies come from knowledge and information (see pp.26-41; see also Chapter 3, Section 1 of this paper).

commodities is a monopoly price. In the real world, where digital information goods are easily reproduced, if the profit of a digital media company is higher than the price of production (cost price + average profit), it receives the Marxist categorization of monopoly profit. As discussed earlier, in Marxist monopoly price theory, the source of monopoly profit is the transfer of surplus value produced by the whole society from yet other industry sectors (if perhaps going unrecognized).[271]

Accepting this point, we can explain that the profits of digital media companies that produce and sell digital information goods effect the transfer to their own industries of surplus value produced by other industries.[272] For example, companies such as The New York Times, Google, Netflix, and YouTube are making high profits simply by offering digital information goods under terms of exclusivity. Here monopoly is not defined as a condition in which a few companies dominate an industry sector (an oligarchy) or if one dominates (a monopoly), but specifically rather refers to the acquisition of a higher profit rate than the average rate.[273] In particular, if the profits which they earn are greater than the price of production administered to provide these goods, this constitutes a monopoly profit. Above all, such an explanation is suggested in the characteristic that no additional labor or cost is required to manage and provide digital information goods once produced. In other words, unlike the position of seeing the source of digital capitalism's profit as knowledge or information, we can interpret it more properly as the monopoly profit of monopoly capital.

Meanwhile, in the digital media industry, the digital media environment called 'Computational' journalism is becoming more and more real and pervasive. As a result,

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[271] See again Chapter 5, Section 3 of this dissertation.

[272] Of course, the labor that produces the first units of digital information commodities produces surplus value. In addition, these companies employ labor in various fields. For example, service, distribution, administration, system management, etc. Thus, the labor employed in these fields become productive labor for the companies. However, in this section we state that these industries produce no value, in that no labor is required to produce the copied digital information commodities themselves.

[273] For Marx, monopoly is the acquisition of a profit by a certain capital or firm at a rate that is structurally higher than the average rate of profit obtained by other capitals.

it is now possible, when looked at from a certain perspective, to produce goods upon which almost no human labor at all has been exercised. In Marxist economics, these products have only use-values, and contain no value. A product that has no value becomes a valueless thing, namely, goods. And, advancing this thought, the digital media industry, which is overflowing with valueless things, and simultaneously seeking monopoly profits, becomes, as such, an industry that filches the surplus value produced by society as a whole. In this vein, mechanisms by which a variety of fictitious capital such as stocks and bonds produce high profits without producing any surplus value can also be glaringly found in the digital media industry as presently constituted.

7.3.2 About competition and state intervention

In Marxist economics, the constant accumulation of capital is an unending movement to gain more profits (see Heinrich, M. 2005, p. 15)[274]. And furthermore, individual capitalists are constantly forced to pursue an unstoppable revenue-generating movement due to increased competition with other capitalists. If accumulation does not continue, and production facilities fail to continue to modernize, they face the threat of being overwhelmed by competitors who can produce cheaper or can deliver better products. Therefore, excessive profit-seeking in capitalism is not caused by the lack of morality, as supposed, of the individual capitalist, but rather embodies an in-built systematic necessity for surviving as a capitalist (ibid.).

In light of this explanation, we can pass in review the introduction of new technologies

[274] "The fact that earnings do not primarily serve the consumption of the capitalist, but rather the continuous valorization of capital, that is, the restless movement of more-and-more accumulation, might sound absurd. But the issue at hand is not an individual act of insanity. Individual capitalists are forced into this movement of restless profiteering (constant accumulation, expansion of production, the introduction of new technology, etc.) by competition with other capitalist: if accumulation is not carried on, if the apparatus of production is not constantly modernized, then one's own enterprise is faced with the threat of being steamrolled by competitors who produce more cheaply or who manufacture better products. A capitalist who attempts to withdraw from this process of constant accumulation and innovation is threatened with bankruptcy" (Heinrich, M. 2005, p. 15).

in today's digital media industry, together with the process of constantly accumulating capital, and eventually the competition of capitalist society. For example, in the digital media industry, competition between inter- and intra-sectors occurs faster than in any other industry. News media outlets provide a variety of digital information goods in addition to news. Typically, these may include immovable property, sales of tourism products and music records, all essentially for free. Previously strictly Telecommunication companies provide news and information, as well as a variety of online services, on their homepages. Google, Facebook, and Amazon are trying to build an internet network by launching satellites, and thereby they will play most all the usual roles of telecommunication companies and news media outlets, indeed, halfway to orbiting space companies. Capital knows that the digital media industry can achieve higher monopoly profits than any other industry sector. Furthermore, they can take full advantage of being able to provide valueless goods that are easily copied and delivered almost free of charge.

In this regard, the (digital) media industry has quickly blurred and overstepped its boundaries compared to other industries; and the intervention of the state will be even more necessary. In other words, the convergence of industries accelerated by digital technologies will eventually be seen by them to require stronger state intervention. It becomes necessary for them to identify the rapidly changing patterns of competition and proceed to suggest how to regulate it, but also to seek ways to ensure the interests of the home country (capital). The cause of all these changes actually lies embedded in the very nature of digital technology. This is so because digital technology can exchange products almost at no additional labor and cost. So, in order to produce and sell valueless goods as commodities that are actually not commodities, intervention from outside the market is necessary. Commodities produced and sold in this mode of production give these industries (companies) the possibility of obtaining higher profits, namely, monopoly profits. Hence, it is the result of capitalist competition that requires any additional intervention from the outside in an alleged free market economy, one

which is based allegedly on supply and demand with little or no government control.[275] In other words, the capitalist state becomes a monopoly capitalist state and they will intervene to create a market structure in which goods of no value can be produced and sold as commodities[276]; but it also must be mentioned that not all companies that produce digital information commodities are guaranteed monopoly profits.

However, the state's intervention unexpectedly rather intensifies competition within related industries (digital media industries). This is so because state intervention includes promoting investment in introducing new technologies in addition to their already regulatory policies to protect markets. It enforces all such common interventions to protect its own capital. However, while state intervention guarantees higher returns to its own country's capital, as a knock-on effect it further accelerates the monopolization of monopoly capital both domestically and internationally. As a result, for example, now that the monopoly position of Google can be, at least theoretically, curtailed and diminished in its domestic market, the tendency towards monopolization in the entire domestic (media) market[277] must also be re-adjusted in order to be effective. In other words, the role of the state in the clash of capitalist modes of production tends to have to increase and show ever greater strength. This is because the state has a tendency to resort back to carrying out only its original mission of protecting capital.[278] However, state intervention will not be able to prevent the clash of the capitalist mode of production, but rather, via this very thing, the speed of

[275] Free market in mainstream economics is a system in which the prices for goods and services are self-regulated by buyers and sellers negotiating in an open market. There it is explained that in a free market, the laws and forces of supply and demand are free from any intervention by a government or other authority, and from all forms of economic privilege, monopolies and artificial scarcities. But, as we know, government intervention in the real world is getting more and more intense.

[276] The centralization of the means of production and the socialization of labor reach a point at which they become incompatible with their capitalist integument. This integument is burst asunder (Marx, K. 1990, p. 929).

[277] Mergers and acquisitions of local newspapers are a prime example.

[278] As the competition between capitals intensifies, the state that seeks to protect its own capital breaks down even the borders of the state. In other words, capital transcends even the borders of nation-states (see Heinrich, M. 2005, p. 218).

competition between capitals will wind up instead being more accelerated.[279]

This explanation is completely different from the proffered explanations of competition in the media industry or of the intervention of the state presented by mainstream media studies so far. For example, in mainstream media studies, competition in the media industry is centered on media ownership or diversity of opinion (see Kiefer, M. 2001, p. 112). And state intervention in the media industry is suggested to compensate for a supposed weakness of the market system and the vulnerability of the price system (Kiefer, M. 2001, p. 260; Himmelmann, G. 1983, p. 56). However, the private property rights of media companies and the public value of news and information produced by the media do tend to contradict each other, and that contradiction has not been resolved by state intervention. In this regard, we, who are cognizant of the Marxist labor theory of value, are pointing out the intervention of the capitalist state under conditions of heightened competition in the digital media industry. In other words, in Marxist economics, the capitalist state is an instrument of the ruling class that "continues to, and directly does intervene to enable and promote capitalist production" (Heinrich, M. 2005, p. 210). So, we can understand the state of modern society to be that of trying to sell digital information goods that have been produced once now as a commodity.

7.4 Conclusion

So far, our analysis is founded on research on the value and price of digital information commodities. In other words, we examined how the study of the value and price of commodities can explain the digital media environment. At this juncture, our analysis and explanation were divided into media policy, digital journalism, and digital media industry. First, media policy is presented through economic analysis of media products; however, so far, media policy has relied too much on neoclassical economics. As a

[279] The growing clash between the US and China in the IT industry today even uses the word war. This is because competition among capital has intensified, and it is impossible to secure a monopoly influence in the relevant market without the intervention of the state. Here, Europe, while emphasizing the digital single market, simultaneously is emphasizing the European market.

result, major studies of media policy have almost exclusively focused on how to effectively distribute limited (scarce) goods. In this respect, concepts for the real world in which goods once produced in the digital society can be infinitely copied and delivered was too unfamiliar and awkward. For example, they did not account for the value or price of these commodities as zero in an analysis where marginal utility approaches zero. However, we were able to explain the inherent value and price of these commodities from a Marxist perspective and present a broader stance on digital media policy. For example, reflections on how to produce digital information commodities that require a high cost for first unit production. This our analysis focuses on capitalist production, not on some effective distribution of limited goods. Therefore, from the standpoint of efficient distribution, state intervention is described as an institution that regulates the market; but in the matter of production, the state is identified as an institution that maintains the capitalist production system and protects the interests of capitalists. Second, our analysis of the value and price of digital information commodities more fundamentally explains the changing structure of journalism today. Marxist economics explains that a product, with, however, a high use-value, produces no value unless human labor is involved. In this respect, the quality of journalism allows the formation of a price higher than the original value, and moreover, at the same time guaranteeing a high profit for the monopolist. This is a theoretical foundation for understanding the recent emphasis on quality journalism as well as sizing up the digital newspaper market that currently can set an annual subscription fee of up to $30,000 and even beyond.[280] Furthermore, while emphasizing intellectual property rights in the newspaper industry, we were able to examine the inherent contradiction of using the code (information) once expensively produced, but subsequently for next to nothing, in news production. This contradiction appears when the emphasis on private property is emphasized, but this contradiction does not occur if the goods, produced once, are subsequently used as public goods. In this respect, we could suggest the possibility of alternative journalism. In other words, if a society's

[280] The American political journalism Politico Pro subscribers pay anywhere from $10,000 to $30,000 (see Ingram, M. 2015).

‘dominant’ production method is digitized, the production and distribution of goods that can be used together can be generalized. We have looked at this possibility in the field of journalism. Third, the analysis of the value and price of digital information commodities leads to the fact that the digital media industry does not produce any value. This is suggested in the surplus-value and monopoly theory explained in the Marxist labor theory of value, where profits produced in other industries are transferred to the digital media industry. In other words, Marxist economics explains how goods that do not involve any labor in production are nevertheless priced, and we can understand the increase in the trade of these goods, namely, digital information commodities as a clash of high labor production and capitalist production modes. At this time, high labor productivity is the result of capitalist competition, and a monopoly capitalist state has been identified as one looking to protect private ownership of capital.

8 Findings and Conclusion

In this last chapter, we will look at three main issues. First, we will examine whether the contents of the analysis we have seen so far are comprised of the problems we posed at the beginning of this study. Second, while examining the results of the research questions we raised above, we will also check whether these results are derived from the research methodology presented above. Third, if there were any limitations of the research that were raised while this study was in progress, we will look at them and consider the contents of the research so as to be able to proceed further should the future warrant it.

8.1 A return back to the research questions

This study started with the question of how to understand and explain the digital media environment where digital information commodities can be, and in fact are easily transmitted and copied once produced. And the question of how to understand the digital media environment was focused on, and rested on the analysis of the value and price of digital information commodities. This is because the sheer range of digital information commodities, those once produced, and subsequently easily transmitted and reproduced, continues to increase significantly today.

In this regard, we wanted to examine, first, how economics explains the value and price of commodities. And we could confirm that neoclassical economics and classical economics explain the value and price of commodities from different perspectives. For example, neoclassical economics actively accepts the utility theory of value, while classical economics accepts the labor theory of value. This approach is also seconded and confirmed in media economics: mainstream media economics does embrace utility theory of value (neoclassical economics); and the cited PEM accepted a Marxist labor theory of value (classical economics). So, we needed to examine how these value theories explain the value and price of digital information commodities differently and from alternative perspectives. And in this connection, we were able to confirm the fact

that the value of media products in mainstream media economics is explained by the size of utility, and the prices of these products are explained by the prices set by individual companies. To round out the picture, however, it then became necessary to examine how Marxist economics explains the value and price of commodities. Unlike the utility theory, Marxist labor theory of value explains the inherent value and price of commodities in terms of 'socially necessary' labor time. Starting from these theoretical differences, we then focused on two recent studies explaining the value and price of software in the Marxist labor theory of value. One is the explanation used by scholars such as Fuchs: The labor time devoted to producing knowledge and information is the value and price of these commodities. The other is what scholars such as Chae claim: They argue that these commodities are valueless things, because these their characteristics follow the characteristics of those commodities that are easily copied and transmitted.

In this way, we tried to examine how the value and price of software is elsewhere explained in order to examine the theoretical background of how the value and price of commodities can be explained in the Marxist labor theory of value. This is because Marxist labor theory of value asserts that inherent values and prices clearly and objectively exist for commodities exchanged in a capitalist economic system. This approach is substantially different from the position of explaining that media products have a special price structure or explaining the price of media products as an individual company's assessment. In other words, this analysis seems to be alienated from the explanation that high fixed cost or marginal utility approaches zero when explaining the value and price of digital information commodities as presently constituted.

Therefore, we attempted to explain the value and price of digital information commodities in general via the Marxist labor theory of value, and not via the utility theory of value. And the explanation of the inherent value and price of digital information commodities is expanded to an explanation of the overall digital media environment, regardless of whether these products are produced, consumed, or distributed. In other words, we tried to show that the description of digital information

commodities is interconnected with the analysis of the digital media environment. Our research approach is to analyze the changing real world more fundamentally, while at the same time going beyond the traditions and theoretical frameworks of existing media and communication studies on this subject. In other words, this study does not treat the value of journalism as somehow a parallel to heating oil, or to view the price of media products as an individual company's pricing determinations.

8.2 Findings with regard to the research

This study has attempted to analyze the digital media environment based on Marxist economics. In this process, we are devoting many pages to see how we can explain the value and price of digital information commodities. And for this purpose, we are examining how mainstream media economics explains the value and price of commodities via the utility theory of value. This is a review in order to compare how the alternative Marxist labor theory of value explains the value and price of commodities, and at the same time to confirm the fact that mainstream media economics can be seen to actively embrace the basic concepts of neoclassical economics.

We devote many pages to comparing and examining the claims of Fuchs and Chae on the value and price of software representing digital information commodities in the Marxist labor theory of value. In this respect, it can be seen that the purpose of this paper is further, while calling on Marx's work, to evaluate the discussion between Fuchs and Chae, both self-proclaimed Marxist theorists. However, when the inherent value and price of a commodity is adequately explained, it is because the structures in which the commodities are produced, consumed, and distributed can be confirmed. Neoclassical economics and classical economics are divided amongst themselves according to how the inherent value of a commodity is to be analyzed. Therefore, comparing Fuchs and Chae's approach is primarily because they specifically describe the value and price of software. And then, in the process of examining these explanations, we could examine the basic concepts of the Marxist labor theory of value,

while suggesting how the value and price of digital information commodities can be explained in the Marxist labor theory of value. In addition, while examining Fuchs' argument, we point out the fact that in the political economy of media, which claims to accept Marxist economics, the value and price analysis of media products is conducted rather like the utility theory of value, if under a different dress. For the value of immaterial products can never be adequately accounted for under the category of the magnitude of labor time.

This study re-defines and stabilizes those commodities as valueless goods which, once produced, can be copied from the second unit of production without any additional labor or cost. And we explain that when digital information commodities in general, such as software, are exchanged in the (capitalist) market, their price is the Marxist monopoly price formed by the desire and purchasing power of the buyer. In this way, our study explains the value and price of digital information commodities in accordance with the Marxist labor theory of value; then we went on to examine the digital media environment in which these commodities are produced, consumed, and distributed. In other words, we explain the value and price of these commodities, regardless of their materiality, via the Marxist labor theory of value, and go on to explicate the real world in which these goods are commodified. This is because the purpose of this study is to explain the changing digital media environment more fundamentally and concretely.

The above findings of our study are confirmed by the following detailed contents.

8.2.1 Utility theory vs Labor theory

In economics, theories that explain the value and price of commodities are largely and fundamentally divided into utility theory of value and labor theory of value. All of these theories explain at what value and at what price commodities are exchanged in a capitalist market. However, the utility theory of value accepted in neoclassical

economics is concerned with how to efficiently allocate limited goods and services.[281] And the value of a product is explained by the size of its utility, and the price of a product is mainly explained by the selling price set by an individual firm. To this end, it is explained that the utility of digital information commodities approaches zero, and the fixed costs of these products are high. This explanation is also confirmed in mainstream media economics, where the value of media products is compared to heating oil, and the price of media products is defined as the selling price demanded by individual companies. Therefore, accordingly they do not discuss the value and price of media products in detail. In other words, instead of explaining the value and price of media products, they differentiate media products from the standpoint of various dimensions: For example, public goods, value goods, service goods, experience goods, trust goods, etc. (e.g., Kiefer, M. 2001, p. 140). In line with this, their main concern is to define them within various dimensions. In other words, the precise inherent value or price of public goods or service goods is of little interest to them. As a result, the emergence of digital information commodities, in which goods produced once are copied and delivered without limit, is unfamiliar to them and awkward. In as much as neoclassical economics focuses on how to efficiently distribute limited goods, digital information commodities no longer present themselves so obligingly or conforming, and are no longer in the strict meaning of the term, limited goods. In addition, the value of journalism cannot be objectively explained as might be the case with heating oil because it is extremely subjective. This is the point at which Marxist economics has for a long time been critical of the utility theory of value of neoclassical economics. Nevertheless, mainstream media economics (utility theory of value) has maintained its own academic tradition over the past few decades. And in the utility theory of value they explain how digital information commodities are produced, consumed, and distributed in their own way through their particular basic concepts. Moreover, the fields under inspection by most media and communication studies have focused narrowly on the problem of how to distribute scarce goods and services. Therefore, for

[281] Jeremy Rifkin (2014) points out that the marginal cost approaches zero. However, he did not extrapolate that the price of a commodity is zero because its marginal cost is zero.

example, the role of the state, the operation of public broadcasting, and media regulation policy are all trying to find a reasonable operation method to that end. In other words, they want to try to solve rational distribution in the capitalist market through a rational operation. And when rational distribution is not very well conducted or realized, they suddenly apply the ready concepts of market failure or state failure. However, market failure is a position that actually serves to underscore the irrational operation of both markets and states in utility theory of value. We can find some critical views recently on neoclassicism also presented by the German sociologist Philipp Staab (2019). He criticizes mainstream economics for focusing via a utility theory of value on more efficient distribution of goods and services. At the same time, he does put forth the proposition that digital capitalism can no longer be termed an economy of scarcity. Staabs' comment, actually an astute observation, ("no one pays for abundance") is in fact the same as the most fundamental problem raised in this dissertation. Infinitely copied (abundant) goods have become plentiful in the digital environment, and many people are paying dearly for these goods. However, unlike Staab, we ourselves did focus on the traditional Marxist economics.

In contrast to the above, the classical Marxist labor theory of value can explain the value and price of commodities more objectively, realistically, comprehensively, cogently, and, above all, simply. In other words, in a labor theory of value, while the price of a commodity is the expression of the value of the commodity as money, it is never forgotten that the source of wealth is labor.[282] In particular, Marxist labor theory of value explains that the social labor time required to produce commodities is the inherent value and price of these commodities. Of course, in the competitive capitalist market, the inherent value of commodities is not necessarily realized as the price of these commodities. However, there is a fundamental criterion at the center of the fluctuation of commodity prices, and Marx's approach explains the value and price of

[282] The labor theory of value is not a particular theory original to Marx. It had already been confirmed by Adam Smith and David Ricardo that the source of wealth is labor. Since then, there has been no argument from economics that the source of wealth other than labor has yet to be found. And in the capitalist mode of production, commodities are still produced and distributed. In this respect, we do not consider the labor theory of value to be an outdated theory or a fringe position.

a commodity more objectively, unlike neoclassical economics. In this respect, we still can clearly acknowledge that digital information goods are yet produced and consumed in a capitalist mode. In other words, when commodities are exchanged in a capitalist market, there is some quantitative relationship between these exchanges. Therefore, the value of a commodity is determined by the amount of labor time involved in the production of the commodity. If we agree on this point, we may then fairly now ask the inherent value and price of digital information commodities that are exchanged in the digital media environment. This present study, which began in this way, looked at the Marxist labor theory of value in order to more objectively explain the value and price of digital information commodities, which are produced once, easily and simply. And we can now more adequately explain the inherent value and price of digital information commodities.

Meanwhile, in order to understand the value and price of digital information commodities in the Marxist labor theory of value, we needed to confirm the basic concepts suggested by Marxist economics. For example, unlike neoclassical economics, Marxist labor theory of value clearly distinguishes the value and the use-value of commodities. And in the Marxist labor theory of value, moreover, the basic but essential concepts of goods and commodities are clearly distinguished, differentiated, and used. On the other hand, the here very useful basic concepts of monopoly price and monopoly profit are both derived from the Marxist labor theory of value and are expanded potentially to an overall analysis of the capitalist economic system. This study confirms these conceptual differences, and then, goes on to describe these concepts in more detail thanks to the newly won opportunity for enlightenment afforded by and within the digital media environment.

8.2.2 Knowledge commodities vs Valueless goods

We were able to confirm and analyze the position and argument of Fuchs as he explains the value and price of software in the political economy of media, focusing on the problem of how to explain the value and price of digital information commodities in

the Marxist labor theory of value. According to him, the amount of labor time invested to produce knowledge and information is realized by and surfaces in the value and price of software; and in digital capitalism, knowledge and information can be considered the means of production that enable capital accumulation. This approach is definitely an analysis of media products differentiated from mainstream media economics, but unfortunately, we have confirmed that it was not the true explanation suggested by the Marxist labor theory of value. Because, in the political economy of media, when analyzing media commodities, factors such as the knowledge and information displayed in media contents may well be defined as commodities, but the core of the problem is that no additional labor is required when these commodities are (re)produced. In other words, the software produced once can be easily copied from the second unit production without any additional cost or labor. This is because Marx's primary focus is on the material form of labor. In this respect, Korean scholars such as Chae, who defined software as a valueless thing, and then, focused on the characteristics of these goods being commodified in the market, are much closer to the Marxist mark. For example, in Marx's writings it is pointed out that valueless goods cannot emerge as commodities without state intervention such as intellectual property rights. However, scholars such as Fuchs are explaining that commodities such as knowledge and information become an increasingly important means of production in digital capitalism. By critically examining Fuchs' argument, we have made it clear that knowledge or information is not a means of production like some machine. Furthermore, Fuchs was emphasizing the importance of knowledge and information while arbitrarily interpreting the concept of 'general intellect' in Marx's work. This argument of Fuchs is rather borrowed and reproduced from the perspective of the Neo-Marxist viewpoint of commentators such as Michael Hardt and Antonio Negri. Meanwhile, in Fuchs's explanation, which emphasizes the importance of knowledge and information, only the assertion that knowledge or information is a new means of production is presented, and there is no overall explanation of how knowledge and information are produced and consumed in the digital media environment, or what proportion of the final price of production can be attributed to them, and by what procedure. Rather, Fuchs defines audience and Internet users as commodities, and

describes them as a new working class, one that produces profits and consumes commodities at the same time. This argument of Fuchs is expanded into an arbitrary explanation when it comes to the concepts such as the capitalist state, labor, and surplus value. As a result, the production of immaterial goods is explained by political decision-making, power relations, and state violence rather than by the socially necessary labor time. These arguments redirect the focus of criticism toward politics (and policy) or state criticism rather than to serve as critical commentary on the political economy. In other words, the idiosyncratic analysis of digital information commodities has been extended arbitrarily in the explanation of digital capitalism. Therefore, we are of the studied opinion that his argument and approach are irrelevant to the Marxist labor theory of value.

In order to elucidate the value and price of digital information commodities, above all, we focused on the Marxist labor theory of value itself. According to the Marxist labor theory of value, the (inherent) value of a commodity is determined by the social labor time required to (re)produce it. In this respect, we could ascertain that information and knowledge, or media contents once produced, are products of previously performed labor, and that the purpose of reproduction of this is for use, not for selling. This critical view is confirmed from the positions of Chae and Kang, who likewise explain the value and price of software. Through their explanation, we can see that any analysis of media content, which has focused itself on the PEM so far, is outside the Marxist labor theory of value. Furthermore, their pointed explanation that the value of software is almost zero and that the price of these commodities is the Marxist monopoly price, represented a different approach from that of the media economy studies conducted so far. And if it is agreed that there is no additional labor and cost required to reproduce the software once produced, the inherent value of these commodities equals zero. And also, if you agree to the position that they are valueless objects, it is necessary to explain how these goods can appear then in the global market and how the generally high market prices of these goods are formed and maintained. In this respect, we agree with the insight that state intervention, such as intellectual property rights, commoditizes these goods, and that the Marxist monopoly price, which is determined by the desire and purchasing

ability of the buyer, is the best way to more accurately explain the price of these commodities. And while this approach is, of course, suggested in the Marxist labor theory of value, it is actually more than confirmed in the present digital media industry.

8.2.3 Value and price of digital information commodities

The explanation that digital information commodities represented by software are valueless things, and that the price of these commodities are monopoly prices is a different approach from the analysis of media products that have been dealt with in media economy studies so far. For example, in mainstream media economics, media products with unique characteristics of non-excludability and non-rivalrous are defined as public goods. In mainstream media economics, they content themselves with such definitions, and there is no in-depth analysis of the value and price of these public goods. Therefore, they do not mention how public goods are produced and sold as commodities in the (capitalist) market. However, we are at pains to analyze the value and price of media products with these unique characteristics, and have begun precisely by defining these products as valueless goods. And we believe ourselves to be explaining a realistic world where these valueless goods are commodified in the market. In other words, when these public goods are traded as commodities in the market, we see the price of these commodities as a monopoly price, if one determined by the purchaser's desire and ability to purchase. This approach is differentiated from one that, per their own definition, describes goods for the public interest as "those public goods or public broadcasts which the state provides and manages."

We have looked at the real world, where these valueless objects appear as commodities and are sold at a monopoly price by dividing them into theoretical and practical aspects. This review supports the fact that the description of software value and price can be extended not only to digital information commodities in general, but also specifically to media products in general. In other words, media products produced once are technically valueless if there is no additional cost or labor to reproduce a second unit. This is explained in the Marxist labor theory of value; and it is not unfamiliar to Marxist

economics that these valueless goods appear as commodities in the capitalist market and are traded at some settled price. In this regard, we can confirm that, wherever and whenever new science and technology appear, many valueless goods have been commodified through various methods. Publishing, film, broadcasting, cable, and satellite technologies, for example, can in fact easily copy and transmit media products once produced. However, in the capitalist market, these goods have been traded as commodities through various technological blocks and legal interventions. Such technological blockade and legal intervention demand ever stronger blockade and intervention as digital technology becomes more common. This phenomenon is confirmed from two aspects: On the one hand, since these commodities are artificially exchanged, serious differences and conflicts between producers and consumers have arisen. And on the other hand, in spite of strong state intervention, exclusive ownership of these commodities is becoming more and more difficult. We can easily find examples like this in the real world. By explaining deeper the value and price of digital information commodities, we are in a position to examine the digital media environment in which digital information commodities are produced and traded.

8.2.4 Digital media environment

The primary purpose of this study was how to understand and explain the digital media environment from a Marxist point of view. At this time, we focused on the value and price of digital information commodities in order to investigate how they are produced and consumed in modern society. And we were able to confirm as the driving force for the emergence of valueless goods as commodities how monopoly capitalism operates in a situation where these commodities are traded at monopoly prices. In other words, we examined the underlying structure in which digital information commodities are produced, consumed, and distributed in the digital media environment where digital technology is universal. And then our considerations mainly centered on media policy, digital journalism, and the digital industry.

First, from the point of view of Marxism (i.e. the point of view that digital information

commodities are valueless goods and traded at a monopoly price), media policy has so far dealt mainly with the efficient distribution of extremely limited goods and services as the most important issue. However, the achievements of digital technology have now made it possible to produce unlimited goods. In other words, it is an enhancing result of science and technology that goods, once produced, can now be copied indefinitely. This means that our society has achieved a high productivity improvement. In this regard, media policy should discuss how to create joint production of public goods rather than just a concentration on the efficient distribution of limited goods, now ironically having become unlimited. For example, we need to think initially about how our society will produce digital information goods that require high cost for the first unit production. If a method has been devised for exclusive ownership of the goods once produced up to that point, now it is necessary to seek a way to jointly expand, (re)produce, and use the accumulated labor.

Second, from a Marxist point of view, the capitalist economic system is further monopolizing the production of journalism. Of course, the real world is a fact that can be easily encountered, even if not considered from a Marxist point of view. The ongoing changes experienced today eventually reduce the structure of communication to a very compressed degree, one which appears as information poverty in the era of information flood. In other words, journalism functions to produce only profitable commodities, and in the realm of profitable journalism, division between industries disappears and only competition between capitals is heightened. In response to this situation, we can explore the possibility of alternative journalism, and the methods responding to this will need to be considered in more detail. To this end we offer the possibility of an alternative journalism produced and distributed jointly by the community. Under the proper terms of alternative journalism, the private interests of media companies (‘privates Interesse’, ‘Gewerbefreiheit’) and the public obligations of the press (‘Öffentlichen Aufgabe’, ‘Medienfreiheiten’) would not collide. At this time, the possibility of alternative journalism is based admittedly on the high productivity of public ownership achieved by our society.

Thirdly, according to the Marxist labor theory of value, the digital media industry produces no surplus value. This is so because no labor is required in the process of (re)producing the commodity. This interpretation is confirmed, on the one hand, in the exclusive efforts of a few oligarchical structures to privately dominate the benefits of science and technology in spite of high labor productivity improvements. It is confirmed in stark reality as the concentration of capital becomes huge, and as the centralization of different individual capitals accelerate, whereby the surplus value (profit) produced by the whole society is intercepted and confined to a small number of firms and capital. Concentration in the digital environment is the accumulation of surplus value as capital, and this by the exploitation of workers employed in the digital market. For example, workers employed by Amazon and Uber produce surplus labor, and Amazon and Uber convert surplus value into capital. In the digital environment, centralization is when many media companies acquire and merge with other companies to increase their capital. In the digital market, we can often register the news of mergers, hosting, and takeovers or similar such acquisitions by big tech companies in the US, such as Microsoft, Google, and Amazon, at enormous cost. The concepts of centralization and concentration presented in the Marxist perspective suggest that there are already numerous monopolies in the digital media market. They are selling their products at a Marxist monopoly price, and through this, they are earning monopoly profits. We see what can best be viewed as quasi-monopolies absorbing and reaping monopoly profits in various industries and firms such as the New York Times, Axel Springer, Google, Amazon, Tesla, BBC, Bayer AG (Pharmaceutical company), etc., and these capitals today transcend all industry boundaries.

Here, we can confirm, above all else, the role of the state in the real world of monopoly capitalism; these all being insights, interpretations, and explanations coming from a Marxist labor theory of value. These explanations are describing the real world in which digital information goods are produced and consumed, unlike resorting to such mainstream concepts of market failure or even to national failure.

8.2.5 From abstract to concrete

The above analysis of the digital media environment is unfolded and expanded out from the explanation of the value and price of digital information commodities. This is the research method used to analyze capitalist society as a whole when Karl Marx began his extensive critique of the political economy of that time 150 years ago. In other words, we set aside the majority of the various concrete aspects and look at one specific aspect. In this way, Marx's analysis started with the analysis of commodities, and our analysis also started with the analysis of digital information commodities. Through this, we were able to criticize the research method of mainstream media economics (neoclassical economics) that, by contrast, overlooks, if not studiously ignores the analysis of the value and price of commodities. Mainstream media economics (neoclassical economics) sees the analysis of products and the analysis of the wider real world as separate entities and jurisdictions. However, ours is a combined approach; we looked at the inherent value and price of digital information commodities in the Marxist labor theory of value. This analysis of one specific aspect was again linked to a detailed and concreted analysis of the digital media environment in which digital information commodities are produced, consumed, and distributed. For example, we looked at media policy, digital journalism, and the digital media industry. And the analysis of several concrete aspects will again become the theoretical basis for the analysis of any specific abstract aspects. For example, we can look at one abstract aspect of what actually constitutes a state, and what then defines the public sphere. This research method, which connects 'from concrete to abstract' and 'from abstract to concrete' again in return, allows us to look at the real world more fundamentally from a more scientific point of view, unlike the academic divisions fragmented into politics, economics, and sociology in modern society. This is the main content of the law of value, and Marx's critique of the political economy.

8.3 Limitations and future research

This study understands the value and price of digital information commodities via the Marxist labor theory of value, and explains the digital media environment based on this understanding. Why indeed this study focused on the issue of explaining the value and price of commodities resides in the fact that Marxist economics is starting from the labor theory of value. In other words, this study reaffirms the importance of value theory. In the differentiation between value theory, classical economics and neoclassical economics, each can be distinguished, and in fact, they each have claimed their own academic viewpoints and traditions. Also, in recent years, there has been a remarkably increasing number of discussions arguing for the collapse or perhaps better, a revision of the value theory. However, this study shows that the Marxist labor theory of value is still effective and can help explain digital capitalism. This is because, in the capitalist market, the exchange of commodities is still realized by the magnitude of a value when it comes to commodities. In other words, in our society, it stills holds true that the source of wealth is still labor. So, although the number of digital formed commodities is remarkably increasing, the wealth of our society is still produced by labor, and so remains. This study presents and explains these facts through the basic concepts of Marxist economics.

In this regard, the elucidation of the value and price of digital information commodities is central to this dissertation. However, the digital information commodities we have chosen to look at so far we have chosen to limit to software, digital news, and digital TV contents. Of course, the same common characteristics of these commodities allow us to understand them as valueless goods. However, it is surely necessary to expand the scope of digital information commodities to various other media products such as games, music, movies, and metaverse, and to examine the structure of the commodification of these valueless goods in their (and other) related industries. Via this process, we can compare and examine the structure in which other industries and other commodities are sold at a monopoly price and how they obtain monopoly profits: For example, applicable also would be how a game company earns monopoly profits,

how a monopoly music company operates, even how virtual currency is used on the metaverse,[283] etc. These follow-up studies will confirm the structure and environment of industries where digital commodities are increasing, and will enable us to more actively predict the changes to come. For example, we may well consider the strategy of organizing the production of public goods so that all human beings (without national and ethnic boundaries) can enjoy the development of human civilization, as opposed to state monopoly capitalism that is currently putting in a decided appearance in the development of digital technology.

Meanwhile, this study confirmed the fact that mainstream media economics has maintained their theoretical and academic traditions based on the utility theory of value in analyzing the value and price of digital information commodities. The purpose of this study is to confirm as an alternative the vitality of classical Marxist economics in examining the changing digital world in a more fundamental and concrete manner. To be quite clear, the purpose of this paper is not solely to define and differentiate the theoretical differences between mainstream media economics and the political economy of media. Rather, when we clearly understand each other's theoretical differences, we expect that we can mutually accept each other's positions and arguments. In this regard, we would emphasize the need in the future to more actively present the implications for the field of media and communication studies from a Marxist perspective. Here, the Marxist perspective is that commodities to which no labor is applied are valueless goods; and, should valueless goods be sold at high prices, the prices of these commodities are explained as Marxist monopoly prices. This is because, while there have been many attempts to analyze the unresolved real world more scientifically in recent years, nevertheless, changes in the real world are coming faster than theoretical explanations can deal with and outstripping them. Therefore, media and communication studies should focus on a correct understanding, specifically above all else, of the value and price of commodities. Only then can a realistic analysis,

[283] Marx would be here considering the connection between value and the form of the value, namely, money as a form, virtual currencies as a form (see Heinrich, M. 2005, pp. 54-69).

combined with academic theories of the political, economic, and social structures in which digital information goods are commodified, be expanded. In this respect, we can suggest performing, for example, the following studies from a Marxist point of view.: Operations of public broadcasting, the relationship between the state and public broadcasting, the meaning of public goods, monopolization of companies such as The New York Times, Google, Netflix: monopoly profits, the role of the state in state monopoly capitalism, the public sphere, and impacted democracy issues, etc. Furthermore, it is necessary to conduct a realistic analysis of the relationship between wealth production and wage labor in digital capitalism, and the competitive structure in which monopoly profits are realized and strengthened. This presumes a research method in which the analysis of one abstract aspect is extended to the study of concrete aspects in order to analyze the real world, and the analysis of the concrete aspects in its turn reverts back anew to an analysis of the abstract aspect.

8.4 Concluding remarks

In a capitalist society, one in which we are presently living, wealth still comes from labor. If we are to assert that labor is not the origin of wealth in a now digital capitalist society, a new radical theory of value, and not the labor theory of value, must be proposed. Of course, over the past few decades, utility theory of value has become the main, basic foundation and formulation for understanding media economics, as well as current society. So, there exists abundant research results, and there is clearly a dominant theoretical system to explain the real world. In this respect, our claim that the wealth of capitalist society still lies in labor is viewed by some as a political slogan leaping up from a long-dormant, but out worn theory. To that extent, the labor theory of value has become somewhat outdated in mainstream economics. In particular, the terminology and conceptual tools presented by Marxist economics are different from those of mainstream economics. However, we need to pay attention to whether old tools are still useful for explaining reality. This requires careful attention both in the process of writing this paper and from the perspective of the reader.

Nevertheless, looking at digital capitalism armed with old tools, we found that digital capitalism can be seen to confirm ironically the validity of the labor theory of value even more clearly. This is because digital technology makes it easy to reproduce a commodity once it has been produced, and accordingly requires less and less labor to produce the commodity. Scientific and technological development is rapidly changing the mode of production itself. Therefore, in order to interpret a society characterized by digital capitalism, it is necessary to focus on that particularly digitally formed mode of production. In this respect, the labor theory of value becomes the theoretical foundation for explaining more clearly the mode of production in digital capitalism. In other words, properly understanding the digital media environment involves clearly identifying how these goods are produced, consumed, and distributed. On the other hand, digital technology is changing human communication methods and the structure of consciousness itself. This digital mode of production is changing the way we communicate and even the way we think. In this respect, Marxist labor theory of value overlaps to have implications for media and communication studies in general. This is because, while media and communication studies do concern themselves with the structure of communication and the attendant processes of forming consciousness, most of these studies, however, have dealt solely with these things in terms of the utility theory of value or have focused on the immaterial aspects of products contained therein. In other words, via the traditional Marxist perspective, that which more precisely explains the process of commodification of valueless digital information goods is to confirm the exclusive process of monopolizing involved in the capitalist means of production. And, as an alternative, the proper analysis should rather involve the more encompassing explanations of political and social conflicts, which result from the contradiction between the high productive forces of science and technology and the underlying capitalistic relations of production.

Above all, this additional critical perspective should be presented in order to explore its contribution both academically and to society as a whole. In other words, the thesis goes the extra length to examine critically the theoretical differences among followers of Marxism. And moreover, we critically looked at the theoretical differences between

mainstream economics and mainstream media economics. These critical descriptions are not intended as an exercise to point out each other's shortcomings and failures, but to generate discussion. The PEM has an own academic tradition with abundant research results from a critical perspective over a long time. In mainstream media economics, there is clearly a wealth of research on network effect and consumer behavior, etc. This is an academic achievement that was not covered in this study. These academic achievements have been presenting by mainstream economics and by PEM using their own theoretical tools. In this regard, we need to clearly examine and understand what theoretical foundations different perspectives start from and how they extend to different claims. These different perspectives allow us to reflect more on our own faults, failures, and weaknesses and to accept the achievements of others. The explanations and arguments of my thesis also we have flaws and weaknesses. The issues and differences of opinion that were not expressly addressed here are necessary criticisms that we must actively accept, and additional research will be needed based on this. Thus, I ask the same for the arguments presented in my paper. When this acceptance is assumed, the digital environment and digital capitalism will be able to be more correctly interpreted and understood.

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