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The transformation of media economy paradigm based on time value and decentralization

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As an important underlying structure of the Internet and economy, the media economics is undergoing structural changes. It is in urgent need of a more original and forward-looking academic vision and theoretical framework to refine its basic problems to study and solve more challenging practical problems in a larger picture. First, this study critically analyzes the current serious problems of media economics basic problems and the absence of necessary unified value scale. Also, the study discusses how to construct a unified value scale of media economics based on time value theoretically. The reason is that, time value could completely reflect the production and consumption process of media content products better than monetary value, which is much closer to human culture and spiritual life in reality. Under the limit of life length, time value is also much closer to the absolute or final value transaction which contains more complex forms and laws of value transaction. Furthermore, it discusses the theory frame of multi-dimensional value analysis on media content products and how to elaborate the dynamic evolution mechanism labeled by decentration according to the relative changes of organization cost and transaction cost, in order to promote the paradigm innovation of media economic research.

Key words: Media economics, time value, platform economy, paradigm innovation.

INTRODUCTION

Media Economics (also known as medium economics) is a cross-disciplinary discipline formed by the application of economics to the field of communication (Alexander et al., 2003), and the object of study is mainly the economic issues related to communication and media. Theoretically, media economics draws on the research methods of economics, communication and management, and has gradually developed some unique theoretical paradigms and analytical methods (Singh and Cui, 2012). Based on critical analysis, this thesis argues that media

economics lacks the core issue and the necessary unified theoretical value scale in its development process as an independent discipline. It is possible to construct a unified theoretical value scale based on the time value because time value is much closer to the spiritual and cultural life of human beings and ultimate value transaction in reality with more complex forms and rules than monetary value. On this basis, media economics can establish a theoretical framework for multi-dimensional analysis of the value attributes of media content products, and

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according to the relative changes of organizational cost and transaction cost, it can expatiate the dynamic mechanism of innovation and iteration of media economics research paradigm and the gradual development path of decentralization.

LITERATURE REVIEW

At the present stage, the media economics marked by increasing marginal efficiency (Young, 1928) and super-scale sharing-model monopolies (Zhou, 2011) is characterized by platform economy and two-sided market (Rochet and Tirole, 2003) has been fully penetrated into all areas of human society. At the same time, the media content products as a special 'time consumer goods' with the rigid constraints of scarce resources, 24 h a day equally for everyone, presents the property in the form of ultimate value in some ways and the unique value scale to compare and analyze the transaction between the diverse content products, different forms of media and non-media organizations. Therefore, time value is the most important value form and theoretical scale in media economics.

At the same time, the Long Tail economy based on super-scale sharing -model monopolistic platforms (Anderson and Gabszewicz, 2006) is accelerating to breed more diversified business innovations. It is a very good case of live online-shopping bred by WeChat[i] and Tik Tok[ii], which plays a very important role in the special social decompression caused by COVID-19. Those new media economy creations with the media economics has become a great power in the contemporary human society economic system and an engine of social change. It's distinct advancement and pioneering is worthy of further study.

The study of media economics follows the rapid development of media technology and maps the changing track of technology. Albarran (2019) reviews the history of media economics and divides the development of western media economics into four typical stages according to the corresponding technical forms: media economics research on printing, television, and film as main objects (1950-1975).

Media economics was first originated in North America and Europe in the 1950s, when economists applied economic methods to the management and economic problems of media enterprises. Early research was mainly devoted to the study of newspaper competition (Ray, 1951) and broadcasting industry structure and regulation (Coase, 1950a, b). Most of the early studies on media economics were fragmented and did not form a complete system. Their areas of concern were not only the economic problems of media enterprises themselves, but also include ownership (Nixon and Hahn, 1971; Sterling, 1975), regulatory policies and laws (Owen, 1975), advertising and consumption (Telser, 1968; Nelson, 1974), media political economy (Schiller, 1969), etc.

Research on media economics with cable and satellite TV as main objects (1976-1995)

Due to the commercialization of media and the increasing cost of content production and licensing, media companies moved towards acquisitions and mergers, and most media industries begun to consolidate, followed by studies on media concentration, which attempted to quantify the level of concentration within and across the media industry (Bates, 1993; Albarran and Dimmick, 1996). During this period, the theory on the basic issues of media economics was more refined: Picard (1989, 2014) systematically elaborated the duality of media products (Dual Goods). Media products and services have a complex duality that is they are both artistic and commercial, serving both audiences and advertisers. The latter two have quite different needs, often leading to conflicts of multiple objectives.

Research on media economics with theme of the transforming from traditional media to new media (1996-2010)

It focused on how a general company-level approach can be applied to the study of media and communications companies. It explored the differences between the two in terms of corporate mission, strategy, organizational choices, and other business decisions. Albarran (2019) identified five major developments that have affected the media industry during this phase: the transition from analog to digital media; the rapid growth of the Internet and digital platforms; the emergence and popularization of smartphones; the rise of social media; and the introduction of streaming media. The continuous technological revolution drive the rapid development of technology-driven media enterprises (Apple, Facebook, Amazon, etc.), which aroused scholars from all over the world to the universality of media economics research, among which a considerable part of the focus was on the most urgent practical problems, that was, understanding how the development of these new technologies affected the integration and development of traditional media and related industries (Rawolle and Hess, 2000; Lawson-Borders, 2003).

Media economics research based on platform media and mobile media (2011-Present)

As the Internet and new technologies are deeply embedded in the media industry, the comprehensive popularization of mobile Internet, the accelerated iteration of smart devices (smart phones, tablets, wearable

devices, etc.), the development of 5G, VR/AR, IoT technologies, artificial intelligence and other techologies, media has transformed from an industry to a social infrastructure, at the same time, the research scope of media economics has been greatly broadened. Digital technology has made it possible to "platformize" infrastructure and "infrastructurize" platforms, researchers like Plantin believed that Google is both a platforms and a social infrastructure (Plantin et al., 2016). More questions about media economics around "platform media" or "media platforms" also arise. For example: How do platforms affect researchers and scholars' understanding of traditional media markets and industries? How will these new innovations further affect consumers' attention and consumption habits? How will the business model evolve? What new theories and methods are needed to conduct research in this constantly evolving technological environment? What about the regulation of media platforms, privacy and security issues? (Nechushtai, 2018; Voramontri and Klieb, 2019; Jullien and Sand-Zantman, 2021).

Scholars, Cunningham and Flew (2015), summarized five new trends in the media economy in the era of platform media: the generalization of converged digital media platforms across all media; the growing interest in the socioeconomic value of networks; the disruptive impact of digital media technologies on traditional media business models; the rise of mass user-generated media content (UGC) on social platforms and the need to redefine the nature of media audience/consumer. The growth of creative industries policies and programs that focus on media and cultural departments as important sources of social wealth creation and economic innovation. In short, from the development context of Western media economics, the structural changes in the media economy driven by new technologies have not only greatly broadened the scope of media economics research, but also brought a strong impact on the basic paradigm of media economics.

In the traditional media economic system, dual product attributes are the basic attributes and rules of media value: media sells content products to consumers (readers, TV viewers, Internet surfers, etc.) and sells advertising products to advertisers at the same time; thus, the media benefits from the above two media products. The audience/consumers are lack of proactive choices, such as the proactive choice of broadcast content, broadcast time, broadcast order and also the advertising. Similarly, it is difficult for advertisers to effectively select the target audience. Instead, they strive for the most audience at a higher cost. Those value attributes and transaction patterns lead to the lack of necessary diversity and personalized content in the media economics (Anderson and Gabszewicz, 2006), so the intermediary and coordinating role of traditional media enterprises as "platforms" is not as prominent as the real platform media is today, like Facebook, Wechat and

Google etc.

In contrast, the platform media companies in a new technology ecosystem further develops their dual product nature into a bilateral market. On the basis of the achievements of Jean and Jean-Charles (2003) and Lindstädt (2010) tried to further explore the possibility of applying the bilateral/multilateral market theory in economics to media markets. The article pointed out that the traditional media economics methods also identifies two related markets for media companies—the advertising market and the audience market—by defining the relevant markets(which is also the scope of the discussion of traditional dual product attributes). However, in the past, the two markets were defined and analyzed separately and were not sufficiently linked to each other. The bilateral market theory emphasizes that the two markets are interdependent due to potential network externalities. The audience and the advertising industry are interrelated, and as the media's platform attribute continue to become prominent and user sovereignty expand, the interrelation continues to rise. However, the two follow different goals and must be coordinated by media companies (platforms) in order to complete various transactions, thus forming bilateral (or even multilateral) markets. In recent years, many scholars of media economics have analyzed and solved various economic and managerial problems in media enterprises and media industries from the perspective of bilateral/multilateral markets (Evans and Schmalensee, 2013; Guo and Lai, 2014; Jia et al., 2019).

At present, there is still not a sufficiently broad academic consensus on the basic concepts of media economics itself and the fundamental issues of its research, which began in the 1950s, in both traditional and new media ecologies. Most of the relevant information available stop at the phenomena and influence of media economics, rather than the basic issues and concepts.

MATERIALS AND METHODS

Basic problems of media economy from the perspective of time

According to Albarran (2019), as a field of study, there is more interest in the field than ever before. On the other hand, there has been little progress in the way of theory development of media economics for many years. The development of new technologies and media platform provides new opportunities for media to provide personalized services, utilize digital content stock and the dynamics of social media. At the same time, it calls for the innovative development of basic issues and paradigms in media economics.

Basic issues of media economics: The theoretical perspective based on the value of time

In Chinese academia, the generally consensus is that media

economics is built on different economic theories and analytical methods dedicated to the study how economic and financial forces affect media systems and media organizations. Another general consensus that coexists with it focuses on the specific attributes of media content products, which are considered to be different from general industrial goods and general commodities and have strong non-commercial social attributes. However, how this special attribute is reflected in the general law of media economics has always stuck in the academic vision of economist Ronald H. Coase nearly a century ago, and no significant progress has been made. Coase won the Nobel Prize in economics for his book The Nature of Firm, which answers the basic question: "Why and under what conditions should we expect firms to emerge?" Coase's answer was that when the transaction costs (social costs) of solving the problem of value production by the market using the price mechanism are higher than the organizational costs (private costs) of producing value through collaborative management within the enterprise, the enterprise will inevitably emerge. This is also known as Coase theorem. Coase became the founder of new institutional economics and legal economics with this theoretical basis. Since then, he has published two other masterpieces, namely in Payola in Radio and Television Broadcasting Journal of Law and Economics (1950) and The Federal Communications Commission Journal of Law and Economics (1959). Both of these works are trying to extract and answer the important questions of media economics from an economic perspective, namely how did a natural monopoly in broadcasting come into being? How does legitimacy manifest itself? To a certain extent, Mr Coase's three aforementioned books can be regarded as a relatively complete and enlightening prototype system of media economics theory, which indicates that we should explore more essential questions such as why does the media exist and What special value attributes does it have? These important questions, similar to those in The Nature of the Firm, together with Coase's original study of the Federal Communications Commission and the American broadcasting industry, led Ronald Reagan. Coase become the founder of media economics. The research direction he opened up for the study of media economics gave it necessary characteristics to become an independent subject.

Nowadays, the development of 5G, blockchain, artificial intelligence and other technologies have brought the media economy into an accelerated transformation period. Media economists are faced with more urgent responsibilities and missions to deeply explore and extract the fundamental issues of the media economy in order to better explore the future path of the development of the media economy.

A straightforward interpretation of why the media exists is based on Coase theory, namely due to the production and dissemination of media content products, there are relatively high market transaction costs (or fees), and when the media (media enterprise, utility-type media or We media) production and dissemination of the contents of organization cost is lower than the market transaction cost, the media must exist. Otherwise, when the market transaction cost is lower than the internal organization cost of the media, the media will change its existing form or even disappear. So, what is the value criterion or the measure scale of the change of form? In other words, what is the internal logic and value law of the media that changes its form or is replaced in order to reduce organizational costs? A further question is: when social and platform-based media continue to expand, the market transaction costs (social costs) and the internal organization cost of the media increase and decrease in the dame direction and continue to narrow the gap, especially at the same time and infinitely approach to zero, will the basic issues and research paradigm of media economics change? How will it change?

To study and answer these questions in-depth, we need to abstract and refine a theoretical fulcrum based on the value of most users and have the most extensive value applicability for the media economy, which can summarize the main value phenomenon and value law in media economy and is conducive to a more accurate and more profound description for basic questions and the basic definition of media economics.

The authors believes that one of the greatest characerics that distinguishes media content products from industrial products is that content products are time-consuming consumer goods, that is, the production, dissemination and consumption process of media content products are highly related to the time value.

The application of time value in media economics can be traced back to 1995. The American economist Goldhaber (1997) proposed that the new economic model brought about by the Internet should be called "the attention economy" rather than "information economy", because information is not a scarce resource in the Internet era, what is truly scarce is the attention of consumers. The media's competition for consumers' attention is essentially the competition for their media usage time. In Western media economics research, Albarran and Arrese (2003) compiled Time and Media Market, which contains 9 articles on the time value, emphasizing that time production is a limited and important resource for the media market. For the first time, the value of time in the study of media economics was elevated to a theoretical level. Both the production and consumption stages of media products are greatly constrained by the time factors. Their differences are not only in time elasticity –which is somewhat persistent as far as consumption is concerned- but also by other time factors that affect their production and distribution (Albarran and Arrese, 2003). Albarran and Arrese (2003) believed that time should be an important issue of media economics while it didn't get enough attention and scholarly examination at that time.

In the era of platform media, time has attracted more researchers' attention as the core attribute of media products. With the rapid rise of platforms, the competition for consumers' "exclusive eyeballs" among media is rapidly intensifying. Compared with traditional media, the platforms can draw more accurate pictures of consumers, thus providing more accurate advertising and gaining more advantages in advertising pricing (Anderson et al., 2018). Picard (2003) made a supplement to the attention economy of media: Today's competition among media companies is driven by the amount of time and money consumers spend on media, and the focus of the competition is on the two cores of the attention economy and the experience economy. The former lies in the media, marketers, politicians and others competing for consumers' limited time, while the latter is based on the idea that media companies need to organize satisfying and memorable experiences for consumers to generate loyalty and repeated engagement.

At the same time, the scope of media economics on the time value is also expanding, and the research on time value is no longer limited to the "attention economy" or the media's competition for the allocation of time. Information scheduling efficiency of the platform (Kanuri et al., 2018), platform's control of personal time of the (Wajcman, 2019), real-time information processing and decision-making of (Jabbar et al., 2020), users' media usage efficiency (Leftheriotis and Giannakos, 2014; Song et al., 2019) and other research topics related to time value have attracted more attention and consideration from researchers.

However, after the emergence of online platform media and bilateral market forms, the value of time can be effectively linked to users, media platforms, and various platform application design groups, and reasonably eliminate the non-essential differences between different content products such as news, firm and entertainment, information products, and different media forms such as TV, radio and Internet, and integrate them into a value whole organically. In fact, when we pay attention to and talk about the secondary transaction of content products, distribution efficiency, and user utility in the media economy, they all involve the usage and consumption of time. In other words, the value of time is intertwined in all value chains links of the media economy. However, because we have not raised the value of time to the

theoretical level of the special value form of media economics to considerate, the research on media economy has always lacked necessary and unified value scale or value currency, and has been reluctantly applying the value scale in general economic theory, and is trapped in the research paradigm of industrial economy. As a result, it is difficult to conduct direct and sufficient comparative research among different media forms, different communication forms and different content products. Moreover, it is also difficult for media economy and other industrial economies to truly synergize, leading to the evolution and innovation of the paradigm.

In this study, we set the basic problem of media economics as how to achieve the maximum user utility of information dissemination and interactive communication with the least time and the highest efficiency. In addition, the value objective of media economics is revised from "optimal" to "relatively good" in order to be more in line with the "bounded rationality" of economic human design.

Constructing a unified value scale and value system for the media economy: The currency of time

With the unified theoretical scale of "time value", we can deeply explore the important and special phenomena and problems in media economics. To the majority of the public, news is neither a rigid necessity nor a general consumer product, so, for a long time "news" has been regarded as a classic media content product, but it is not a typical tradable and priceable product (Marx, 1847; Lidan, 1986). Typically, it is either "headline news" under the specific unit price mechanism or "news agency mass production news" under the undifferentiated wholesale pricing mechanism, because news is based on the continuous extraction of the largest common divisor of recent social facts, in order to construct and consolidate the macro value system of a specific society, maintain normal social metabolism, and provide the necessary basic social order. This is far beyond the scope of the value attributes of the general industrial products and industrial economy, and it is also difficult to measure in terms of normal monetary value.

Of course, it is undeniable that news has a strong bearing function for commercial information such as advertisements in the process of mass communication, so that it has tradable commodity value and commercial attributes, therefore, people use the theory of "secondary transaction" as an intermediary, and directly borrow "currency" to understand and study the value transaction in the field of media economy, or use the idea of separating social value and economic value to separate monetized transaction and non-monetized transaction in the field of media economy. The idea of separating social value and economic value will be used to divide monetized and non-monetized transaction in the field of media economy into two.

In fact, the use of "currency" as the value currency of the media economy makes it impossible to explain many phenomena and behaviors of media economy that are not monetary transactions. Moreover, the sharing economy and bilateral markets brought about by digital network platforms have shown us that more and more mainstream facts and future trends of the media economy are beyond the scope of monetary transactions. More than ever, we need a unified value scale to synergize the old pattern and new forces in the field of media economy, so that more objective economic facts can be theoretically explained and reasonably predicted, and to gradually construct an innovative theoretical framework and research paradigm with deeper and wider explanatory power and applicability.

The digital online media under the time perspective, especially platform-based Internet media under the super-scale monopoly structure, creates a realistic opportunity for people to intuitively observe and analyze the special characteristics of media economy, namely how to intermediate the value of time to accomplish large-scale and multi-form value transactions in the media economy, including: monetized and non-monetized transactions. Examples of transactions in which users pay more time to view commercialized information as an alternative to replace monetary transactions are widely available; market-based and non-market-based transactions. A typical of non-market-based transaction is the large number of self-produced programs and their internal transactions in the media industry. The increasingly prevalent personalized customized content service is personalized transactions; equivalent and non-equivalent transaction. Platform medias take advantage of economies of scale and information asymmetry to obtain users' personal data for free and then apply it to paid media products, which is a widespread non-equivalent transaction; futures and spot transaction. The "membership" trading model on major video platforms, especially monthly, quarterly and annual members, is a kind of futures transaction in the media economy: wholesale and retail transactions. The "multichannel television service" provided by cable TV networks are a wholesale transaction, while the "on-demand service" on video websites is a retail transaction. Of course, the above are relatively more normalized and important transaction forms, there are other forms of value transactions, which can also be completed with time currency, because time is owned by everyone, and like life, it has the same absolute finiteness and scarcity of value carrier. In a sense, its uniqueness, irreplaceability and limited transaction nature are not possessed by currency, and it is a more complete and advanced form of value transaction.

RESULTS AND DISCUSSION

Value system and structural gradual change in media economy

In addition to the intuitive value transaction analysis, the time value scale can also help us observe and analyze a large number of important value attributes and their value laws that are not directly related to value transactions in the media economy.

Analysis system of media content products based on time value

Firstly, the special value attribute completely and directly affected by time value is used to analyze the synchronic and diachronic characteristics of media content products in the consumption process, especially the relative or absolute rigidity of content products in the consumption of time. Secondly, the general value attributes completely or indirectly affected by time value is used to analyze the effects and influences of media content products on users in the process of communication and consumption. It mainly includes:

The value externality brought by the attributes of media content products

Media products of different categories, especially news content products, bring uncertain value externalities to both individual users and the society as a whole. For

example, the news of real-time data of COVID-19 prevention and control, which helps to alleviate public anxiety and fear, shows some positive externalities. However, the financial crime news which contains many specific details may induce the potential financial crimes and show some negative externalities.

The value ambiguity brought by the attributes of media information products Because the content products themselves are made of the specific information, all the different categories of media content are a kind of information media content products. Their economic value and social value, as well as a blend between them, are difficult distinguish effectively, and when people pricing and trading based on their economic value, they tend to find the profound influence of social value of media information product. While this influence is difficult to clearly and precisely reflected in pricing and transaction, showing a high degree of ambiguous flexibility. For example: financial news and information products that play an important role in the capital market.

The value lag brought about by the attributes of media experience products

As a typical experiential product, media products are characterized by content product value that is non-standard and lagging due to user's perception which only happens after spending time on products. Advertisement is a very typical media experience product with value perception lag.

The uncertainty of utility brought about by the attributes of media public goods

Public goods or quasi - public goods are the basic attributes of media content products. However, due to the value perception lag and negative externalities, both the personal utility and the social utility of media content products as public goods will have great uncertainty. For example, the algorithmic recommendation of news media on various platforms, as a kind of implicit public product of media, causes information cocoon in the whole society, and thus brings a high degree of social utility uncertainty.

Conflicting goals brought about by the attributes of media culture products

All kinds of media products are cultural product because they have to deliver messages and comments by cultural symbol carriers such as letters, images, sounds and videos. Conflicts between the social value of cultural products as public goods and the economic value of cultural products as information products often occur. The typical example is the media products of culture and education for elementary education. At present, a large number of online education programs for elementary and intermediate schools in China prominently exist such conflicts. Lacking necessary role differentiating management, these cultural and educational media products excessively dilute the high-quality resources of mandatory primary education and turn them into market-based resources.

The value of media copyright goods is not closed

Not all media products are copyrighted, even for those copyrighted media products, it is difficult to accurately identify the value form of copyright due to products' multi-meanings and various forms, so products' value can only be defined as a collection of values. For example, the copyright of a character modeling of a media product, including hair style, color and costume design etc. is feasible, but the texture and color matching of costume design can hardly be regarded as independent part of copyright. As a result, the non-complete or to say non-enclosed value form and power beam become a prominent and universal characteristic of culture media products. For example, "ghost-animal area" a large number of secondary editing and processing of short video on Bilibili website, a platform media in China, is a typical example, and it has even become a symbol of Bilibili's cultural brand. Each of the relatively independent and interrelated value attributes and their actual performance mentioned above is directly or indirectly related to time value. They are all worthy of further research, including the research on the differences of similar content products in different media forms and communication regions. They jointly construct the theoretical framework of media content product value attribute analysis and provide the necessary basic concepts and theoretical knowledge for media economics. In fact, from the perspective of time value, media economics, with the help of the unified scale of time value, can not only deeply study the relatively abstract and static attribute characteristics, but also can try to analyze the relatively concrete and dynamic structural gradient problems. Among them, there is a very important problem, that is, under the unified perspective of time value, using the relative change of transaction cost and organizational cost mentioned in the Coase Theorem, to study and explain the existence of media and how it will grow and change.

When organizational costs and transaction costs decrease simultaneously

Albarran (2019) study of traditional media found that the American media industry moved toward centralization during 1970s- 1990s. Under this background, media companies were able to engage in economies of scale

(reducing their cost of ownership) and economies of scope (reducing cross-industry cost structure). This trend coincides with "simultaneous reduction of organization and transaction cost" which is discussed in this thesis.

At this stage, platform-based media is the primary driver of the evolution and expansion of media economy, and the main logic is to gradually eliminate the need for centralized production and large-scale dissemination of information in order to achieve a simultaneous reduction of organizational costs of media organizations and transaction costs in the process of social dissemination. The paradigm of media economy research will be continuously innovated and iterated in this process until both of them are infinitely close to zero, finally realize structural paradigm innovation and paradigm shift based on social communication platform and same value of time, where each highly personalized network node has maximum communication benefits.

The platform media in this thesis refers to a social media based on digital network, with peer-to-peer interactive communication and social platform service as the core model and value-added driving force, achieve survival and profitability based on platform economy and bilateral market, have at least one socialized large-scale first-choice user portal and successfully achieve a user scale of over 100 million. The first-choice user portal refers to the first-choice interface where users contact and disseminates information, and it is not only used relatively frequently, but also has an entrance that accommodates and leads to other information interfaces. It could be an application or website, such as WeChat or Facebook[iii], Baidu[iv] or Google[v]. It could be a smart hardware that combines content and software, such as an iPhone or Google glasses, a Tesla[vi] self-driving car, or a DJI[vii] drone. Baidu, Alibaba[viii] and Tencent[ix] in China and Facebook, Linkedin[x] and Google in the United States all are the largest user portals and are most representative platform-based medias in their home markets.

When the internal organizational costs of media organization change in the same direction as the market transaction costs, it means that media platforms are the main driving force behind a positive media economy, and they not only reduce the transaction costs of market-based division of labor and collaboration through social information dissemination and bilateral markets, but also reduce the organizational costs of content production and dissemination through technical assistance such as user content production and artificial intelligence. This will lead to a simultaneous reduction in transaction costs and organizational costs both inside and outside the enterprises, promoting the optimization of the media economy and the entire Internet + economic system, and enhancing the effectiveness and profitability of each participant.

Within this trend, we need to further examine the relative development speed of transaction and organizational costs: If transaction costs decrease faster, the space for media to survive and grow will shrink, otherwise media will get more space to survive and development. If the two keep decreasing year-on-year, what does it mean to approach zero infinitely? Will it be a pan- industrial development of media, or will media gradually and completely disappear? Of course, when studying the simultaneous reduction of transaction costs and organizational costs, we cannot completely ignore the possibility of simultaneous increase, although it would mean a regression of the media economy. However, hegemonism and unilateralism, which were once in a state of intensification during the deterioration of Sino-U.S. relations, have further lead to technology blockades and restricted capital flows, which may simultaneous increases transaction costs and organizational costs in the media economy. When studying the above trends, we need to theorize the specific connotations and conceptual boundaries of transaction and organizational costs in the context of media economics in order to further explore the more complex non-same direction changes.

When organizational costs and transaction costs change in different directions

Technological changes have reduced the production cost of media products, connected consumers via the Internet, and expanded the market size, but this does not mean that transaction costs are also reduced (Anderson and Waldfogel, 2016). On the one hand, the fixed (organizational) costs of media relative to market size continue to decrease with the development of Internet and platforms, and at the same time, media products contact with consumers is no longer confined to geographic locations and may mitigate the emergence of preference externalities. On the other hand, however, while new technologies reduce the production cost of basic products, media companies today need to compete for targeted consumers from all over the word, and reaching many consumers may lead to increased (transactional) costs.

Thus, due to technical, capital or institutional reasons, organizational and transaction costs inside and outside the media may show overall or partial changes in different directions, mainly including the following two situations:

Organizational costs decrease while transaction costs increase

Take the development of social networking platforms as an example. WeChat, which is developing in the direction of a fully functional platform, is an example of a significant reduction in organizational costs. Social media platforms represented by WeChat have made a fusion

and continuous structural innovation of conventional interpersonal, intergroup and mass communication, and constructed a new communication field where public and private intermingle and complement each other: a digitalized, networked public-private domain, thus organically combining government services in the public domain and personal financial services in the private sector, therefore, significantly reduce the coordination and organization cost of information production and dissemination within WeChat platform. However, the intensified competition among platforms has led to increased transaction costs of business users and individual users, for market-oriented selection, collaboration and migration between platforms, to the extent that the rule of law has to be adopted to curb unreasonable development or unjustified gains in the process of achieving super-scale monopoly by platform media, to prevent unfair competition and to effectively stimulate innovation.

Growth of organizational costs and reduction of transaction costs

Take the development of online video platform as an example. The online video platforms, which are continuously promoting the vertical integration of the value chain of the video industry, are all learning from Netflix[xi] in the United States, and are trying to integrate all the value chain links, such as video creation, production, dissemination, distribution and consumption on one platform. To this end, Netflix has invested heavily in video production and content recommendation algorithms, reversing the ratio of self-produced content to outsourcing content from 1:9 to 9:1, while achieving a virtuous circle of content production and content consumption through constantly optimization of algorithmic recommendations, significantly reduce the market risk of the traditional video industry and improve the return on investment ratio. However, at the same time, as it has internalized a large amount of human and material resources for film and television production, organization costs are continuously increased. Will this trend lead to a critical point of deterioration, that is, for large-scale investment in content production, it is difficult to obtain matching high returns through highly vertically integrated platforms, but it will drag down or even bring down this type of highly integrated online video platform?

RECOMMENDATIONS AND SUGGESTIONS

Paradigm alternation and innovation: progressive construction of decentralized network platform

When we assume that organizational and transaction costs are infinitely close to zero as the premise of reality, we can prospectively discuss the paradigm alternation or

innovation of media economics research. with the infinite realistic premise, we found that the new media economy with "Internet +" as the underlying logic and main structure is in essence to distribute the power of information production and dissemination to every socially active individual, who can work together with entity institutions to establish a new type of continuous decentralized communication system and its economic form. Regardless of the specific practice path, its ultimate goal is "highly personalized custom economy", one of the most important necessary prerequisites is "to remove the denial and weakening of personalized demand from the source of the value chain one by one, namely continuous decentralization: the integration of de-marketing, de-technology, de-socialization, from the starting point of the high respect for individuality, reshaping the construction process of society. At present, we are still far away from this goal, but the possibilities are slowly gathering.

Paradigm reconstruction based on the return of personal data sovereignty: Decentralization based on micro level

At present, both personal data and socialized data are distributed in the hands of governments and enterprises, and not in the hands of users. This is a global fact, which is inconsistent with Coases theory of property rights in the new institutional economics, which states that clear property rights facilitate the optimal allocation of resources and the continuous improvement of efficiency. In other words, in the modern media economic system, the lack of clarity of property rights over large amount of personal data inevitably leads to inefficient, high-risk and widespread misuse of personal data assets. This is obviously not conducive to the sustainable development of the media economy.

China, a global leader in the online economy, is taking the initiative to promote the return of personal data sovereignty and allowing every user to own their own personal data assets as soon as possible. In the long run, it will be more conducive to the sustainable development and advantage expansion of China's media economy and even the entire Internet + economy. From a theoretical perspective, this means from micro-level of the media economy the process of decentralization or multi-centralization is fully initiated to reconstruct the traditional economic structure, with enterprises or the government as the core interest system, and to form a user-oriented new system of the media economy, as well as a new paradigm and new process of media economic research.

Paradigm reconstruction based on the economics of law: The de-homogenization of rule of law bases

As each individual user starts to have more and more complete data sovereignty, the privacy of personal data,

social dissemination and transaction methods of personal data, etc. no longer applicable to the uniform legal standards and legal basis. It is more reasonable for each individual user to define his/her own data privacy according to his/her own personal preferences, and to set the structure and boundary of personal data privacy at the specific application level with the assistance of technical tools. For example, some users believe that name and gender should be included in the scope of privacy, while some users are willing to make their measurements and home address as public data, and become public instead of personal privacy data. Traditional legal thinking and legal tools are unlikely to respect the individual will of each of them and tailor the structure and boundaries of personal data privacy for everyone. However, on the intelligent digital network media platform, it is entirely possible to realize personalized personal data transactions and management according to the different data privacy boundaries of each person in the future, and no longer disregard individualized differences and simply use a unified value scale as a legal basis and standard. In this way, it will undoubtedly bring about a paradigm reconstruction of media economics based on the perspective of legal economics: to reconstruct the value transaction mode and law of media economy based on highly personalized data sovereignty.

Paradigm reconstruction based on research methods: Network analysis based on relevance

With the advancement and universalization of the decentralization process at the micro- level the media economy and the gradual weakening of homogeneity in the mainstream law, the research methods of media economics will inevitably shift from the quantitative analysis around causality to the network analysis focusing on correlation. As each individual in the media economy will have the ability and opportunity to participate in the formulation and implementation of value rules, and use relevance as the main logic to form the macro value law of the media economy.

Conclusion

From a historical point of view, the development of communication paradigm has long been in a lagging state of empirical observation and summary, and is seriously far away from interpretation of reality. This thesis tries to explain and discuss the reality of media economy, but it should go further to explain the content product attributes analysis framework based on the time value, as well as the fundamental change of our society and economy in coming future brought by the new technologies of block chain and artificial intelligence, especially the effect of artificial intelligence for humanity

and ethics. Moreover, the paradigm innovation of media economics research will be affected significantly by the national system and cultural differences to some extent (Noam, 2009), and this is barely discussed here. McLuhan's great masterpiece Understanding the Media has created a wonderful example: not only explained the reality, but also explored the future theoretically. After a critical analysis of media economics, this thesis points out that the core issue of media economics in the new media technology environment is how to achieve the maximum user utility of information dissemination and interactive communication with the least time and the highest efficiency. At the same time, this thesis also proposes to construct a unified theoretical value scale based on time value and a theoretical analysis framework based on the value attributes of content products. On this basis, this thesis elaborates on the media economics research paradigm innovation and iterative dynamic mechanism and gradual decentralized development path according to the relative changes of organization cost and transaction cost in the media industry, focusing on the return of the sovereignty of personal data, the revolution of the law related to individual differences and the changes of research methods based on the correlation analysis.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interest.

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[i] WeChat is a free application for instant messaging services launched by Tencent on January 21, 2011. It supports cross-communication operators and cross-operating system platform services. Users can quickly send free voice messages, videos, pictures and texts through the network.Good access to shared streaming media profiles and location-based social plugins such as 'Shake', 'Moments', 'Public Platform', 'Voice Notepad' and other service plugins.As early as the third quarter of 2019, WeChat has covered more than 96% of smart phones in China. The combined monthly active accounts of WeChat and WeChat have reached 1.151 billion, up 6% over the same period last year, and the daily active accounts of small programs have exceeded 300 million.

[ii] TikTok as a social software for short videos of music creativity was incubated by Toutiao in September 2016. Launched on September 20, 2016. Now it is a social platform for short videos for all ages.

[iii] Facebook was founded on February 4, 2004, headquartered in Menlo Park, California, USA.Facebook Messenger, a desktop chat software for Windows, was released on March 6, 2012.On November 12, 2019, Facebook announced the launch of Facebook Pay, a mobile payment service.In July 2020, the Forbes 2020 Top 100 Global Brands by Value was released, and Facebook was ranked fifth.

[iv] Baidu is an artificial intelligence company with a strong Internet foundation. Its strategic vision is to become the world's top high-tech company that understands users best and helps people grow."Baidu" originated 800 years ago from a poem written by Xin Qiji, a poet in the Southern Song Dynasty: "Baidu is a symbol of founder Li Yanhong's dream of using search engine technology to change the world.At present, Baidu has become a high-tech enterprise in China that has mastered the core technology of the world's cutting-edge science, and has made China, together with the United States, Russia and South Korea, one of the four countries that have the core technology of search engine in the world.

[v] Google Company was founded on September 4, 1998 by Larry Page and Sergey Brin. It is recognized as the world's largest search engine company [1].Google is a multinational technology enterprise based in the United States. Its business includes Internet search, cloud computing, advertising technology, etc. Meanwhile, Google develops and provides a large number of Internet-based products and services. Its main profit comes from advertising services such as AdWords.No. 2 on the list of the world's 100 most valuable brands in 2019.

[vi] Tesla is an American electric vehicle and energy company. It was founded on July 1, 2003 by Martin Eberhard and Mark Tarpenen. Headquartered in Palo Alto, Tesla mainly produces and sells electric vehicles, solar panels and energy storage equipment.The strategic vision is to provide pure electric vehicles within the reach of the average consumer and accelerate the global shift to sustainable energy.On May 13, 2020, Tesla was ranked No. 586 on the 2020 Forbes Global 2000 list.

[vii] Founded in 2006 by founder Wang Tao, DJI is a UAV brand owned by Shenzhen DJI Innovation Technology Co., Ltd.In 2012, it introduced the DJI Phantom 1, the world's first all-in-one aerial camera.On June 11, 2019, DJI was selected as one of the "2019 Forbes China's Most Innovative Companies".In December 2019, it was selected into the model 100 brands of the 2019 China Brand Power Ceremony.

[viii] Alibaba Group Holding Co., Ltd. was founded in 1999 by 18 people in Hangzhou, Zhejiang Province, led by Jack Ma.It operates a number of businesses in multiple fields, including: Taobao, Tmall, Juhuasuan, AliExpress, Alibaba International Exchange Market, 1688, AliMama, AliCloud, Ant Financial, Cainiao, etc.On September 19, 2014, it was officially listed on the New York Stock Exchange, creating the largest IPO in history.On November 26, 2019, Alibaba listed in Hong Kong stock market, with a total market value

of over 4 trillion yuan, becoming the "new king" of Hong Kong stock.In 2019, it was ranked 10th in Forbes Global Top 100 Digital Economy.

[ix] Tencent, whose full name is Shenzhen Tencent Computer Systems Company Limited, was founded in November 1998 by five founders Ma Huateng, Zhang Zhidong, Xu Chenye, Chen Yidan and Zeng Liqing.At present, it is one of the largest integrated Internet service providers in China and one of the Internet enterprises with the largest number of service users in China. Its diversified services include:Social and communication services such as QQ and WeChat /WeChat, social network platform Qzone, QQ game platform under Tencent Games, portal website Tencent, Tencent news client and online video service Tencent Video, etc.Tencent was listed on the main board of the Hong Kong Stock Exchange in 2004. In July 2019, it ranked 237th in the Fortune Global 500 list.

[x] LinkedIn (LNKD), founded in May 2003, is a professional social network based in Sunnyvale, California.The site is designed to let registered users maintain contacts they know and trust through their business contacts.As of May 2020, the total number of LinkedIn users has reached more than 690 million, with more than 50 million users in China.In October 2019, Interbrand ranked No. 98 in the Top 100 Global Brands.

[xi] Netflix(NASDAQ NFLX), founded in 1997, is a subscription streaming media company headquartered in Los Gatto, California. It used to be an online DVD and Blu-ray rental provider.Users will be able to rent and return a large number of physical DVDs from Netflix's inventory via free express envelopes.