Postprint of Research on Media Technology and Media Thinking

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Date: 2023-10-08T00:00:00+00:00

Abstract

"Science and technology constitute the primary productive forces" is a Marxist thesis advanced by Deng Xiaoping at the National Science Conference in September 1988. This thesis, on the one hand, enriched and developed Marx' s fundamental principle that "science and technology are productive forces," and on the other hand, on the occasion of the tenth anniversary of China' s reform and opening-up, admonished the nation that the path of reform and opening-up is the path of scientific development, the path of profound application of advanced technology, and the path of the victor. Media technology is information technology, specifically denoting information technology applied within the domain of communication media. Since the dawn of humanity, communication media utilized by humankind have principally comprised six categories: language media, print media, broadcast media, television media, internet media, and quantum media. Corresponding to the communication media employed by humanity, media technology also encompasses six categories: the "technology" of natural media formed by the human body, printing and papermaking technology, broadcast technology, television broadcast technology, internet media technology, and quantum media technology. Thinking represents the soul of all things—the contemplation undertaken by humans in economic and social life regarding certain phenomena or issues to realize their aspirations. Thinking constitutes a process, a process of human mental activity, which manifests primarily in three types: inspirational thinking, imagistic thinking, and abstract thinking. According to the actual conditions of China' s media economic development, the future development strategy for the media economy represents a systematic strategy, principally comprising the media lucid waters and lush mountains development strategy, media economic theory development strategy, and media convergence development strategy.

Full Text

Preamble

Abstract: "Science and technology constitute the primary productive force" — this Marxist assertion was put forward by Deng Xiaoping at the National Science Conference in September 1988. This proposition enriched and developed Marx's fundamental principle that "science and technology are productive forces," while also serving, on the tenth anniversary of China's reform and opening-up, as a reminder to the nation: the path of reform and opening-up is the path of scientific development, the path of deep application of advanced technology, and the path of the victor. Media technology is information technology, specifically referring to information technology applied within the field of communication media. Since the dawn of humanity, six major categories of communication media have been utilized: language media, paper media, broadcast media, television media, internet media, and quantum media. Correspondingly, media technology also falls into six categories: the "technology" of the natural human body, printing and papermaking technology, broadcast technology, television broadcasting technology, internet media technology, and quantum media technology. Thinking is the process by which humanity—the spirit of all things—reflects on phenomena or problems in economic and social life to realize its dreams. As a process of human mental activity, thinking manifests in three primary forms: inspirational thinking, visual thinking, and abstract thinking. Based on the realities of China's media economy, future media economic development strategy constitutes a systematic framework comprising three core components: the "lucid waters and lush mountains" media development strategy, media economic theory development strategy, and media convergence development strategy.

Keywords: media technology; media thinking; internet media thinking; quantum media thinking; "lucid waters and lush mountains" media strategy

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1. Media Technology and Its Application

The development of communication media depends on numerous factors, among which two are paramount: (1) from the perspective of media's self-development, the cognition and application of media technology serve as dynamic factors propelling media advancement; (2) from the perspective of economic and social development, human media thinking constitutes the fundamental factor driving media evolution. These two factors form an inseparable whole. The dynamic force of media technology does not spontaneously act upon communication media; its efficacy derives from society's and media professionals' scientific understanding and application of media technology. In essence, the impact of media technology depends on media professionals' conceptual framework of media thinking. Conversely, human media thinking concepts do not spontaneously form or exert influence on media; they depend on the depth and breadth of me-

dia technology' s application to media forms. In short, the formation of media thinking concepts and the realization of their guiding power hinge on the technological content of media forms and the degree of functional capacity development. Historically, China' s communication media technology has generally met the demands of its era, and China should qualify as a media powerhouse. However, its comprehensive media strength has yet to achieve this goal. Why? While many reasons may exist, the primary cause is the failure to form media thinking concepts aligned with modern media technology requirements. Evidently, the formation of scientific media thinking concepts and their guiding power align with the development and utilization of media technology—they constitute an integrated, mutually influential whole. Strengthening research on media technology and media thinking thus holds significant theoretical importance for media development.

1.1 Media Technology and Its Derivative Sources

Media technology is information technology, specifically referring to information technology applied within the communication media domain. Since humanity' s emergence, six major categories of communication media have been utilized: language media, paper media, broadcast media, television media, internet media, and quantum media. Correspondingly, media technology also comprises six categories: (1) language media technology, corresponding to language media formation and development, primarily refers to the "technology" of the human body' s five sensory organs (eyes, ears, nose, throat, and body). These are intrinsic bodily "technologies" formed naturally with the human body—innate media "technologies" unique to humans as communication media, also called human communication ontological technology. This technology possesses strong derivability, adaptability, innovativeness, and leadership, serving as the ultimate source for all media technology formation and development. (2) Paper media technology, corresponding to paper media formation and development, mainly includes printing and papermaking technologies. (3) Broadcast media technology, corresponding to broadcast media formation and development, primarily refers to technology that transmits sound symbols to audiences via electromagnetic waves or wires, including wired broadcast technology, wireless broadcast technology, and digital broadcast technology. (4) Television broadcast technology, corresponding to television media formation and development, mainly comprises cable television broadcast technology, wireless television broadcast technology, and digital television broadcast technology. (5) Internet media technology, corresponding to internet media formation and development, primarily refers to an information technology system developed and established on the basis of computer technology. This technological system mainly includes internet media hardware technology systems and internet media software technology systems. The hardware system consists of data storage technology, data processing technology, data transmission technology, and network communication technology. The software system comprises data collection software technology, data storage software technology, data retrieval software technology, data

analysis software technology, data application software technology, and data evaluation software technology. (6) Quantum media technology, corresponding to quantum media formation and development, constitutes a complex technological system. Quantum media, also known as quantum internet media, is a new communication medium created by borrowing photon technology on the basis of electronic internet media technology. Quantum media technology is thus photon media technology—the most advanced information technology currently applied in the communication media field.

How does media technology (note: here referring not only to media technology itself but to technology in general) emerge? Why can it continuously innovate and develop? The conventional answer is: the needs of social productive forces development and the requirements of communication media development. This answer is scientific and conforms to social development laws. But why is it scientific? The conventional explanation is: human cognition and grasp of social development laws. Communication media represent an instinctive tool for human information transmission. Before the emergence of artificial communication media (note: referring to derivative media), the human body itself served as the most primitive communication medium and remains an evergreen medium accompanying human communication development. Any communication medium that emerges in the course of human social development is a derivative medium of humanity' s evergreen communication medium. All media humanity has used are derivative media of this evergreen medium, and any new media that humanity will produce in the future will also be derivative media of this evergreen medium. As history progresses, on one hand, derivative media continuously multiply and their technological content continuously improves, making derivative media "increasingly distant" from the human ontological medium—that is, increasingly distant from the parent medium. People only recognize derivative media, "forgetting" the parent medium and "distancing" themselves from it. "Returning to one' s ancestral roots" is inevitable for media technology development, particularly necessary for strengthening cognition of its origin with the development of intelligent media technology.

1.2 Media Technology' s Functional Capacity is Proportional to Its Application Degree

In any historical period of human social development, science and technology represent the most advanced and vital dominant force. Science constitutes a worldview, an attitude, and a concept, revealing to people the essence, laws, and knowledge systems of the objective world, enabling behavior that is more realistic, perceptive, innovative, and abstract. Technology represents a craft, a skill, and a tool—scientific knowledge that generates benefits. Science and technology are inseparable, forming a whole: science addresses theoretical problems, operating primarily in unknown domains with strong logical and systematic characteristics; technology addresses practical problems, operating primarily in mature practical domains with strong operability. The notion that science and

technology constitute productive forces refers to technological power under scientific theoretical guidance. Technological behavior without scientific guidance is blind, and its technological power ceases to exist; similarly, scientific theory without technological power is pseudo-scientific, and its scientific power ceases to exist.

Science and technology demonstrate different functional capacities across industries or sectors, with these differences determined by the characteristics of the industries or sectors they serve. For instance, in the communication media field, science and technology' s functional capacity manifests in two aspects: industrial functional capacity and public service functional capacity. The industrial functional capacity of science and technology for communication media is determined by the industrial characteristics of media forms, while its public service functional capacity is determined by the institutional characteristics of media organizations. Overall, these two functional capacities are determined by the dual nature of communication media. Evidently, scientifically identifying industry or sector characteristics is key to effectively leveraging science and technology' s functional capacity.

The exertion of science and technology' s functional capacity is conditional, with this condition being society' s degree of cognition and application of this capacity. The extent to which science and technology' s functional capacity is realized depends on the degree to which society transforms it into direct productive forces. Higher societal cognition and application of science and technology' s functional capacity lead to higher probability of transformation into direct productive forces and greater impact on economic and social development. Conversely, the impact is smaller. Thus, the probability of science and technology becoming direct productive forces is directly proportional to society' s degree of cognition and application of their functional capacity.

Media technology is also a productive force—a viewpoint I proposed as early as 1987. However, due to historical reasons, its impact was not adequately realized at the time. It was not until 2008, with the promotion of Document No. 114 [2008] issued by the General Office of the State Council, titled "Notice on Issuing Two Regulations Regarding the Transformation of Operational Cultural Institutions into Enterprises and Supporting Cultural Enterprise Development During Cultural System Reform," that China' s media technology functional capacity was more effectively realized. Specifically, on one hand, Document No. 114 provided strong policy support for cultural system reform and cultural development; on the other hand, accompanied by the great development of internet media culture, media technology' s functional capacity in China achieved more effective expression. China's media development practice demonstrates that media technology holds significant importance for media development. However, the issue is no longer theoretical or about media technology itself, but a practical one: how to transform advanced media technology into direct productive forces. Based on the current state of China' s communication media, transforming advanced media technology into direct productive forces must start with

"people," continuously deepening media cultural system reform, implementing holistic media convergence, and ensuring the healthy development of cultural entities transformed from public institutions into enterprises. Starting with "people" means enhancing media professionals' technological awareness, particularly their awareness of emerging media technologies. Deepening media cultural system reform primarily involves exploring how to build China' s mainstream media and foster a community of various media forms with Chinese characteristics. Implementing holistic media convergence means "promoting convergence development, actively leveraging new media' s communication advantages, seizing opportunities, grasping rhythm, emphasizing strategy, focusing on timing, degree, and effect to reflect requirements of timing, degree, and effect." It also involves strengthening international communication capacity building, enhancing international discourse power, concentrating on telling China' s story well, optimizing strategic layout, and focusing on building flagship external propaganda media with strong international influence. "The key to convergence development lies in integration and oneness," not artificially eliminating certain communication media entities, and certainly not engaging in forced matchmaking.

1.3 Safety Management of Media Technology

Like other science and technology, media technology is a double-edged sword—capable of benefiting human society while also causing harm. The classic case of this double-edged nature is nuclear technology, which plays a tremendous role in human social development but whose destructive power is also unprecedented. Therefore, strengthening technology safety management is crucial for the safe use of science and technology, effective development and utilization of new technologies, and promotion of economic and social development. This macro-level technology safety management concept also applies to media technology safety management.

Media technology management refers to the overall planning, organization, command, coordination, and control of media technology equipment, media technology development, media technology transformation, media technology cooperation, media technology safety, media product development, media technical personnel and their allocation, and media technology institutional setup, based on the current state of communication media technology. Currently, to comprehensively strengthen media technology management, efforts should focus on eight aspects: (1) media technology application management; (2) media technology development management; (3) media technology innovation management; (4) media technology product management; (5) media technology cost management; (6) media technology market management; (7) media technology safety management; (8) media technology talent management. Among these eight aspects, the most important are media technology product management, media technology safety management, and media technology talent management. Implementing media technology product management involves, on one hand, supervising product quality, and on the other hand, effectively assessing media

technology safety from a product perspective, thereby adopting corresponding measures to improve media technology product quality. The focus of media technology safety management is inspecting and evaluating the status of existing media technology equipment, based on which maintenance and updates can be performed. Media technology talent management is key to comprehensively implementing media technology management—people lead in all matters. With talent, nothing is impossible and no work cannot be accomplished well. Therefore, the primary task of media technology management is managing people, educating people, and establishing people—this is both the primary task of media technology management and the primary task of all industries and sectors in economic and social development.

2. Media Thinking Modes and Their Types

Thinking is the process by which humanity—the spirit of all things—reflects on phenomena or problems in economic and social life to realize its dreams. As a process of human mental activity, thinking manifests in three primary forms: inspirational thinking, visual thinking, and abstract thinking. Human thinking methods are called thinking modes, which are primarily divided into two major types: linear thinking and non-linear thinking. Scientific thinking represents the conscious cognition and grasp of world patterns, serving as an intellectual weapon that helps people avoid detours, prevent errors, and achieve success in life' s journey. In real life or work, some people "laboriously commit errors" — most of these individuals lack scientific thinking or simply do not know how to think scientifically. Regarding China's communication media, it has experienced periods of prosperity and less prosperous times for one reason only: whether scientific media thinking has been highlighted. When scientific media thinking is emphasized, communication media flourish; otherwise, they do not, or even cannot flourish.

2.1 Media Thinking and Its Modes

In the article "Media Economic Community Theory," I defined media thinking as follows: "Communication media thinking is a professional mode of thinking that refers to the process by which people, based on their existing foundational knowledge, experience, and current state of communication media, discard non-essential attributes, comprehend essential attributes, and predict future development." Simply put, media thinking represents humanity' s systematic reflection on the nature and functions of communication media as a whole—that is, scientific thinking about the nature and functions of communication media.

Forty years of reform practice and theoretical research on China' s communication media have fully demonstrated that throughout the entire historical period of state existence, communication media possess two attributes: economic attributes and political attributes. Correspondingly, communication media have two functions: industrial function and public service function. This represents a law of media development that cannot be shaken. Media' s economic attributes

are determined by the inherent characteristics of media forms—their industrial nature—while media' s political attributes are determined by the characteristics of media institutions—their public service nature. The essence of media thinking is determined by the characteristics of communication media; therefore, thinking that reflects these characteristics is media dual-nature thinking. This essential thinking perspective on communication media has been conclusively expressed in many important documents of our Party and state. The 16th National Congress of the Party in 2002 explicitly proposed the strategy of vigorously developing cultural undertakings and cultural industries. On July 22, 2009, China's first special plan for cultural industry revitalization—the "Cultural Industry Revitalization Plan" —was adopted by the State Council' s executive meeting, with key promoted cultural industries including cultural creativity, film and television production, publishing and distribution, printing and reproduction, advertising, performing arts and entertainment, cultural exhibitions, digital content, and animation industries. In 2011, the Sixth Plenary Session of the 17th Central Committee was the first important central session convened by the Party Central Committee with the "cultural proposition" since the 17th National Congress in 2007, and also an important central session following the 14th Central Committee' s Sixth Plenary Session in 1996 to once again advance China' s cultural system reform. The Sixth Plenary Session of the 17th Central Committee adopted the "Decision of the Central Committee of the Communist Party of China on Major Issues Concerning Deepening Cultural System Reform and Promoting the Great Development and Prosperity of Socialist Culture." In 2013, the Third Plenary Session of the 18th Central Committee studied major issues concerning comprehensive deepening of reforms. To implement the spirit of the "Implementation Plan for Deepening Cultural System Reform" from the Third Plenary Session of the 18th Central Committee, the General Office of the State Council issued the "Notice on Issuing Two Regulations Regarding the Transformation of Operational Cultural Institutions into Enterprises and Further Supporting Cultural Enterprise Development During Cultural System Reform" (Document No. 15 [2014]) in 2014, revising and improving a series of important economic policies to promote cultural reform and development, providing strong policy support for a new round of cultural system reform and stimulating internal momentum for prosperity and development. On August 18, 2014, General Secretary Xi Jinping presided over the Central Leading Group for Comprehensively Deepening Reform meeting and adopted the "Guiding Opinions on Promoting the Integrated Development of Traditional Media and Emerging Media." At the fourth meeting of the Central Leading Group for Comprehensively Deepening Reform, he emphasized: promoting the integrated development of traditional and emerging media must follow the laws of news communication and emerging media development, strengthen internet thinking, adhere to complementary advantages and integrated development of traditional and emerging media, insist on advanced technology as support and content construction as fundamental, promote deep integration of traditional and emerging media in content, channels, platforms, operation, and management, focus on building a batch of new mainstream media with diverse forms, advanced means, and strong

competitiveness, and establish several new media groups with powerful strength, communication capacity, credibility, and influence, forming a three-dimensional, diverse, and integrated modern communication system. We must grasp both integration and management to ensure that convergence development proceeds in the correct direction. These important documents proposed by the Party and state represent beacons and guiding lights for leading China' s media professionals to establish scientific media thinking perspectives, and constitute the most classic exposition of regular guidance on the dual-nature thinking perspective of media.

Essential thinking about communication media represents a scientific interpretation of media development laws that cannot be shaken or changed. However, the specific thinking modes of this essential thinking perspective are flexible. The flexibility of media thinking modes must adhere to the principle of essential media thinking, which is fundamental to ensuring the realization of scientific media thinking perspectives.

2.2 Internet Media Thinking Modes

Internet media thinking is a single-medium thinking mode within the media thinking system. However, since internet media is a global and all-industry medium without regional or sectoral boundaries, internet media thinking represents a "global integration" media thinking. Specifically, internet media thinking is a process of comprehending, cognizing, and scientifically predicting internet media behavior through the navigation function of computer and internet technology. Simply put, internet media thinking represents comprehensive reflection on internet media behavior. "Navigation" originally meant guiding aircraft, ships, automobiles, and other mobile carriers from one location to another along certain routes using specific strategies or methods. Now, based on the characteristics of internet media thinking, the "navigation" function is borrowed to provide scientific and regular services for multiple, diverse, intersecting, overlapping, and complex internet media behaviors, thereby promoting the healthy development of internet media and more effectively leveraging its impact on economic and social development.

As an emerging communication medium built upon computer and internet technology, internet media thinking and its system remain in the initial stages of exploration. Based on experiences from nearly two decades of internet media practice in the 21st century and people' s understanding of internet media characteristics, the current internet media thinking system is mainly composed of "Internet Plus" media thinking, big data media thinking, zero-distance media thinking, transparent media thinking, and cloud computing media thinking.

"Internet Plus" Media Thinking. Analyzing the characteristics of "Internet Plus" media thinking reveals that: (1) "Internet Plus" media thinking is, on one hand, a state-mandated media thinking mode, and on the other hand, a state-guided strategic media thinking mode. (2) "Internet Plus" media thinking

is both a form of internet media economy and a national strategy to promote overall media convergence. (3) "Internet Plus" media thinking represents both cross-boundary convergence of media forms and reshaping convergence of economic forms (referring to non-media economy). The characteristics of "Internet Plus" media thinking reveal its essence: a comprehensive contemporary human strategic thinking system composed of overall media thinking, grand culture thinking, new economy thinking, industrial thinking, and public service thinking, with internet media thinking as its axis. "Internet Plus" media thinking represents internet media culture thinking with Chinese characteristics for the new era. Its fundamental capacity lies in scientifically optimizing internet media resource power, scientifically leveraging internet media cultural power, and scientifically concentrating internet media technological power during economic and social development, thereby comprehensively integrating internet media power into all fields and sectors of economic and social life to continuously advance productivity levels.

Big Data Media Thinking. Big data is a model that uses massive data (information) analysis to grasp patterns of object movement and thereby implement planning and decision-making. The essence of big data media thinking is reflection on the big data behavior model, characterized primarily by: (1) fully, massively, efficiently, and diversely developing and utilizing information resources; (2) truly, accurately, and rapidly grasping information resources and their circulation patterns to facilitate scientific decision-making; (3) effectively leading people to consciously implement innovation, thereby forming new concepts, creating new models, utilizing new technologies, and promoting comprehensive development of undertakings, industries, and other sectors.

Zero-Distance Media Thinking. The zero-distance concept originated from traditional media—specifically, a daily news live broadcast program called "Zero Distance" launched by Jiangsu Province Radio and Television Station' s City Channel in 2002. After its launch, the program, guided by the principles of "reporting Nanjing, serving Nanjing, and publicizing Nanjing" and "close to reality, close to life, and close to the masses," won audience favor and achieved good economic benefits. Although "Zero Distance" was created by traditional media, its characteristics showed it was more suited to internet media requirements. Consequently, people used the zero-distance concept to conduct in-depth reflection on internet media characteristics, forming a new thinking mode—zero-distance media thinking. The main characteristics of zero-distance media thinking are: (1) truly achieving the organic combination of information transmission immediacy and closeness; (2) truly achieving absolutely deep information transmission; (3) truly achieving "zero distance" between communication media and audiences; (4) truly achieving information transmission popularization; (5) truly achieving the widest recognition of the "people' s news" concept among industry professionals and audiences. The characteristics of zero-distance media thinking revealed in this article are distilled from the experience of "Nanjing Zero Distance" and the characteristic of internet media to shorten distances between people. As internet media develops and practices evolve, new characteristics of zero-distance

media thinking will continue to emerge.

Transparent Media Thinking. "Transparency" is a characteristic highlighted in internet media marketing practice. In traditional commercial activities, people emphasized "channel is king" —stores sold what customers bought, making sellers rather than buyers the "gods." With internet media development, "internet merchants" (note: commonly but unscientifically called "e-commerce" ; strictly speaking, the full term should be "internet media commerce") have become the main theme of contemporary commodity exchange. Transparency in product quality, price, and characteristics has become an important trait of internet merchants, and transparent media thinking has formed under these conditions. The formation of a thinking mode signifies that its concepts, awareness, and habits have become social consensus. Regarding internet merchants, their emergence has not only greatly increased social purchasing power but also made "online shopping" a consumption habit for consumers, particularly young ones.

Cloud Computing Media Thinking. Cloud computing refers to a payment model that uses super-high-speed computing capacity computers to integrate massive information resources and promote resource sharing. Cloud computing media thinking adopts the cloud computing model to rapidly transform massive information resources into usable resources for various users. The characteristics of cloud computing media thinking are mainly: (1) high accuracy of information resources. Cloud computing integrates massive information with a solid foundation, yielding more accurate conclusions than traditional sampling analysis. (2) Wide service scope. Cloud computing uses super-high-speed computing capacity computers to provide services for users within a relatively broad scope. (3) Fast information resource circulation speed.

2.3 Quantum Media Thinking Modes

Quantum media is a new communication medium built upon quantum physics. Quantum physics is an emerging micro-physics that has grown out of macrophysics, playing a significant role in promoting in-depth research on the physical properties of macroscopic objects. Therefore, establishing quantum media thinking modes requires, on one hand, studying the characteristics of quantum physics, and on the other hand, noting the foundational theories of object physical properties provided by classical physics.

"Quantum media is quantum internet media, a media form that uses quantum entanglement theory as its foundation and borrows photon technology to achieve quantum information transmission." Quantum media thinking is the process of comprehending, cognizing, and predicting the future development of quantum phenomena based on quantum media's foundational theories. Simply put, quantum media thinking is scientific reflection on quantum phenomena—namely, scientific reflection on quantum entanglement phenomena, wave-particle duality phenomena, and uncertainty phenomena.

Human cognition of the world is a long process that can be divided into many stages. Regarding the physical world, human cognition can be divided into three major stages: pre-Newtonian physics, Newtonian physics, and quantum physics. Regardless of which stage human cognition of the world is in, they all share the most essential thing—the world is material. This is unshakable and unchangeable; otherwise, humanity would lose its foundation and space for existence.

The Newtonian thinking formed during the Newtonian physics stage is a macroscopic thinking, mass thinking, and inclusive thinking—a thinking that brings benefits to the masses and ordinary people, also called mass scientific thinking. The essence of Newtonian thinking is human ontological thinking, formed through abstraction of human sensory organs' (the five senses of eyes, ears, nose, throat, and body) touch, perception, and experience. It protects humanity, enabling understanding and cognition of the objective world. However, the objective world understood by humanity is only the objective world within their daily life scope. This means Newtonian thinking only solved humanity' s cognition of the objective world in the pre-information technology era; it did not solve problems in the information technology era that have been or will be cognized by humanity, nor could it solve humanity' s new or deepened cognition of the objective world in the post-information technology era.

The quantum thinking formed during the quantum physics stage is microscopic thinking, elite thinking, and deep thinking. Its essence is abstract thinking based on high technology. Today' s quantum media thinking is a deep media thinking that includes three microscopic thinking modes: quantum state thinking, wave-particle duality thinking, and paradox thinking. To scientifically grasp quantum media thinking, one must thoroughly understand three important theories in quantum physics: (1) quantum entanglement theory; (2) wave-particle duality theory; (3) uncertainty theory.

3. Future Strategic System of Media Economy

Over the past four decades, China' s media economic theory has evolved from non-existence to formation and ultimately to a complete media economic theory system with Chinese characteristics, consistently developing along a red thread. This red thread consists of the different development strategies formulated by our Party and government for China's communication media during different historical periods of reform and opening-up. China' s media development strategy has now formed a strategic system with Chinese characteristics, mainly comprising three types: (1) the trial strategy for media industry development, namely the "public institution, industrialized operation" media development strategy from the early reform and opening-up period; (2) the media cultural industry development strategy, namely the cultural industry revitalization special plan from the mid-reform period, during which operational media undertakings in China' s media system began transforming into industries and media cultural industries entered the planning scope of China' s grand cultural industry system;

(3) the "Internet Plus" media development strategy, namely the "Internet Plus" action plan, which represents both the mature period of reform and opening-up and the important strategy for media economic development in the new era of socialism with Chinese characteristics.

The realization of strategic objectives is a process with strong continuity. Therefore, when one strategic objective is achieved, new strategic objectives must follow. These new strategic objectives serve two functions: first, testing the implementation status of the previous strategic objective; second, formulating specific strategies for achieving new strategic objectives. Media economic development strategy is no exception and must adhere to the principle of strategic continuity. Based on the realities of China' s media economic development, future media economic development strategy is a systematic strategy mainly composed of the "lucid waters and lush mountains" media development strategy, media economic theory development strategy, and media convergence development strategy.

3.1 "Lucid Waters and Lush Mountains" Media Strategy

"Lucid waters and lush mountains"is a natural phenomenon referring to beautiful rivers and mountains. On August 15, 2005, during his inspection of Yucun in Anji County, General Secretary Xi Jinping proposed the concept that "lucid waters and lush mountains are invaluable assets." On September 7, 2013, in his speech at Nazarbayev University in Kazakhstan, he again emphasized: "We want both lucid waters and lush mountains, as well as invaluable assets. We would rather have lucid waters and lush mountains than invaluable assets, and moreover, lucid waters and lush mountains are invaluable assets."Since then, the concept of "lucid waters and lush mountains" has been applied to many aspects of economic and social life, particularly extensively in environmental protection and ecological civilization fields. "Media lucid waters and lush mountains" is an image-based concept borrowed to elaborate media dual-nature theory after 2013.

The media dual-nature theory represents the most prominent research achievement in China' s media economic theory over the past four decades, serving as the core, fulcrum, and soul of media economic theory. The media dual-nature theory breaks through traditional single-nature media theory, clearly pointing out media' s dual characteristics: economic attributes and political attributes. Correspondingly, media also have two functions: industrial function and public service function. Other media attributes and functions are derived from these two attributes and two functions.

The formation of media dual-nature theory was a process roughly divisible into two stages: the process from proposal to theoretical system formation, and the process of comprehensive implementation. The formation of the media dual-nature theoretical system underwent the following process: (1) Proposal of the "four-level operation" policy. In 1983, based on the spirit of the 12th Party Congress and central directives on radio and television work, the 11th National

Radio and Television Work Conference summarized experiences from the 10th conference and proposed to "walk one's own path," "center on propaganda," "use news reform as the breakthrough," "operate programs and mixed coverage at four levels," and "develop diversified operations and broaden revenue sources." (2) Implementation of the "four-level operation" policy. With its implementation from 1983 to 1987, national radio stations increased from 118 in 1982 to 386, television stations from 47 in 1982 to 366, advertising revenue increased year by year, and cable television began extending from cities to rural areas. My "media dual-nature" concept started and developed rapidly under these conditions. (3) Public dissemination of the "media dual-nature" concept. In 1989, as China's reform and opening-up deepened, radio and television undertakings developed rapidly while radio and television economy achieved certain breakthrough progress, gradually revealing media's economic attributes. Under these background conditions, I wrote "Exploring the Economic Attributes of Radio and Television Undertakings," summarizing research results on media dual-nature theory since 1986. (4) In 1996, during his inspection of *People's Daily*, Jiang Zemin clearly stated: "Comrades at People's Daily must do well in both propaganda and operation," later summarized as: "First, propagate; second, operate." (5) In 2002, the 16th Party Congress explicitly proposed the strategy of vigorously developing cultural undertakings and cultural industries, marking societal recognition of "cultural dual-nature" thinking and "media dual-nature" theory. The former analyzed macro-level culture, while the latter analyzed specific media culture, or micro-level culture.

After the 19th Party Congress, the comprehensive implementation of media dual-nature theory entered the practical operation stage from the theoretical and policy guidance stage, marked by: (1) The arrival of a new media economy era. In 2017, the 19th Party Congress announced the arrival of a new era of socialism with Chinese characteristics, and correspondingly, China's characteristic media economy has entered a new era after its revolutionary and reform eras—the media economy new era. (2) Formation of new media institutions. In March 2018, the Central Radio and Television Station was established under the leadership of the Publicity Department of the CPC Central Committee (note: formed by merging the former China Central Television [China International Television], former China National Radio, and former China Radio International). In July, new media groups—Liaoning Press and Media Group and Liaoning Radio and Television Group—were established. These new media institutions mark new steps in advancing media convergence in China. (3) The arrival of the holistic media convergence era. On January 25, 2019, the Political Bureau of the CPC Central Committee held its 12th collective study session on the all-media era and media convergence development. General Secretary Xi Jinping pointed out: promoting media convergence and building all-media has become an urgent task we face. We must use information revolution achievements to promote in-depth media convergence development, strengthen mainstream public opinion, consolidate the common ideological foundation for the whole Party and people of all ethnic groups to unite and struggle, and provide powerful spiritual strength

and public opinion support for achieving the "Two Centenary Goals"and realizing the Chinese Dream of the great rejuvenation of the Chinese nation.

What is the relationship between media dual-nature theory and "lucid waters and lush mountains" ? As mentioned earlier, "lucid waters and lush mountains" is an image-based concept borrowed to elaborate media dual-nature theory. Lucid waters and lush mountains are symbols created by nature to explain great rivers and mountains. Water and mountains form an inseparable whole—without lucid waters, there are no lush mountains; similarly, without lush mountains, there are no lucid waters. This natural phenomenon, this natural law, is understood by all who live in or frequently visit mountainous areas. The media dual-nature theory elaborates that media economic attributes and media political attributes together build a complete new media entity—neither can be absent. The laws of media survival and development have long told people: media economic attributes cannot be separated from media political attributes, for without political attributes, communication media would not be communication media; similarly, media political attributes cannot be separated from media economic attributes, for without economic attributes, communication media would lose their foundation for survival and development. Media dual-nature theory provides a precise overview of media development laws, yet not everyone cognizes this law, often unconsciously opposing media economic attributes and media political attributes, seriously affecting the functional capacity of China' s communication media. Strengthening study and training on media dual-nature theory is therefore highly necessary.

3.2 Media Economic Theory Strategy

Over the past four decades, China' s media economic theoretical research has basically completed three major scientific tasks along with continuous deepening of reform and opening-up: first, revealing basic laws of media development and creating a media economic theory system with Chinese characteristics; second, revealing media' s dual-nature characteristics and creating a fulcrum theoretical system for media economic development—the media dual-nature theoretical system; third, revealing the origin of human communication activities and proposing the basic concept of human ontological communication. Future media economic theory strategy is a media economic theory strategy that promotes full functional capacity of communication media based on existing media economic theory. Specifically, future media economic theory strategy is mainly composed of a "Three Majors, One Co-development" strategy comprising grand culture, grand media, great wisdom, and co-development.

Grand culture, grand media, great wisdom, and co-development constitute a new development model formed during media economic development in the information technology era, also called the "Three Majors, One Co-development" model. In this model, "grand culture" is the premise and foundation for the model' s formation and development, reflecting the model' s historical and cultural heritage, modern cultural innovation, and the cultural and scientific nature

of the model' s construction. "Grand media" is the core of the model' s formation and development, reflecting communication media' s position, role, and path for demonstrating functional capacity within the "model" system. "Great wisdom" is the soul of the model' s formation and development, reflecting the essence of "grand culture" and "grand media" and the finiteness and infiniteness of "great wisdom' s" functional capacity. "Co-development" is the driving force source for the model' s formation and development, reflecting coordinated development within the "Three Majors" theoretical system, coordinated development between the "Three Majors" functional capacity development and various sectors of economic and social development, and coordinated development between the "Three Majors" and the requirements for media industries in the new era of socialism with Chinese characteristics, thereby fully leveraging the functional capacity of grand culture, grand media, and great wisdom in economic and social development to promote great development and prosperity of China' s media economy.

3.3 Media Convergence Development Strategy

The original meaning of convergence refers to the process by which similar objects form new objects under the action of specific "external forces." This process essentially involves discarding non-new object elements and selecting and gathering new object elements into a whole. For example, the process of iron ore becoming iron through heating is a complete convergence process. The "external force" that promotes the gathering of iron elements inside iron ore is thermal energy; when this thermal energy reaches a certain degree, iron elements naturally separate and gather to form iron. Media convergence is the process of forming new communication media under the action of modern media technological power.

Modern media technological power is the "external force" that promotes media convergence. This "external force" is objective, and its promoting effect on media convergence is independent of human will. Complying with the requirements of this promoting force from modern media technology enables media convergence, and communication media develop and become strong; otherwise, they lose their living space. Thus, media convergence is a law-governed phenomenon that cannot be violated.

How then can we adapt to the requirements of media convergence laws? Transforming concepts, establishing scientific media thinking concepts and selecting scientific media thinking modes, and comprehensively implementing media convergence development strategy are fundamental principles ensuring the healthy development of communication media. In 2010, in the article "Media Convergence is the Necessary Path for Mass Media Development," I analyzed the integration of traditional media and new media: "The fundamental difference between traditional media and new media lies in the technology used in media operation. The differences in media technology determine the differences in media entities. In terms of media content, new media and traditional media

are consistent and have no differences. In this sense, so-called new media is media supported by new technology. Network technology is not the patent of new media. Because network media is supported by network technology, it is called new media. If traditional media is also supported by network technology, then traditional media becomes 'new media.' The blurring of boundaries between traditional media and network media determines the objectivity of media convergence, indicating the arrival of the media convergence era."

Media convergence is a process that gradually moves toward convergence through competition-cooperation and integration. This means media convergence roughly undergoes three stages: competition-cooperation stage, integration stage, and convergence stage. (1) **Primary stage of media convergence.** Competition-cooperation is the primary stage of media convergence, achieving elementary media convergence through a method combining both competition and collaboration. In market competition, there are no permanent enemies. Under market economy conditions, the activity purposes of any business entity are identical: "profit." Rather than "two armies confronting each other, both suffering damage," it is better to "converge and collaborate" to achieve win-win results. This conclusion has been slowly realized by numerous business operators after experiencing intense "big fish eat small fish, small fish eat shrimp" competition: under market economy conditions, "life-or-death" competition between peers does not result in one win and one loss, but both sides losing. Because achieving absolute advantage in fierce competition requires powerful industrial resource support, yet media industries growing up in China' s special environment all have limited resources. Only by taking the path of collaborative convergence and achieving media resource aggregation can they remain invincible in fierce market competition and truly achieve win-win results. Why? Because competing in collaboration and collaborating in competition can effectively achieve media resource integration. For their own survival, various media entities will inevitably focus human and material resources on their most competent business areas, leaving other areas to others. This cooperation can manifest as complementary advantages and resource sharing, or as defect compensation and risk sharing, or as reducing transaction costs, or as jointly competing in markets. Cooperation and convergence methods are diverse, including hardware, software, market, and management aspects. (2) **Intermediate stage of media convergence.** Integration is the intermediate stage of media convergence and a model for media resource allocation. Integration is a media convergence model created by media professionals during media industry development to meet social productive forces development requirements and better satisfy media product consumers' needs. The main contents of this media integration model include: media institution integration, media market integration, media development strategy integration, media resource integration, media management integration, media technology integration, media capital integration, media value chain integration, media advertising business integration, media brand integration, and media system integration. Although media integration content is quite extensive, it has not

broken out of the basic framework of the media combination model; it is merely a transitional model in the transformation from combination to convergence. (3) **Advanced stage of media convergence.** Media convergence is the advanced stage achieving holistic media convergence and the necessary path for modern media industry development. The realization of holistic media convergence undergoes a development process from start to maturity, which itself cannot be accomplished overnight and requires stage differentiation. The Chinese government' s decision to use "triple-network convergence" as an entry point to promote media convergence development is a correct decision. Its implementation not only promotes the development of China' s radio and television, telecommunications, and internet media industries but also holds important significance for China' s holistic media convergence.

Currently, China' s media convergence has entered its advanced development stage. Ensuring healthy media convergence development requires comprehensive and scientific implementation of media convergence strategy. To this end, five issues should be emphatically resolved: (1) implement precise decision-making by scientifically combining macro strategic thinking with specific operational strategies; (2) follow media convergence laws by organically combining administrative promotion with media convergence law effects and media technological power with media market effects; (3) emphasize media professionals' quality development by transforming their traditional thinking into media convergence thinking, their single-medium thinking into superimposed integrated media thinking, and their single-attribute thinking into dual-nature thinking; (4) scientifically detail media convergence strategic deployment to effectively resolve core or key problems in the convergence process, promote rapid media convergence development, and continuously improve benefits brought by media convergence; (5) actively prevent the emergence of "media convergence whirlwinds" and correct all behaviors violating media convergence laws.

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Note: Figure translations are in progress. See original paper for figures.