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Development of Media Technologies as “New Media” from the Perspective of a Critique of the Political Economy of the Media

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Abstract: This paper analyses the emergence and development of new media technologies based on the approach of the Critique of the Political Economy of the Media. First, a critical overview of approaches to the genesis and diffusion of technologies is given. Second, the connection between media technologies and capital accumulation is discussed. Third, the role of media technologies in capitalism as a means of investment, production, distribution, and consumption is analysed. Fourth, the connection between innovation, commodity aesthetics, and planned obsolescence is discussed. Fifth, the antagonistic character of the media system's convergence, universalisation and diversification is shown. The article shows that technological development is not autonomous but depends on and is shaped by the development of capitalist society. In capitalism, factors such as capital accumulation strategies, crises, competition, advertising and marketing, market research, the state's economic, technology and media policies, and science and engineering influence the emergence and development of new media technologies.

Keywords: new media, media technology, technologies, Critique of the Political Economy of the Media, planned obsolescence, capitalism

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“In capitalism, the main purpose of technology is the effective organisation of capital accumulation in the form of the technical means of production” (Fuchs and Hofkirchner 2002, 161).

“We see how in this way the mode of production and the means of production are continually transformed, revolutionised, how the division of labour is necessarily followed by greater division of labour, the application of machinery by still greater application of machinery, work on a large scale by work on a still larger scale. That is the law which again and again throws bourgeois production out of its old course and which compels capital to intensify the productive forces of labour, because it has intensified them – the law which gives capital no rest and continually whispers in its ear: ‘Go on! Go on!’” (Marx 1849, 224).

“The advertisers’ strategy is to hammer it into people's heads as an unqualified desirability, indeed as a categorical imperative, that they must own the latest

product on the market. In order for this strategy to be realised, however, producers have to constantly throw 'new' products onto the market (...). Built-in obsolescence increases the rate of wearing out, and frequent style changes increase the rate of discarding" (Baran and Sweezy 1966, 129,131).

1. Introduction

The development of media technologies as "new media"¹ is analysed in this article with the help of a Critical Political Economy theory approach², specifically on the basis of a Critique of the Political Economy of the Media (Knoche 1999, 2001, 2002). There is no problem in theoretically and empirically justifying the fruitfulness of a *capital- and politics-centred Media Economics* research approach, especially since in capitalism as the globally dominant economic and societal system, the fundamentally legitimised interaction of capital (companies) and politics (state) has a central system-stabilising and system-developing function.

A realistic examination of the laws of motion of (media) capital proves to be insightful for the analysis of the development of media technologies as "new media", as it is precisely the development of technology – usually labelled with positive and euphorically connoted buzzwords such as "technical revolutions", "technical progress" or "innovations" and "growth" – is regarded as constitutive (as a question of existence") for the *individual* accumulation of capital and the necessary safeguarding and further development of capitalism into oligopoly or monopoly capitalism (Baran and Sweezy 1966). This circumstance applies increasingly in the context of the *neoliberal paradigm* in economic theory, policy and practice, which also legitimises a corresponding structural change in the media industry, which is driven forward by *planned action on the basis of the greatest possible capital autonomy with the market as the almost exclusive regulator in the supposed "free play of forces" with planned state support* (Knoche 1999, 149-151).

2. Theoretical Approaches to the Genesis, Diffusion, and Impacts of Technology

In criticism of the purely diffusion-theoretical approach dominant in economic neoclassicism, which does not do justice to a deeper social science explanatory claim due to its focus on technology and supply, which is considered unrealistic, Seeger (1996/97, 45-52) places *technology genesis models* at the centre of research into the technisation of audio-visual media. He differentiates between *constructivist* and *social evolutionary* approaches in a socio-economic research tradition with a strong institutionalist orientation. In what seems to me to be a justified differentiation from neoclassical, constructivist, and sociological approaches, he considers it more informative to analyse the decisions and strategies of political and economic actors in the introduction, application, and implementation of the more comprehensive media systems from a socio-political point of view, following a more *political* science-oriented

¹ This possibly somewhat strange-sounding expression of "new media" was deliberately chosen to characterise the starting point of my analysis: Media technologies, regardless of how old or new they really are, are *regularly* developed in the interests of (media) companies in such a way that they can be used as "new" means of production to increase productivity and can also be sold profitably as "new media".

² See Knoche (2005) on the distinction between Political Economy theory approaches into New Political Economy, Critical (Radical) Political Economy and the Critique of the Political Economy of the Media. Such approaches have been discussed for some time in the Media Economics sub-field of Media and Communication Studies.

approach by Mayntz et al. on large-scale technological systems and the significance of institutional contexts (Seeger 1996/97, 48).

Based on the theoretical approach of a Critique of the Political Economy of the Media, the development of media technologies as “new media” is considered from a number of points of view which, in my opinion, are of decisive importance for a realistic analysis, but which have nevertheless received little consideration in the Media and Communication Studies-literature to date. Under these “new” aspects of Media and Communication Studies, which are in reality relatively “old” but by no means outdated – taking into account the relevant economic, political science and sociological literature – the development of media technologies is analysed primarily taking into account the following fundamental aspects and contexts:

- The accumulation of capital by individual entrepreneurs as a “source of meaning” and “moving force” for the necessary global (media) technology development;
- Overall economic development stages of global capitalism and “system optimisation” as decisive strategy parameters;
- There is the interaction of the global economic and political strategies of the means of production industry, the media industry, and the economy as a whole: media technologies as a means of investment, production, distribution, and consumption;
- There is the interaction of strategies of planned qualitative/functional innovation (“technical progress”) and psychological/aesthetic innovation as well as of planned qualitative/functional obsolescence (“wear and tear”) and psychological/aesthetic obsolescence (“obsolescence”) as entrepreneurial strategies in the sales promotion of “new media” as well as the associated problem of “technical and social regression”.
- There is the antagonistic process of strategies of convergence, universalisation, and diversification as well as the concentration/globalisation of the worldwide media system driven by this.

In general terms, the considerations centre on the interest in providing academic *explanations as to why* media technologies as “new media” are *successively* developed (note: media technologies do not develop, they are developed) in a *planned*³ way that can be observed empirically without any problems. The aim is to contribute to a *theory* of media technology development⁴ that takes into account the realisation that these media technologies are developed in the general process of the *planned successive* development of any technology in the capital accumulation interests of capital owners on their behalf in close planning cooperation with state institutions.

³ The original competitive capitalism was characterised by a certain “market anarchy”, but in the current oligopoly capitalism this has *necessarily* been transformed into a high degree of “orderly” individual entrepreneurial and state *planned economy*. The reference to the real planned nature of the actions of economic and political actors also seems important to me against the background of the distracting “system legitimisation” of capitalism (because it is *not* a planned economy, but a “free market economy” = good) compared to socialism/communism (because it is *not* a market economy, but a centralised state planned economy = bad).

⁴ On the one hand, this involves explaining why a certain technology is made available in a certain phase, and on the other hand, why a phased *change* of any, in this sense, *arbitrary* technologies is *necessary* for the individual accumulation of capital and for the safeguarding and development of capitalism as an economic and societal system.

3. The Development of (Media) Technology in the Process of Capital Accumulation

In order to achieve realistic academic knowledge and empirically supported theory development, an analytical approach that *understands* capitalism as a globally dominant economic and societal order as *real* and therefore takes its *real dominant core* as the starting point for academic analyses seems to me to be of comparatively great value for Media and Communication Studies. The accumulation of capital and the *production methods* and *production (labour) conditions necessary* for its realisation as well as the *necessary infinite* production, sale, and consumption of commodities⁵. As is well known, capital accumulation via *profit maximisation* is a very real “essential element” in capitalism, and consequently also in the capitalist media industry, and a frequently fundamentally legitimised, everyday economic and political imperative for the owners of capital and dependent workers.

In developed capitalism, the type, development, and use of new (media) technologies are generally by no means determined by “random” inventions or by the desire to serve “technical progress” or the will to improve the fulfilment of human (communication) needs. The development of technology is therefore neither induced nor determined by technology (technology as “*deus ex machina*”) nor driven by demand or need (“consumer sovereignty”), as is often claimed. For a theory of media technology development that is not distracted by legitimising ideologies or media philosophies, but instead takes empirically proven or verifiable phenomena as the basis for theory formation, the starting point and benchmark are the defining “essential elements” of the capitalist economic and societal system, in particular⁶

- the individual accumulation of capital with its general susceptibility to crises;
- state support for the individual accumulation of capital;
- the organisation of production and labour (mode of production, productive forces and relations of production);
- the production, distribution, and consumption of goods.

The “driving forces” influencing the development of media technology are modelled in figure 1⁷. The dominant influencing factor is the activities of capital owners in the private media industry to optimise individual capital accumulation based on the capitalist mode of production by means of surplus value and commodity production.

⁵ In view of such a *real* capitalism, it seems *impossible* to me, in accordance with the academically recognised goal of being as close to reality as possible, *not to* start from capitalism and its core of capital accumulation, but instead, for example, from some imaginary systems or supposedly self-referential subsystems or from neoclassical “invisible hands” of the market. You don’t have to be a “Marxist” to do this, but it certainly can’t hurt to take note of (critical) analyses of capitalism based on the works of Marx, as they have also been presented in large numbers by “non-Marxists”, e.g. by Robinson (1956).

⁶ A similar approach to analysing media technology change can be found in Kiefer, albeit on the basis of a different theoretical background and consequently with a completely different repertoire of terms, for example in the emphasis on technical change as a “change in economic production systems through the development of new or improved products, production factors, and/or production processes” (Kiefer 2003, 184) or in the indication that the carriers of innovations are primarily companies (Kiefer 2003, 187), and finally in the treatment of the topic in the context of micro, meso and macro levels.

⁷ I would like to thank Mario Jooss for his expert research into the development of media technologies and the technical creation of figures for this article.

The central parameter for the development of media technology is the optimisation of the capital accumulation process, or more precisely: the result of this process in the form of a return on the capital invested plus an “appropriate” profit.

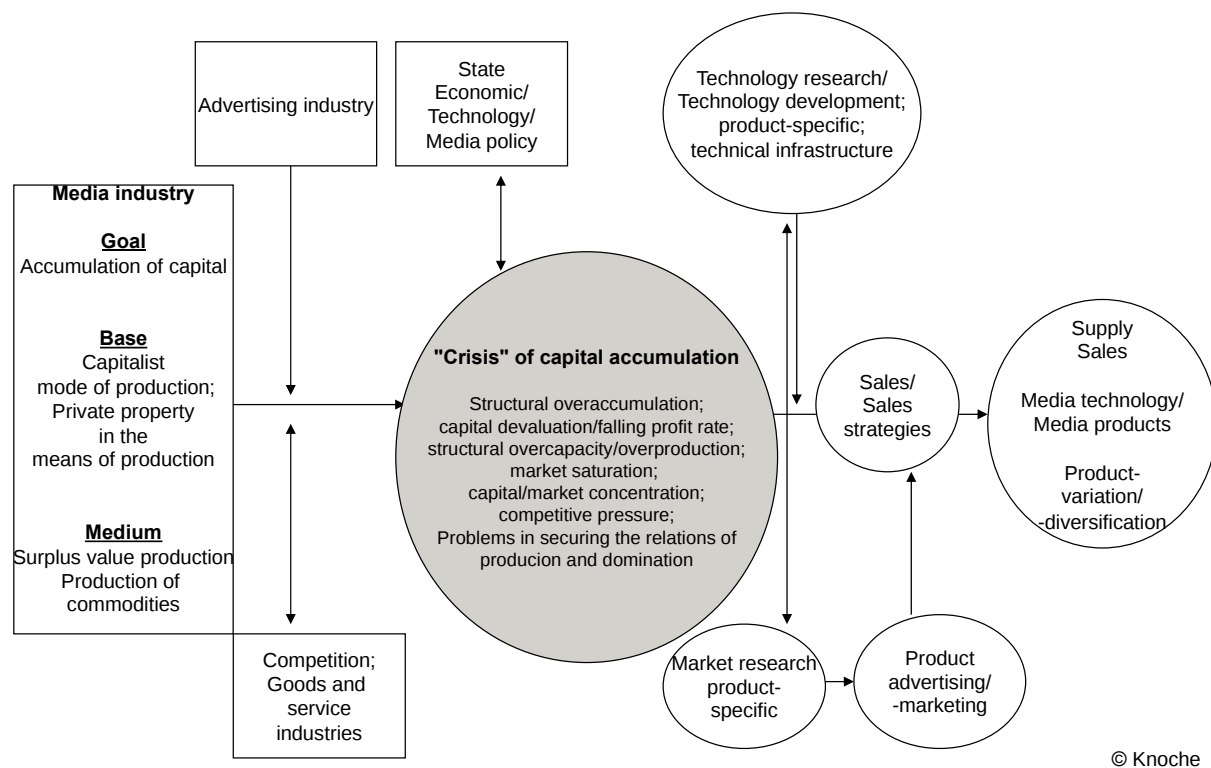


Figure 1: Factors influencing the development of media technologies as means of capital accumulation

Entrepreneurial action is primarily determined by either preventing, overcoming, or “productively” utilising the consequences of a large number of regularly “threatening” or real “crises”, which in principle jeopardise profitable individual capital accumulation or (can) lead to the devaluation or destruction of capital, in order to accelerate the devaluation and/or destruction of competitors’ capital. Media companies operate in competition with all other goods and service industries and under pressure from the entire economy as an advertising industry. The development and use of media technology is an important means of preventing and overcoming crises.

Media technology development is driven forward by media companies in close “co-ordination”, i.e., co-operation with the government’s economic, technology and media policies. As the example of the introduction of private radio and television media in Germany in the mid-1980s shows, economic policy and technology policy (the promotion of nationwide cable and satellite technology) can be successfully pursued with the help of or under the guise of well-co-ordinated media policy in the interests of the industries benefiting from it. State technology policy as economic policy also includes technology research and development subsidised with taxpayers’ money, especially in technical infrastructure (e.g., telecommunications), which was ultimately “supplied” to private capital as part of neoliberal privatisation.

The development of media technologies – which may be “valuable” in the eyes of media users because they are (apparently) useful and satisfy their needs – is literally

worthless (not producing value) or capital-destroying for the owners of capital if they are not sold at profitable prices in a way that increases the capital value in the necessary quantity in the shortest possible period. The profitable accumulation of capital is only successful if a “surplus” (profit) is achieved through the massive sale and purchase of commodities. The fundamental problem is that accumulation is not a one-off process of production and sale, but that the goal of capital accumulation can only be achieved through constant, almost infinite repetitions of this process. As this is a cumulative process of the accumulation of constantly growing amounts of capital, the non-value-enhancing idling of capital must be restricted or prevented by accelerating and quantitatively expanding the process of production and sale in order to secure the rate of profit.⁸

From the perspective of the individual accumulation of capital, it can be explained why (product-specific) market research as well as advertising and marketing of commodities, and sales and marketing strategies in general, are of central importance in the current stage of oligopoly capitalism (Prokop 2000, 139-141) for asserting the individual interests of capital owners in competition with the individual interests of other capital owners in a society that is fundamentally limited by human needs and necessities as well as by purchasing power and the willingness to buy.

From the perspective of the owners of capital, the development and use of *changing*⁹ technologies are generally *necessary* in two ways in order to secure or expand the accumulation of capital. On the one hand, the use of *regularly changing* technologies as a *means of production* is necessary to change the mode of production (mechanisation/automation as a means of strengthening the position vis-à-vis wage earners, i.e., to “secure” the relations of production in the interests of the owners of capital), to increase productivity and to reduce costs. On the other hand, this process requires the use of *regularly changing* techniques as a means of distribution and consumption. *The* incessant mass production and sale of a multitude of different media technologies, each of which is subject to constant change, is necessary because this is the only way to achieve the desired accumulation of capital.

The use of changing media techniques as “new media” is *indispensable* for solving fundamental problems that regularly arise “anew” in the process of capital valorisation, especially for successful capital accumulators: The unprofitability of technical *overcapacity* and *overproduction* (measured in terms of sales volume) and the difficulty of avoiding *overaccumulation* (“unproductive” accumulation of capital) through profitable investment of *surplus* capital (that part of the “surplus”/profit that cannot be used profitably in previous production) (Kisker 2000, 70-71). An essential theoretical element for a realistic theory of the development of media technology is therefore the realisation that this development

⁸ Other options used to break this cycle, which tends to be dangerous for capital owners, include withdrawing capital for the private consumption of capital owners, reducing costs by laying off dependent workers, destroying capital by “competing down” with other capital owners or waging successful wars.

⁹ I deliberately speak of *changing* (media) technologies because, in the context of capital accumulation, it is only the *necessity* of change that matters, regardless of whether it brings something new or something old. The usual emphasis on newness or innovation has an ideological function because it creates the impression that the use of “new” technology is always associated with “progress” and “improvement” in the living conditions of all people.

- in an *inevitable*¹⁰ *phased* process
- is *necessarily* driven forward in the interests of capital owners.¹¹

4. Media Technologies as Means of Investment, Production, Distribution, and Consumption

“The conditions of the given capitalist mode of production and the inherent inevitability of commodity production make them (the technologies, MK) at the same time a moment of the valorisation of capital, [...] this also applies to the process of discovering and developing the technologies themselves: Technologies are developed and valorised as a means of producing and multiplying capital” (Briefs 1983, 101).

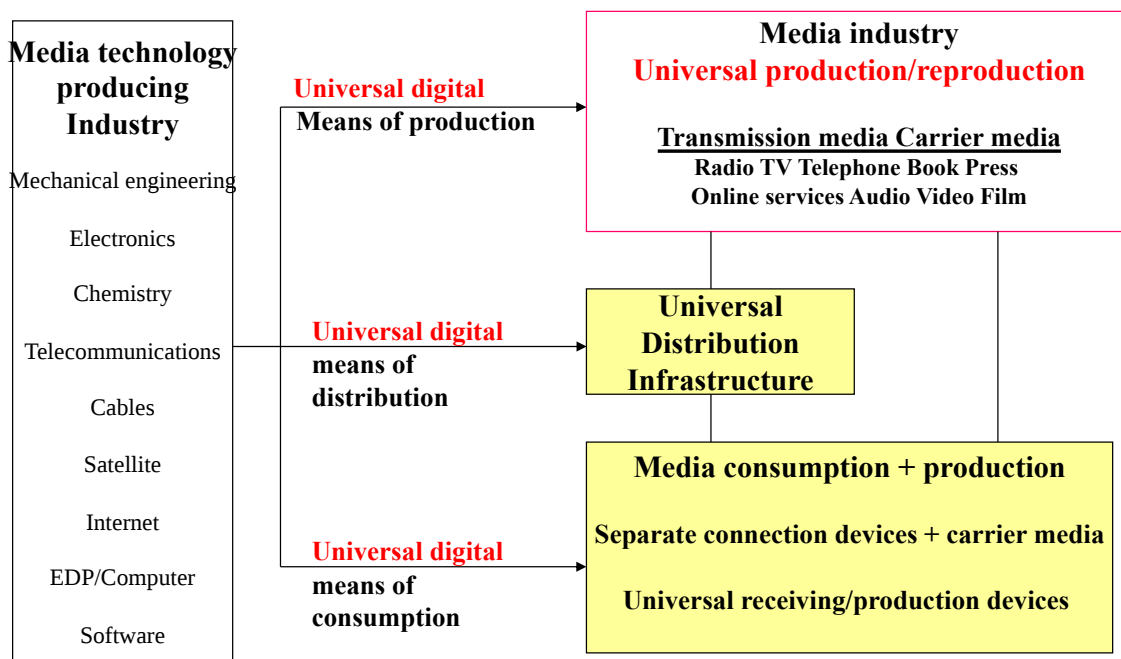
In Media and Communication Studies, the problem of “new” media technologies as “new” media has so far been discussed primarily in terms of journalistic aspects and, in the neoclassical economic tradition, from a market perspective with a broad restriction to the consumer sector. For a more comprehensive academic analysis and theorisation, however, it seems essential to consider the development of media technology in the close context of the production of the means of production, media production, media distribution, and media consumption.¹²

Marx’s (1885, chapters 20 & 21) distinction between the two departments of social production, means of production for productive consumption and means of consumption for individual consumption, and their functions for the reproduction and circulation of total social capital is fundamental here. In this theoretical context, the different significance of the production and consumption of media technologies becomes recognisable concerning their functional transformations at the various stages of an interacting capital accumulation process: the commodity function of media technologies for the producers of means of production (sales tend to be to the entire producing economy), their consumption/use function as fixed capital (means of production), and finally the commodity function for the media producers and the consumption/use function for the consumers.

¹⁰ The characterisation as *inevitable* is intended to express something other than the “economic constraints” that are always put forward as “laws of nature” by entrepreneurs, politicians, and academics for ideological reasons. This leads to a basic dilemma of critical-academic knowledge: the more the power of this inevitability is recognised as real and explained academically, the less “inevitably” possibilities of escaping, changing, or implementing alternatives to human working and living conditions are seen. This leads, for example, to considerations and behaviours of “critical adaptation”, “dual society”, “new old belief in progress “I” or “provocative front”. (Emenlauer-Blömers and Muntschik 1984).

¹¹ I am aware that such a theoretical element is often dismissed as unjustified “determinism” or even as a “conspiracy theory” for what I see as obvious reasons of a general “defensive attitude” towards criticism of capitalism. I await the corresponding “empirical attempts at falsification” by “critical rationalists” with interest.

¹² The real significance of this connection can only be outlined in this article as a suggestion for further analyses.



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Figure 2: Media technology transformation as universal means of investment, production, distribution, and consumption

An essential starting point for the development of a “media technology theory” from the perspective of a Critique of the Political Economy of the Media as a theory of structure *and* action is – similar to Seeger (1996/97, 54-55) – the general, partly media-specific interaction of a “linked technology chain” (figure 2), in the case of television as a chain of “programme contribution”, studio/production, broadcasting/transmission, reception/use and recording/storage/playback technology. Altmeyen, Löffelholz, Pater, Scholl and Weischenberg (1994, 46-47, 62-66) also emphasise – for innovations and investments in newspaper companies – the economic conditionality and the process character of innovations as well as the far-reaching restriction to innovations that act as triggers for “chains of effects of innovative measures” (product, process, structural and contract innovations).

It is precisely the combination of the use of “new technology” as a means of production, distribution, and consumption that promotes the “consumerist circle” (Candeias 2001, 169-174), which is advantageous for the owners of capital, in that the reproduction of labour power in leisure time, in addition to its “valorisation” in production time, also becomes beneficial for profit maximisation through mass (technological) consumption. In the perspective of a Critique of the Political Economy of the Media, the “capitalist production process is viewed as a unity of the labour and valorisation process” (Mendner 1975, 19-36). Consequently, the causes, types, and consequences of the development of media technologies as “new media” are also analysed to a large extent from the point of view of the development of the productive forces as well as the associated working methods and conditions as a connection between the mode of production and the ways of life.

In general, the relationship between the production of means of production and media production and distribution (figure 2) is fundamentally different from that between media production and media consumption: On the one hand, there are mutual

competitive and complementary relationships between strong individual economic capital accumulation interests within and between highly concentrated industries, in particular mechanical engineering, electronics, chemicals, telecommunications, cable, satellite, computers, and the Internet. (Kubicek 1984, Kubicek and Rolf 1985, Luyken 1985, Michalski 1997). Various media technologies are developed in combination with financial and media policy support from the state (Tonnemacher 2003a, 215-246). On the other hand, the owners of capital in the media industry (production and distribution) decide on the use of investment and production resources under monopoly or competitive conditions according to microeconomic criteria. In this context, the innovation and obsolescence strategies of the manufacturers of means of production also play a role that should not be underestimated, particularly since the media technology manufacturing industry generally produces means of production as well as means of distribution and consumption (hardware and software). The (entertainment) electronics industry not only produces technology but also programmes (music, video). Basically, the producers of means of production have to deal with “sophisticated buyers whose concern is to increase their profits. [...] producers of producer goods make more profits by helping others to make more profits”¹³ (Baran and Sweezy 1966, 70, 71).

The capital accumulation interests of individual media producers result in a compulsion to regularly replace means of production and the associated changes to production processes due to the constant need to reduce costs. In principle, the aim is to delay new investments in means of production until the technical equipment used has been amortised, in the narrower sense until it has been written off in terms of value (for tax purposes) (Baran 1966, 152-158). As an increase in production in previous areas of production tends to jeopardise profit maximisation interests due to the widespread saturation of needs and wants, surplus capital, which is a defining feature of capitalist development as what Baran and Sweezy (1966, chapter 3) term “the tendency of surplus to rise” (Baran and Sweezy 1966, 58-113), is transferred to rationalisation investments on the one hand and invested in new areas of production based on “new” technologies on the other.

As the example of the development and use of “new technologies” in the press sector in particular shows, a change in technology as a means of investment and production is of eminent economic importance for the owners of capital in the first instance. Only secondarily is a subsequent change of technology as a means of distribution and consumption of significance. This also becomes clear in the chronological sequence of the development and use of changing technologies in the press sector. Since the mid-1970s, “journalism in the computer society” (Weischenberg 1982) has been driven by the interests of capital owners in “technical rationalisation” and increased productivity through the “computerisation” of newspaper production as a change in the mode of production and the relations of production. Although the economically necessary combination of media technology as a means of production with corresponding means of distribution and consumption (“online newspapers”) has long been sought in the press sector due to the enormous potential for reducing production (printing, paper) and distribution costs (Neuberger 2003, 65-66; Tonnemacher 2003b), such a combination will only be fully realised if it can contribute to the successful accumulation of capital. Concerning traditional press products, the *technical* pressure to innovate in the consumer sector is comparatively low, as press

¹³ Manufacturers of production equipment are “helping” small and medium-sized companies in particular to go *bankrupt through the* use of innovation and obsolescence strategies.

products are more or less *short-lived* consumer goods and the use of (printed) press products is not associated with technical receivers.

5. Innovation, Obsolescence, and Commodity Aesthetics

“The buyers experience the aesthetic innovation as an inevitable, although fascinating, fate. [...] Aesthetic innovation, as the functionary for regenerating demand, is thus transformed into a moment of direct anthropological power and influence, in that it continually changes humankind as a species in their sensual organization, in their real orientation and material lifestyle, as much as in the perception, satisfaction and structure of their needs” (Haug 1986, 42, 44).

With the help of global neoliberal privatisation and deregulation policies, nation-states, in co-operation with alliances of states such as the European Union, have in recent decades created very large-scale opportunities for capital owners from various industries and sectors to accumulate capital with “new media”¹⁴. These state privatisation measures were very urgent for capital owners at the time, as there were general capital valorisation problems worldwide due to a lack of investment opportunities for “surplus” capital and, above all, due to “saturated” markets.¹⁵ Consequently, there were areas of application for a change in media technologies in connection with the development of new spheres of capital investment and new mass markets in “new” media sectors such as “cable television”, AV media, digital radio, digital television (pay TV), telecommunications, online services, multimedia, and the Internet, as well as the *development of new market segments* in *traditional* media sectors with largely saturated markets using product variations and product diversification.

¹⁴ Even if the majority of the media were not “new”, at least their devotion to private capital accumulation was something new in many countries, especially in Europe.

¹⁵ These problems have been significantly reduced by the collapse of the socialist/communist social systems and the market liberalisation in China since the 1990s.

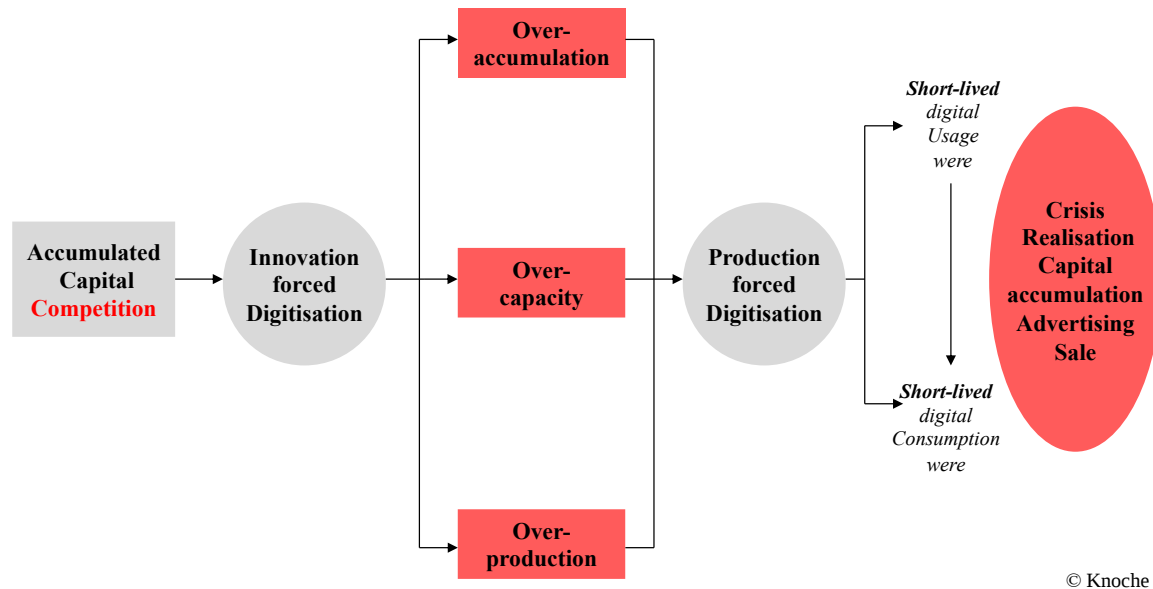


Figure 3: Chain reactions of investments and product-“innovations” in the capital accumulation process

Due to the connection between media technologies as a means of investment, production, distribution, and consumption, investment/production and product innovation *constraints necessarily arise*, which regularly trigger certain “chain reactions” of investment and product “innovation” in the capital accumulation process (figure 3). The driving forces here are the capital already accumulated to a high degree through decades of extremely successful profit maximisation (high degree of capital concentration), the devaluation of which is threatened by *over-accumulation*, *overcapacity*, and *overproduction*, combined with the danger of “saturated” (sub-)markets. In this context, the (further) development and use of old and new media technologies, i.e., production, compression/storage, transmission, encryption, and reception technologies in the past¹⁶, present, and future, play a central role. With their help, it is possible to achieve strategic goals that are fundamental to capital valorisation in the sense of profit maximisation (Knoche 1999, 158-161). The main strategy applied, the replacement of “old” with “new” media technology, serves three main “transformation” objectives:

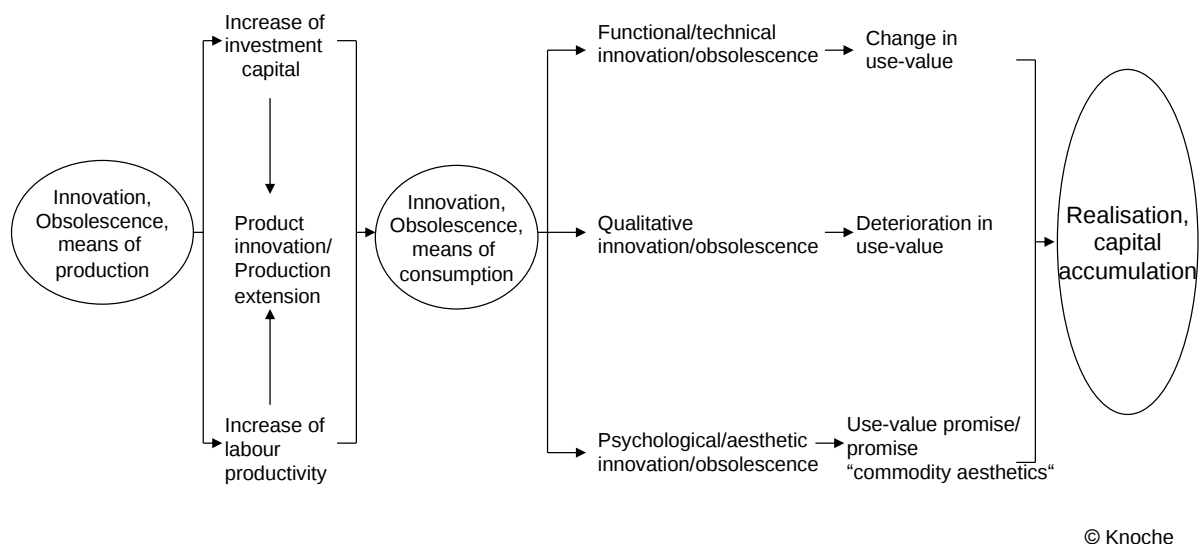
- *Durable* consumer goods are transformed into *short-lived* consumer goods¹⁷.
- *Durable* consumer goods are transformed into consumer goods *with the shortest possible shelf life*.
- The expansion of the production and sale of short-lived consumer goods (“disposable camera”, retail sale of information, pay-per-view, automatic deletion of music tracks “retrieved” from the Internet after a short time, etc.).

¹⁶ On the introduction of “new AV media” (video disc, video tape, video cassette with corresponding players) in the mid-1970s, which in its basic structures is a model for current and future processes of introducing new media technologies, see Aufermann, Knoche, Lange, and Zerdick (1977) and Jürgens (1976). In the mid-1980s dominated the international scientific discussion on “Electronic Mass Media in Europe” (de Bens and Knoche 1987).

¹⁷ The transformation of durable consumer goods into short-lived consumer goods and the decline in the lifespan of relatively durable goods are described as “a tendential law of industrial capitalist development” (Haug 1980, 161).

Three basic innovation/obsolescence¹⁸ strategies (Bodenstein 1977, 10-13; Haug 1980, 136-142, 159-170) are used to achieve these goals, *which are essential for the long-term accumulation of capital* (figure 4):

- Planned *functional-technical* obsolescence as a real functional change/extension¹⁹ with regard to the basic and/or additional use-value of a product;
- planned *qualitative* obsolescence as a real deterioration in use-value (“built-in” premature wear and tear, shortening of the physical/economic service life of products, also by omitting possible quality and durability improvements through “pigeonholing” of available knowledge and patents);
- planned *psychological/aesthetic* obsolescence as “aesthetic” innovation/obsolescence as a conscious devaluation of use-value (“unfashioning” of a long-lasting product that is still in use or basically usable).



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Figure 4: Strategies of the means of production and consumption's innovation and obsolescence

As a rule, these three strategies “of shortening the lifespan of products and of accelerated fashion change” are applied in combination as “capitalist laws” (Bodenstein and Leuer 1976, 204-205), whereby the interaction of innovation/obsolescence strategies of the two Marxian “departments of social production” of means of production and consumption mentioned above is also

¹⁸ Obsolescence, derived from the Latin *obsolescere*, means: wear and tear, obsolescence, going out of use (Glombowski 1976, 111-139: Glombowski in this context discusses Packard's 1962 book *The Waste Makers*).

¹⁹ The highly controversial question of whether functional *changes/enhancements* to products can necessarily be regarded as *improvements* for the buyer/user of the respective product, as is of course claimed in product advertising and marketing and by many scholars, can be answered on the basis of a Critique of Political Economy in general, but also for individual media technologies. This discussion is about the fundamental question of technical progress (“progress euphoria/belief”) versus stagnation or regression (“progress scepticism/criticism”) from the perspective of the individual consumer, and therefore also about the system question (the legitimisation of capitalism versus the criticism of capitalism).

fundamental here (Glombowski 1976, 37-40, 316-340). Especially in the media sector, these combined strategies of planned functional-technical, qualitative, and psychological/aesthetic obsolescence are often realised in the form of *system variations*. In product systems consisting of several product elements (e.g., camera, film, projector, accessories), a central element is changed in such a way that the entire previous system becomes unusable or appears to be unusable. This strategy is known to be used in the computer sector at extremely short intervals (hardware/software/additional device combinations).

On the one hand, the planned obsolescence in the form of the deliberately produced material “short life” (“becoming unusable” due to physical wear and tear) of the “old” media technologies that are still in use or no longer in use, but are still fundamentally *usable*, successfully stimulates replacement or additional purchases (replacement, second and additional devices) to a considerable extent. However, only the offer of a “new” technology that is no longer compatible with the “old” technology, ideally accompanied by the complete cessation of production of the “old” technology, actually makes the “old” technology “obsolete” because it is unusable. This process creates the necessary pressure on the supposedly “sovereign” consumers to open up new mass markets for replacement or additional purchases. Criticising the neoclassical and neoliberal dogma of “consumer sovereignty”, Joan Robinson, for example, concludes that “the claim that the system of private enterprise is geared towards satisfying consumer desires is pointless. Rather, consumers are the meadow on which entrepreneurs graze. We have become accustomed to a system that functions for the benefit of the producers and in which the benefit to the consumer is merely incidental” (Robinson 1966, 69).

On the other hand, a predominantly “psychic” obsolescence is constantly being generated in the form of “aesthetic innovations”, which act as an “aesthetic obsolescence” within the framework of an all-encompassing “commodity aesthetic” characteristic of capitalism, through a wide range of technical product variations (design, equipment, reception quality, retrofitting, functional and valorisation modifications, combination with additional devices, etc.) (Haug 1986). This type of aesthetic innovation “becomes the dominant force in monopoly capitalism” (Bodenstein 1977, 38) and causes consumers to *subjectively* lose the previously (good) concrete use-value of media technologies, even though they are still usable in a technical sense. It is not only concrete product-related advertising and marketing measures that contribute to the success of such strategies, but also a diverse, all-encompassing stimulation (via advertising, marketing, PR, journalism, art, culture, education, upbringing) of a general social *re-evaluation process of values* in the consciousness of consumers (disdain for the “old”, appreciation of the “new”, orientation towards “fashion”, reduction of inhibitions towards “throwing away”, overcoming thriftiness, etc.) (Bodenstein and Leuer 1976, 227).

Similar to radio and television programmes, press products, especially daily newspapers, tend to have the advantage of *being short-lived* consumer goods which, as a means of communication similar to food and luxury foods, enable calculable daily, weekly etc. mass sales as “replacement purchases” – additionally secured by the form of a fixed subscription – which in turn is the prerequisite for the actually profitable advertising business. It is no coincidence that the press industry was traditionally one of the industries with the highest rates of profit.

The long-term success of the coupled strategies of innovation and obsolescence is essential for the successful accumulation of capital. In order to arrive at an academic explanation of the *existential necessity* of the interplay of the most diverse forms of

these strategies, in particular their dominant “psychic/aesthetic” variants, it is expedient to “analyse new phenomena in the context of a transformation of the *mode of production*” (Haug 2003, 27). In doing so, it first becomes recognisable how necessary the development and application of *profitable* information, communication and media technologies, in particular the integration of electronic data processing (computers) and the Internet, is for a mode of production that ensures the accumulation of capital. A new mode of production based on modified means and processes of production serves to increase labour productivity and change labour relations (the power relationship between capital owners and wage earners in favour of the capital owners). However, this transformed mode of production and the associated increase in the amount of capital employed is only advantageous if the increase in product quantities through the profitable sale of these products leads to the realisation of capital accumulation (return flow of the capital employed plus profitability).

The higher the use of new technology increases labour productivity and the amount of capital employed, the greater the *pressure* on individual companies to increase product quantities and to use innovation and obsolescence strategies in order to sell their “own” products profitably in the face of market saturation and limits on demand and purchasing power (Bodenstein 1977, 32-41). But even a successful accumulation of capital creates a new *production constraint* insofar as “surplus” capital must be invested in new (technical) products in order to ensure the continued profitable valorisation of capital. This contradictory nature of the change in the mode of production through the use of new technologies and the associated reinforcement of the general production constraint also explains the central importance of the development of media technologies as “new media” and, in connection with this, the use of primarily “psychic/aesthetic” innovation and obsolescence strategies, which are essential for the realisation of “profitable”²⁰ capital accumulation. The successful application of these strategies, which simultaneously anchor capitalist commodity production in individuals’ consciousness as “advantageous” in macroeconomic and social terms, actually leads to large-scale and planned destruction of use-values (Bodenstein 1977, 39) and to “secondary exploitation” (Haug 1986, 103) in the area of consumption in addition to primary exploitation in the area of production.

The causes and types of innovation and obsolescence strategies are shown in figures 3 and 4. The general causes for the necessity of using such strategies are the goal of capital accumulation and the pressure to valorise accumulated capital. The specific causes are the consequences of the renewal of the mode of production through the use of new production processes and new means of production: the increase in labour productivity through technical rationalisation, the change in labour relations, and the increase in the quantity of capital. This process requires an increase and variation in product quantities, the profitable sale of which, necessary for the realisation of capital accumulation, can only be achieved through the interrelated use of various innovation and obsolescence strategies.

Technological change is generally in the interests of both hardware manufacturers (players and carrier/storage media) and content/programme producers. For the programme industry, there is a need to valorise content anew via new carrier media in

²⁰ Capital accumulation is considered “profitable” from the perspective of the individual capital owners if a rate of profit is achieved that at least corresponds to the macroeconomic and industry-specific average but is in any case above the level of possible interest-based income for non-productively utilised “investment capital”. For oligopoly and monopoly companies, however, capital accumulation is generally only “profitable” if “extra profits”, i.e., returns above the average, can be achieved through the use and sale of new technologies.

old or new markets. Such valorisation is an economic necessity for them because, on the one hand, there is a lack of successfully exploitable new programmes and, on the other hand, successful products (“hits”) can only be sold *repeatedly* via new carrier media (Knoche 1999, 158-159).

6. The Media System’s Antagonistic Process of Convergence, Universalisation, and Diversification

The extent, sequence, and speed of the convergence and diversification processes are mainly determined by the strategies of financially strong (media) groups in highly concentrated media markets. Economically, they have the necessary capital and market power and politically they can assume favourable framework conditions and a high degree of assertiveness based on radical privatisation and deregulation policies. Consequently, the strategic role played by convergence, universalisation, and diversification in the global capital valorisation process of these companies must be examined. Above all, this means analysing which degree of convergence is more conducive or enforceable for which companies in which media sectors in the respective phases of different competitive and market strategies and which is not.

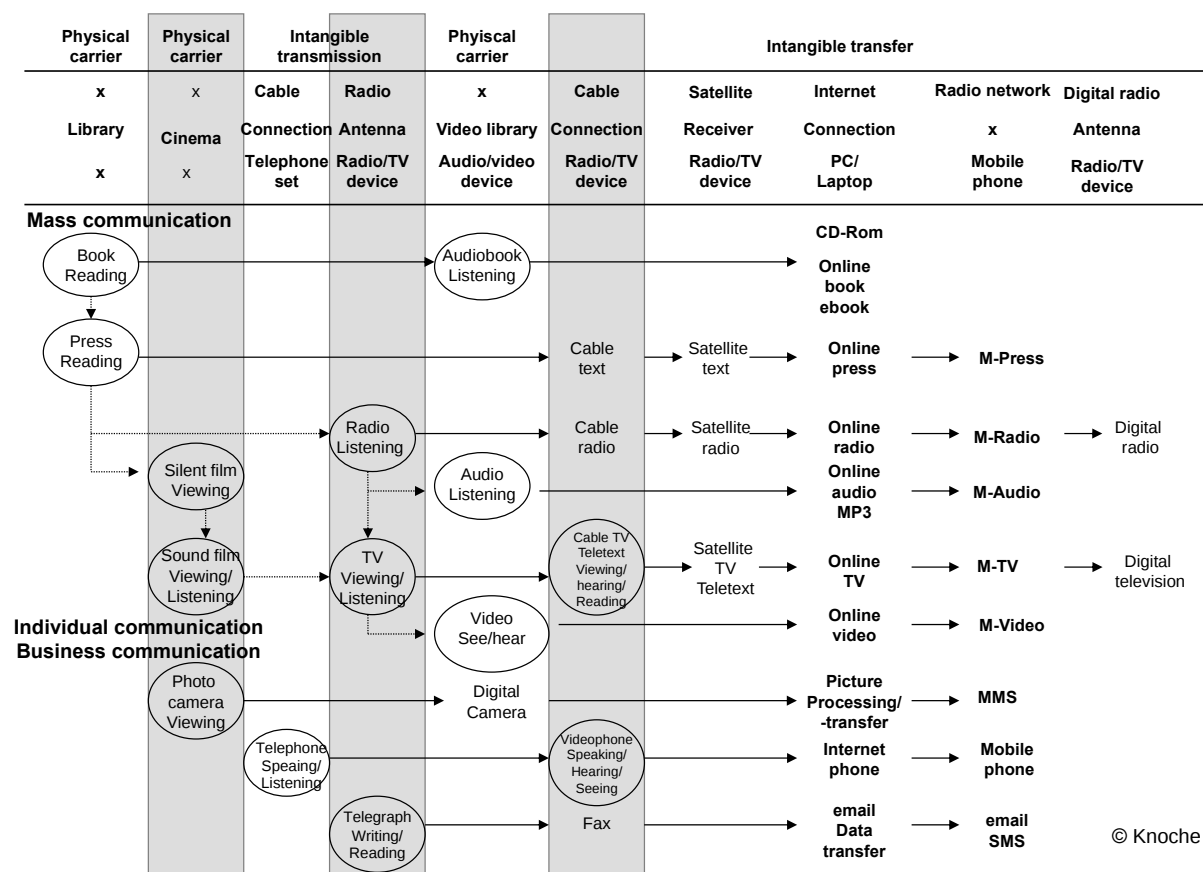


Figure 5: Media technology’s development, diversification, convergence, and universalisation

Figure 5 is an attempt to depict the development, diversification, convergence, and universalisation of media technologies as comprehensively as possible, particularly concerning the phases of this development based on key characteristics, divided into mass communication media and individual and business communication media.

Vertically (from top to bottom) – also as an indication of phases over time – the complementary developments of “new media” are arranged as a diversification process according to the criterion of their physicality, but also according to which human senses are “newly” addressed in which combination in the course of development. The further developments within the individual media (sectors) are arranged horizontally (from left to right) according to the scale of material carriers or immaterial transmission.

The process of technical change in the media and the associated (partial) convergence/universalisation process should be shown in its basic features. In principle, four strategies for the *planned successive* change of media technologies can be recognised empirically based on the development to date²¹:

- additional media types, differentiated according to forms of communication (in the area of mass communication: book, press, film, radio, television, audio, video);
- per media type, a development of *generations* through a change of physical carriers and/or transmission channels, e.g. cable, satellite, online, M-TV or record, CD, DVD (not shown in figure 5 for reasons of clarity);
- a diversification of *models* per media type and generation (not shown in figure 5 for reasons of clarity);
- per media type, generation, and model, *partial convergence/universalisation* across different reception devices and transmission channels (television/cable/satellite, computer/Internet, mobile phone/mobile communications).

The process of convergence/universalisation (Knoche 1999, 165-172) has become possible in particular based on the cross-media digitisation of production and transmission and is being driven forward based on cable, Internet, and mobile phone technology. For example, the future of audio-visual media technology (production, distribution, consumption) is determined by the convergence and diversification strategies of well-funded companies in the interested industries, primarily the film/video/television and music industries (production and distribution), the electronics, chemical and computer industries (hardware), and the telecommunications industry (distribution). A distinction must be drawn between the technical, economic, institutional-organisational, content-related, and functional convergence of traditionally separate individual, business and mass communication.

The traditional diversification into different media sectors – primarily differentiated according to technical development stages – according to the communication forms of text/image communication (press, book), sound communication (radio, sound carrier), moving image/sound communication (television, video, film) as well as voice and data communication (telephone/computer) is just as important as the diversification into different transmission channels (terrestrial, cable, satellite, telephone network, Internet) and finally the diversification into a large number of different carriers, film) and voice and data communication (telephone/computer), as well as the diversification into different transmission channels (terrestrial, cable, satellite, telephone network, Internet). The diversification into a large number of different carrier media and reception devices has been economically necessary and will continue to be used in

²¹ I consider a distinction between invention and innovation or between radical (basic innovation, change of technological paradigm) and incremental innovation (see Kiefer 2003, 184-185, 189-192), which in my opinion can hardly be made with certainty in the media sector, to be less appropriate.

the foreseeable future to a large extent in the interests of capital valorisation. Complementary to this, separate, “internal” convergence processes are being driven forward for each of the traditional and “new” media, including television, which is used as a means of diversified multiple valorisations of media products and media technologies in the global capital valorisation process.

References

- Altmeppen, Klaus-Dieter, Martin Löffelholz, Monika Pater, Armin Scholl, and Siegfried Weischenberg. 1994. Die Bedeutung von Innovationen und Investitionen in Zeitungsverlagen. In *Print unter Druck. Zeitungsverlage auf Innovationskurs. Verlagsmanagement im internationalen Vergleich*, edited by Peter A. Bruck, 37-193. München: R. Fischer.
- Aufermann, Jörg, Manfred Knoche, Bernd-Peter Lange, and Axel Zerdick. 1977. Die Entwicklung der AV-Medien unter dem Aspekt intermediärer Konkurrenz und Konzentration. *Media Perspektiven* 77 (8): 445-454.
- Baran, Paul A. 1966. *Politische Ökonomie des wirtschaftlichen Wachstums*. Neuwied and Berlin: Luchterhand.
- Baran, Paul A. and Paul M. Sweezy. 1966. *Monopoly Capital. An Essay on the American Economic and Social Order*. New York: Monthly Review Press.
- Bodenstein, Gerhard. 1977. Geplanter Verschleiß. Erscheinungsformen und Erklärungsansätze. In *Geplanter Verschleiß in der Marktwirtschaft*, edited by Gerhard Bodenstein and Hans Leuer, 1-47. Frankfurt/Main and Zürich: Deutsch.
- Bodenstein, Gerhard and Hans Leuer. 1976. Gibt es geplanten Verschleiß? Anmerkungen zu einem Gutachten sowie ein Exkurs über das weltweite Glühlampen-Verschleiß-Kartell. In *Technologie und Politik. aktuell-Magazin 5. Thema: Kartelle in der Marktwirtschaft*, edited by Freimut Duve, 204-232. Reinbek: Rowohlt.
- Briefs, Ulrich. 1983. *Arbeiten ohne Sinn und Perspektive? Gewerkschaften und “Neue Technologien”*. Köln: Pahl-Rugenstein. Second edition.
- Candeias, Mario. 2001. Arbeit, Hochtechnologie und Hegemonie im Neoliberalismus. In *Ein neuer Kapitalismus? Akkumulationsregime – Shareholder Society – Neoliberalismus und Neue Sozialdemokratie*, edited by Mario Candeias and Frank Deppe, 150-179. Hamburg: VSA.
- de Bens, Elsa and Manfred Knoche. Eds. 1987. *Electronic Mass Media In Europe. Prospects and Developments. A Report from the FAST Programme of the Commission of the European Communities*. Dordrecht, Boston, Lancaster and Tokyo: D. Reidel Publishing Company.
- Emenlauer-Blömers, Eva and Thomas Muntschick. 1984. Linke und Neue Medien. In *Neue Medien und Technologien – Wie damit umgehen? Beiträge zu einer Strategiedebatte*, 110-136. Berlin: Die Arbeitswelt.
- Fuchs, Christian and Wolfgang Hofkirchner. 2002. Postfordistische Globalisierung. *Z – Zeitschrift Marxistische Erneuerung* 50 (13): 152-165.
- Glombowski, Jörg. 1976. *Ansätze zu einer Theorie der geplanten Obsoleszenz*. Wirtschaftswissenschaftliche Dissertation. Berlin: Freie Universität.
- Haug, Wolfgang Fritz. 2003. *High-Tech-Kapitalismus. Analysen zu Produktionsweise, Arbeit, Sexualität, Krieg und Hegemonie*. Hamburg: Argument.
- Haug, Wolfgang Fritz. 1986. *Critique of Commodity Aesthetics. Appearance, Sexuality and Advertising in Capitalist Society*. Cambridge: Polity.
- Haug, Wolfgang Fritz. 1980. *Warenästhetik und kapitalistische Massenkultur I. „Werbung“ und „Konsum“*. Systematische Einführung in die Warenästhetik. Berlin: Argument.
- Jürgens, Ekkehardt. 1976. Neues vom Hörensehen. Zur Entwicklung neuer Audiovisions-Medien. In *Massen, Medien, Politik*, edited by Wolfgang Fritz Haug, 5-72. Karlsruhe: Argument.

- Kiefer, Marie Luise. 2003. Medienökonomie und Medientechnik. In *Medien und Ökonomie. Band 1,2: Grundlagen der Medienökonomie: Soziologie, Kultur, Politik, Philosophie, International, Geschichte, Technik, Journalistik*, edited by Klaus-Dieter Altmeppen and Matthias Karmasin, 181-208. Wiesbaden: Westdeutscher Verlag.
- Kisker, Klaus Peter. 2000. Empörung der modernen Produktivkräfte gegen die modernen Produktionsverhältnisse im Zeitalter der „Globalisierung“. In *Politik des Kapitals - heute. Festschrift zum 60. Geburtstag von Jörg Huffs Schmid*, edited by Rudolf Hickel, Klaus Peter Kisker, Harald Mattfeldt, and Axel Troost, 65-73. Hamburg: VSA.
- Knoche, Manfred. 2021. Capitalisation of the Media Industry from a Political Economy Perspective. *tripleC: Communication, Capitalism & Critique* 19 (2): 325-342. DOI: <https://doi.org/10.31269/triplec.v19i2.1283>
- Knoche, Manfred. 2016. The Media Industry's Structural Transformation in Capitalism and the Role of the State: Media Economics in the Age of Digital Communication. *tripleC: Communication, Capitalism & Critique* 14 (1): 18-47. DOI: <https://doi.org/10.31269/triplec.v14i1.730>
- Knoche, Manfred. 2005. Medienökonomische Theorie und Ideologie im Kapitalismus. Einige zitatengestützte Überlegungen zu Marie Luise Kiefers „Medienökonomik“ aus der Sicht einer Kritischen Politischen Ökonomie der Medien. In *Bausteine einer Theorie des öffentlich-rechtlichen Rundfunks. Festschrift für Marie Luise Kiefer*, edited by Christa-Maria Ridder, Wolfgang R. Langenbucher, Ulrich Saxer, and Christian Steininger, 406-435. Wiesbaden: Verlag für Sozialwissenschaften.
- Knoche, Manfred. 2002. Kommunikationswissenschaftliche Medienökonomie als Kritik der Politischen Ökonomie der Medien. In *Medienökonomie in der Kommunikationswissenschaft. Bedeutung, Grundfragen und Entwicklungsperspektiven. Manfred Knoche zum 60. Geburtstag*, edited by Gabriele Siebert, 101-109. Münster, Hamburg and London: Lit.
- Knoche, Manfred. 2001. Kapitalisierung der Medienindustrie aus politökonomischer Perspektive. *Medien & Kommunikationswissenschaft* 49 (2): 177-194. <https://eplus.uni-salzburg.at/obvusboa/content/titleinfo/4659155>
- Knoche, Manfred. 1999. Das Kapital als Strukturwandler der Medienindustrie – und der Staat als sein Agent? Lehrstücke der Medienökonomie im Zeitalter digitaler Kommunikation. In *Strukturwandel der Medienwirtschaft im Zeitalter digitaler Kommunikation*, edited by Manfred Knoche and Gabriele Siebert, 149-193. München: R. Fischer.
- Kubicek, Herbert. 1984. *Kabel im Haus – Satellit überm Dach. Ein Informationsbuch zur aktuellen Mediendiskussion*. Reinbek: Rowohlt.
- Kubicek, Herbert and Arno Rolf. 1985. *Mikropolis. Mit Computernetzen in die „Informationsgesellschaft“. Pläne der Deutschen Bundespost. Wirtschaftliche Hintergründe. Soziale Beherrschbarkeit. Technische Details*. Hamburg: VSA.
- Luyken, Georg-Michael. 1985. *Direktempfangbare Rundfunksatelliten. Erklärung, Kritik und Alternativen zu einem „neuen Medium“*. Frankfurt/Main and New York: Campus.
- Marx, Karl. 1885. *Capital Volume II*. London: Penguin.
- Marx, Karl. 1849. Wage Labour and Capital. In *Marx & Engels Collected Works (MECW) Volume 9*, 197-228. London: Lawrence & Wishart.
- Mendner, Jürgen. 1975. *Technologische Entwicklung und Arbeitsprozess. Zur realen Subsumtion der Arbeit unter das Kapital*. Frankfurt/Main: Fischer.
- Michalski, Hans Jürgen. 1997. *Der Telekommunikationskomplex. Politische Ökonomie der Technik- und Infrastrukturentwicklung in der Telekommunikation*. Marburg: BdWi.
- Neuberger, Christoph. 2003. Zeitung und Internet. Über das Verhältnis zwischen einem alten und einem neuen Medium. In *Online - Die Zukunft der Zeitung? Das Engagement deutscher Tageszeitungen im Internet*, edited by Christoph Neuberger and Jan Tonnemacher, 16-109. Wiesbaden: Westdeutscher Verlag. Second, revised and updated edition.
- Packard, Vance. 1960. *The Waste Makers*. New York: David McKay.

- Prokop, Dieter. 2000. *Der Medien-Kapitalismus. Das Lexikon der neuen kritischen Medienforschung*. Hamburg: VSA.
- Robinson, Joan. 1966. *Die fatale politische Ökonomie*. Frankfurt/Main and Wien: Europäische Verlagsanstalt.
- Robinson, Joan. 1956. *The Accumulation of Capital*. Homewood, IL: Richard D. Irwin.
- Seeger, Peter. 1996/97. Technisierung audiovisueller Medien und veränderte Strukturbedingungen für das Massenmedium Fernsehen. In *Technisierung der Medien. Strukturwandel und Gestaltungsperspektiven*, edited by Bernd-Peter Lange and Peter Seeger, 39-132. Baden-Baden: Nomos.
- Tonnemacher, Jan. 2003a. *Kommunikationspolitik in Deutschland. Eine Einführung*. Konstanz: UVK. Second, updated edition.
- Tonnemacher, Jan. 2003b. Wege zur Online-Zeitung. Erfahrungen mit den Vorläufermedien des Internet In *Online - Die Zukunft der Zeitung? Das Engagement deutscher Tageszeitungen im Internet*, edited by Christoph Neuberger and Jan Tonnemacher, 110-123. Wiesbaden: Westdeutscher Verlag. Second, revised and updated edition.
- Weischenberg, Siegfried. 1982. *Journalismus in der Computergesellschaft. Informatisierung, Medientechnik und die Rolle der Berufskommunikatoren*. München and New York: Saur.

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