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Postprint: A Study on the Path of Visual Reporting Technology Empowering Chinese Modernization

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

Abstract

[Purpose] Images possess the power to foster confidence, build consensus, and mobilize society. The primary objective of this article is to investigate how visualization reporting technologies, which employ images as their narrative language, can integrate into, serve, and ultimately empower Chinese-style modernization. **[Method]** Drawing upon theories from the philosophy of technology and combining them with the practice of visualization reporting in China, this article analyzes feasible pathways for Chinese journalism to leverage visualization reporting technologies to empower China's modernization. **[Results]** News media can orient the value purpose of visualization reporting technologies towards the high-level opening up of Chinese-style modernization by satisfying the resonant demands of the Four Confidences and providing visualized expressions of China's high-quality development practices. **[Conclusion]** Through the construction of social memory and the catalyzing of a community with a shared future, visualization reporting technologies possess powerful social mobilization capabilities in empowering Chinese-style modernization.

Full Text

Research on the Path of Empowering Chinese-Style Modernization Through Visualization Reporting Technology

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Abstract

[Objective] Images possess the power to build confidence, forge consensus, and mobilize society. This study examines how visualization reporting technology, which uses images as its narrative language, can integrate into, serve, and ultimately empower Chinese-style modernization. **[Method]** Drawing on theories of philosophy of technology and analyzing China's visualization reporting practices, this article explores feasible pathways for Chinese journalism to leverage visualization reporting technology to empower China's modernization. **[Results]** News media can direct the value orientation of visualization reporting technology toward the high-level opening up of Chinese-style modernization by meeting the resonant demands of the "Four Confidences" and providing visual expression of China's high-quality development practices. **[Conclusion]** Through the construction of social memory and the catalysis of a community with a shared future, visualization reporting technology demonstrates powerful social mobilization capacity in empowering Chinese-style modernization.

Keywords: Visual Journalism; Visualization Technology; Chinese-Style Modernization; High-Quality Development

CLC Number: G236.3

Document Code: A

Article ID: 1671-0134(2023)05-017-05

DOI: 10.19483/j.cnki.11-4653/n.2023.05.003

1. The Resonant Demands of Chinese-Style Modernization: Confidence Building Through Visualization Reporting

Confidence is more precious than gold. The "Four Confidences" in the path, theory, system, and culture of socialism with Chinese characteristics, proposed by General Secretary Xi Jinping at the 95th anniversary of the Communist Party of China, represent the essential route for the Chinese people to achieve Chinese-style modernization under the Party's leadership. Visualization reporting technology transforms the great achievements of Chinese-style modernization into vivid, intuitive images, thereby fostering these Four Confidences while inspiring the broad masses to unite and strive for the advancement of Chinese-style modernization, making it the greatest concentric circle of the Chinese nation.

W.J.T. Mitchell argues that an image is an object that reproduces each representation in concrete form. In contemporary society, images have become a material force in social life, much like economic and political forces. From this perspective, Walter Benjamin of the Frankfurt School contended that technology visualizes the world. News visualization, aided by technology, belongs to the broader visualization of the world and serves the contemporary project of building a community with a shared future for mankind. Simultaneously, as a result of evolving communication technology, it coordinates spiritual exchange

with the construction achievements and material exchanges on the great journey of national rejuvenation, thereby forging consensus on China's high-quality development. Building a community with a shared future is an essential requirement of Chinese-style modernization, while high-quality development has yielded fruitful results for Chinese-style modernization. In this context, researching how visualization reporting technology empowers Chinese-style modernization represents both the media industry's historical responsibility to fulfill its social duty—making it urgently significant—and an inherent component of developing contemporary Chinese philosophy of technology, holding important practical value in the context of mediated socialization.

1.1 Visualization Reporting Technology Builds Confidence in the Path

Visualization reporting technology presents the Communist Party of China's century-long struggle and its great practice of advancing with the times through visual symbols, appealing to intersubjectivity and embedding confidence in the socialist path with Chinese characteristics deep into the soul of the Chinese nation. Intersubjectivity refers to the mutual relationships and interactions between subjects, with language use being its essential activity. Visualization reporting technology significantly enhances reporting efficiency, enabling journalists and audiences, as well as audiences among themselves, to efficiently transmit meaning and thereby inspire confidence in the path. For instance, CCTV News Channel's "Data on China's Economy: Racing to Work, Opening New Chapters Through Practical Action," broadcast on February 1, 2023, used data to vividly illustrate China's rapid economic development—railway passenger volume exceeding 10 million for seven consecutive days during Spring Festival, box office revenue surpassing 10 billion yuan with over 200 million viewers in January 2023, and automotive manufacturing revenue reaching 9,289.99 billion yuan in 2022. Journalists' pride in China's economic achievements, conveyed through visualization technology, transformed into enthusiastic discussions among news users and firm confidence in the socialist path with Chinese characteristics.

1.2 Visualization Reporting Technology Builds Confidence in Theory

As Niklas Luhmann, author of *Risk Society*, understood it, confidence refers to the taken-for-granted attitude that familiar things will remain stable. Marshall McLuhan of the Media Ecology School distinguished between "hot" and "cold" media based on information clarity and user participation—hot media are highly processed and easily accepted without much thought. Visualization reporting technology expresses complex information and grand narratives through simple, clear data and charts, pushing news reporting toward the extreme of high-definition information. In this sense, visualization technology transforms news reporting from "cold" to "hot," making it easier for audiences to understand and accept the scientific and truthful nature of Marxist theory, particularly the theoretical system of socialism with Chinese characteristics. Xinhua's data news "Data on Southwest Zhejiang Today: Revolutionary Old Districts Rush

Toward Common Prosperity” uses scientific data, smooth animations, and rhythmic effects to tell the story of happy lives and common prosperity in Southwest Zhejiang’ s revolutionary old districts, vividly illustrating General Secretary Xi Jinping’ s vision of common prosperity and strengthening the people’ s theoretical confidence.

1.3 Visualization Reporting Technology Builds Confidence in the System

Sociologist George Mead developed Charles Cooley’ s concept of the looking-glass self, noting that what matters for our self-concept is not how others actually evaluate us, but how we imagine they evaluate us. Visualization reporting technology serves as a bridge, presenting the connection between individual struggle, happiness, and the advancement and superiority of the socialist system with Chinese characteristics in intuitive form. This enables citizens to establish strong system confidence at the levels of self-identity, group identity, and national identity. People’ s Daily Online’ s “Graphic News” channel pursues “intuitive graphics and clear explanations,” using lively graphics and fresh layouts to make constructive journalism with Chinese characteristics concise, visually impactful, and deeply resonant. For example, in the “Xi’ s Two Sessions Time” column, the report “Two Sessions Concern—Rattan Ladder, Steel Ladder, Staircase: The Road to Cliff Village is Renewed!” juxtaposes General Secretary Xi Jinping’ s speeches with national poverty alleviation achievements in a visually striking two-column layout. The report emphasizes that over 9.6 million registered impoverished people have relocated to new homes, with more than 6,100 new or renovated primary schools and kindergartens, over 12,000 hospitals and community health service centers, more than 3,400 elderly care facilities, and over 40,000 cultural activity venues. This vividly demonstrates the tremendous advantages of the Communist Party of China and the socialist system with Chinese characteristics in poverty alleviation.

1.4 Visualization Reporting Technology Builds Cultural Confidence

Individual identity can be decomposed into biological, economic, cultural, and political identity, but its essence is cultural identity. Visualization reporting technology can transform abstract culture into vivid image symbols, subtly converting news reports into cultural identity and thereby fostering group cultural confidence. The micro-documentary “China is Hip,” produced by People’ s Daily International Department and People’ s Video, adopts the perspective of foreigners in China, integrating Sichuan face-changing, opera performances, ancient Chinese texts, traditional gardens, and the bond of Liu, Guan, and Zhang to shape an image of Chinese culture as fun, affectionate, and profound. Such soft reporting not only helps disseminate China’ s voice through edutainment in an era of scarce attention but also strengthens domestic cultural identity through interaction with others. This “silent influence” of visualization reporting technology practice both builds mass confidence in the advanced nature of

socialist culture with Chinese characteristics and strengthens pride in being part of socialist China.

2. The Journalistic Logic of Technological Consensus Building: Visual Expression of China's High-Quality Development

Visualization in journalism began with experiments by *The Guardian* and *The New York Times*. There is an iconic relationship between images and reality—they share the same visibility, with images extracting reality's visible features. Visualization technology makes news reporting's extraction and observation of reality highly persuasive, accurate, and watchable. Bernard Stiegler, a leading French philosopher of technology, argues that technology is human essence—that tools invent humans, or rather, humans invent themselves through technology's "exteriorization." Similarly, visualization reporting technology has significant practical meaning in China, exteriorizing the journey, achievements, and grand blueprint of Chinese-style modernization. Therefore, using advanced communication technology to focus on the visualization of China's high-quality development and forge consensus on Chinese-style modernization is an inevitable choice for the Chinese nation's self-realization under the Communist Party of China's leadership.

2.1 Datafication of High-Quality Development Reporting: Objectivity and Science

China's visualization reporting primarily exists in the form of data journalism. Using data to demonstrate the great achievements of high-quality development during Chinese-style modernization has become a common practice for news organizations including People's Daily Online, Xinhua, Xinhua News Agency, CCTV, and Yangshipin. "Data Talks" has even become a frequent phrase in visualization reporting titles to indicate solid research foundations. CCTV's "Data on China" stands out among these, making decades of development achievements leap onto the screen with just a few data points. Gansu Satellite TV's "Data on Two Sessions: Beautiful China Shows New Looks," broadcast in March 2023, uses objective, rigorous data based on big data mining to fully illustrate China's high-quality development practice. The report uses data such as "energy consumption per unit of GDP decreased by 5.1%, carbon dioxide emissions dropped by 14.1%, average concentration of fine particulate matter (PM2.5) in prefecture-level and above cities fell by 27.5%, and the proportion of excellent surface water bodies nationwide rose from 67.9% to 87.9%" to demonstrate China's significantly improved ecological environment with sufficient evidence, clear arguments, and high credibility.

Data mining and organization form the core of visualization reporting but are time-consuming. With continuous iteration of artificial intelligence technology, the efficiency of this reporting work will increase exponentially. Consequently,

the quantity of visualization-supported news reporting is expected to greatly improve, better serving the needs of reporting on China's high-quality development.

2.2 Visualization of High-Quality Development Data: Youth-Oriented Aesthetics

Educating and cultivating a new generation of youth for Chinese-style modernization is both an era demand and a historical responsibility. Against a backdrop of scarce audience attention, news reporting targeting youth aesthetics is not uncommon. Visualization reporting, based on enormous workloads, widely employs images adapted to youth aesthetic preferences to attract, please, and ultimately guide young people. Therefore, both “Data on China” and “Data on Two Sessions: Beautiful China Shows New Looks” adopt bright color schemes, rhythmically strong narratives, and discourse systems favored by youth. French philosopher François Lyotard championed images as forces that can strengthen the flow of life and desire. In practice, youth-oriented visual aesthetics have become essential textual features of visualization reporting technology, especially as youth frequently lead trends in popular culture and online topics. Using youth-oriented visual aesthetics not only inspires young people to compete in the workplace and serve their country, effectively countering the negative “lying flat” ideology in youth subcultures, but also vividly transmits young people's quest for dreams to broader audiences, creating a virtuous cycle between China's high-quality development practices and visualization reporting.

2.3 Visual Analysis of Data Images: Consensus Building

Visual analysis of data images involves reasoning, argumentation, and value extraction based on data mining, image processing, artificial intelligence, and human-computer interaction technologies. Ernst Kapp, the German philosopher of technology who proposed the “organ projection theory,” argued that “humans continue to produce themselves in tools” —that humans use tools to produce themselves. Visualization reporting technology, as a tool for human self-production, both expresses the Chinese nation's need for group identity during Chinese-style modernization and serves as a prosthesis to strengthen this identity. Western journalism's professionalism, emphasized since the “muckraking movement,” faces increasingly severe challenges and tends toward bankruptcy in the new media environment. Against this backdrop, constructive journalism, which emphasizes active engagement in solutions and runs counter to journalistic professionalism, is flourishing overseas. This shares common ground with the Party spirit stance and people-serving purpose emphasized by socialist journalism with Chinese characteristics—both stress the value rationality of news production: consensus building.

Human identity is essentially a cultural identity—a community member's recognition, approval, and endorsement of community culture, which generates a sense of belonging. Visual analysis thus becomes a necessary component of

visualization reporting for consensus building, serving as the purpose of data mining and image processing. Gansu Satellite TV's "Data on Two Sessions: Beautiful China Shows New Looks" naturally leads to the conclusion that "the people increasingly enjoy blue skies, white clouds, green mountains, and clear waters" based on sufficient data argumentation, using MG animation to interpret Chinese-style modernization's pursuit of harmonious coexistence between humanity and nature. Through news reporting, the ideals and concepts of Chinese-style modernization become shared knowledge, emotions, and beliefs among all social members—what Durkheim called "collective consciousness," or group consensus.

3. The Value Orientation of Visualization Reporting Technology: High-Level Opening Up

As a hot topic at the 2023 Two Sessions, "high-level opening up" is central to Chinese-style modernization. Under the Communist Party of China's leadership, high-level opening up has enabled brilliant achievements in Chinese-style modernization. General Secretary Xi Jinping emphasized in the 20th Party Congress report that China must "adhere to high-level opening up and accelerate the construction of a new development pattern with domestic circulation as the mainstay and domestic and international circulations reinforcing each other." Therefore, orienting visualization reporting technology toward the needs of high-level opening up is the value destination of technology empowering Chinese-style modernization.

3.1 Social Memory Construction for High-Level Opening Up

Paul Connerton noted that participants in any social order must share a common memory: to the extent that social memory is contested, its members cannot share experiences or visions. He argued that memory is rarely a matter of simple recall; it is not a replication problem but a construction problem. Constructing social memory of Chinese-style modernization's high-level opening up through news reporting not only recalls and summarizes the great achievements and indomitable spirit of the Communist Party of China and the Chinese people on this journey but also intervenes in contemporary understanding of high-level opening up.

Thanks to the Communist Party of China's leadership, Chinese-style modernization has achieved brilliant successes, with people's living standards and happiness indices rising exponentially. These tremendous developments manifest in countless aspects of social life, and visualization reporting technology simplifies this complexity through visual stimulation, presenting it as graphics, charts, animations, videos, and H5 pages that withstand scrutiny. For example, a visualization video report titled "Data on China's 2022 Social and Economic Development Report Card," published on Xinhua News Agency's WeChat official account, listed multiple data points including "GDP of 121,020.7 billion

yuan, up 3.0% year-on-year.” This enables citizens to integrate their fragmented experiences of individual happiness into a cognitive framework of macro-level high-level opening up, generating strong conscious and voluntary commitment to Chinese-style modernization.

3.2 Catalyzing a Community with a Shared Future for High-Level Opening Up

“When the river is full, small streams benefit.” High-level opening up enables individuals and families to share in the happiness and joy of China’s rapid social and economic growth. Thomas Hobbes viewed society as a mechanical aggregation of numerous individuals, with the state binding them into a community through coercive and non-coercive forces. Visualization technology-enhanced news reporting serves as a soft power that vividly demonstrates how high-level opening up in Chinese-style modernization is vital to individual destiny. When the populace forms a universal emotional identification with high-level opening up, they unite as a community with a shared future for Chinese-style modernization, striving tirelessly for the Chinese nation’s rejuvenation.

In the new media era, diversified and fragmented communication trends have swept through, impacted, and fractured mass culture. In this context, American scholar Andrew Keen argued that the carnival of netizens has degraded Benedict Anderson’s imagined community into the crisis of an anarchic society. Mainstream new media must rely on the news matrix formed by visualization reporting technology to efficiently unite the masses into a community with a shared future for high-level opening up through social memory construction. Although many news organizations have adopted visualization reporting technology to showcase the high-level development of Chinese-style modernization, the quantity remains limited due to the complexity of the technology. With advances in AI technology, we can reasonably anticipate a dramatic increase in visualization reporting, providing better opportunities for the Chinese nation to form a community with a shared future for high-level opening up.

3.3 Mass Mobilization for High-Level Opening Up

In the view of Russian economist Kaufman, identity is an organizational mobilization force with political stance. Citizens’ identity as members of a community with a shared future for high-level opening up is a necessary condition for their engagement in Chinese-style modernization. Today, in the relationship between individuals and society, what class one is born into is less important than what identity one embraces, as behavior is the direct result of identity. News organizations use visualization reporting technology to loudly call for mass participation in high-level opening up. This mobilization has two aspects: first, through the visual analysis section at the end of reports, inspiring news users to act on the ideals of high-level opening up in Chinese-style modernization; second, using big data push technology to deliver mobilizing information alongside reports

that catalyze the community with a shared future for high-level opening up as a complete data package to users.

Bernard Stiegler argued that innate physical deficiency is humanity's first nature, while prosthetic technology that compensates for physical deficiency is humanity's second nature. From this perspective, continuously evolving visualization reporting technology is an important prosthesis for uniting hearts and gathering strength in Chinese-style modernization during the era of fragmented communication. Integrating visualization reporting technology into Chinese-style modernization, serving it, and empowering it represents technology's proper role in serving humanity.

Funding: Henan Provincial Soft Science Project “Research on Science Popularization Capacity Building of County-Level Converged Media Centers Under the ‘One Body, Two Wings’ Concept” (232400410088); Henan Provincial Department of Culture and Tourism Research Project “Research on the Impact of Internet Celebrity Experience Sharing on User Tourism Behavior Under Short Video Social Backgrounds” (2023LL056).

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(Responsible Editor: Li Jing)

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