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Postprint of Research on the Impact of New Technologies on Media Landscape and Digital Transformation

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Abstract

The advent of information technology has transformed the way people access information and has also exerted profound influence on the media industry. In the past, media served as the primary channel for the public to learn about current affairs and obtain information. However, with the development of network technology, the information landscape has become increasingly complex, as channels for information creation, sharing, and dissemination have multiplied, and media is no longer the primary source of information for the public. Under these circumstances, media must appropriately introduce new technologies, transform their business models, and achieve digital development. Therefore, this paper explores the impacts of emerging technologies on media business models and how media should undergo transformation, to provide accurate guidance for media development in the information environment.

Full Text

Research on the Impact of New Technologies on Media Industry Formats and Digital Transformation of Media

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Abstract: The advent of information technology has transformed how people access information while profoundly impacting the media industry. Traditionally, media served as the primary channel for the public to understand current affairs and obtain information. However, with the development of network technology, the information landscape has become increasingly complex, with more channels for information creation, sharing, and dissemination, and media is no longer the main source of information for the public. In this context, media organizations must appropriately introduce new technologies to transform their

industry formats and achieve digital development. This paper examines the impacts of emerging technologies on media industry formats and explores how media should transform to provide a clear direction for media development in the information environment.

Keywords: New technologies; Media industry formats; Digital transformation; Dissemination channels; Operation models

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The arrival of new technologies has brought profound changes to the information landscape, significantly impacting media industry formats. Media is no longer the sole medium for information dissemination and sharing, as the public now has access to multiple channels for information gathering. In this new industry environment, how media should adapt and make appropriate changes to better meet industry development needs and public information demands has become a serious topic for practitioners to consider.

1.1 Diversification of Information Dissemination Channels

New technologies have made information dissemination simpler and faster. In the new media environment, platforms provide users with abundant information materials and creative tools, such as various editing and graphics software. These digital tools have substantially reduced the difficulty of producing video or text content, enabling ordinary users to master these production tools after only brief training and begin creating professional-quality information content, which they then disseminate through online channels [1]. The lowered creative threshold has led to a dramatic increase in self-media outlets, and ordinary information users can now become information creators with the support of new technologies. Consequently, the space for traditional media has been further compressed, and competition intensity within the media industry has gradually intensified.

1.2 Expansion of Pseudo-Environment Construction Bias

The diversification of information dissemination channels has also expanded pseudo-environment bias. The pseudo-environment refers to the phenomenon where media professionals edit and embellish information materials during the dissemination process, resulting in processed information that cannot be considered 100% identical to the original materials. The information environment

received by audiences is actually a pseudo-deviated environment that diverges from the real environment—a mirror information environment highly similar to the original event environment but formed through mass communication. In the information dissemination process, reducing pseudo-environment bias has always been a goal for media professionals, as only by minimizing bias can original events be presented objectively [2].

In today's society, supported by new technologies, the proliferation of information materials has brought both positive and negative impacts to media. The positive effect is that media now has abundant content and no longer faces the embarrassment of having nothing to report. The negative effect is that the addition of new technologies has led to the differentiation of information dissemination mediums, providing the public with more channels to obtain information. Different information publishers incorporate varying subjective intentions and informational stances when creating content, resulting in increasingly diverse and complex mirror information environments. With complex information sources, it becomes difficult to trace primary information sources, making it impossible to verify the authenticity of obtained materials. This industry format increases the probability of public misunderstanding and leads to the erosion of media authority.

1.3 Fragmentation of Media Information Dissemination Process

Fragmentation arises from the dual factors of new technology application and changes in social operation patterns. Although new technologies provide the public with ports to publish information, self-media cannot achieve comprehensive, holistic reporting like professional media due to limitations in resources, manpower, and time. Therefore, when processing information materials, they often break information into several parts and release them in segments to reduce resource investment for each piece of information [3]. Meanwhile, changes in current social operation patterns have accelerated people's life rhythms and reduced leisure time. Under such fast-paced lifestyles, the time people can spare for consuming information is limited, making them more inclined to choose short, concise information. Consequently, the fragmented dissemination model better meets contemporary public information needs.

The combined effect of these two factors has transformed information dissemination from traditional complete event presentations into a jigsaw-like fragmented structure. Although this approach satisfies public information acquisition needs under fast-paced conditions, the inability to obtain complete information makes it easy for the public to misunderstand information events. This dissemination method dilutes information authenticity.

1.4 Changes in Information Timeliness and Volume

The upgrading of sharing technology has made information easier to exchange and disseminate, allowing media in today's society to access more information

materials than ever before. The acceleration of information dissemination enables audiences to obtain desired content more quickly. While this satisfies the public' s right to know, express, supervise, and participate, it also causes the heat and freshness of news materials to disappear or be replaced more easily [4]. News communication emphasizes timeliness; once timeliness passes, public interest in news content drops sharply, and subsequent dissemination struggles to meet audience needs. Timeliness gives news its value, but in the new media environment, the efficiency of event information transmission has increased, information sharing speed has accelerated, and the speed of attention loss for materials has also increased. If news cannot be disseminated efficiently, its value for public opinion guidance will rapidly disappear.

In summary, new technology development has provided people with more convenient information reading services, but it has also plunged traditional media into development difficulties. To secure a position in such intense competition, information media must carefully analyze the current state of newspaper information under the background of new technology development. On this basis, media must have clear directionality to better adapt to the new media competition landscape and facilitate successful digital transformation.

2.1 Enhancement of Media Scene Power

As information release ports increase, the public' s considerations when selecting information access ports have also grown. Based on this industry ecology, media must demonstrate its information characteristics and highlight its differences from ordinary media to attract audiences to choose it as their primary information source [5]. The enhancement of scene power is a transformation approach born from this thinking. Scene power refers to the sense of presence that information brings to audiences—the higher the scene power, the stronger the audience' s sense of presence, the greater their ability to empathize with those involved in events, and the clearer their understanding of the whole story. Scene power construction has high requirements for resources and technology, representing an advantage that professional media has over self-media. Media can use new digital technologies such as modeling technology and VR technology to build immersive 3D scenes and set up interactive options that allow audiences to advance event progress according to their choices. As audiences gradually understand the full picture of events through their choices, they gain a sense of participation, making their immersive experience more prominent and increasing their willingness to select media providing high-scene-power information as their fixed information reception port.

2.2 Consolidation of Information Authority

Media primarily reports on socially significant events that reflect social reality. Therefore, information planning must both reflect actual conditions and highlight underlying meaning and value, providing warnings and insights that embody the authoritative identity of public opinion guides. With new media

development, modern information materials are not only diverse but ubiquitous. In the streaming media environment, even a small piece of information material may become a public focus through the push of networks and traffic [6]. No matter how information media content forms or platforms change, the most critical factor is that information content should align with user needs—content that the public cares about and is willing to spend time viewing—thereby enhancing user “engagement.” This engagement manifests on two levels: first, information should be closely related to users’ lives; second, dissemination should rely on social sharing, enabling users to actively join discussions on information topics and share content, which better facilitates the expansion of dissemination scope.

Traditional media influence has led current media units to merely select, process, and polish event materials without emphasizing the importance of information planning. Therefore, media units should not “curl up” behind the scenes but should actively strengthen information material collection motivation, leverage their human resource advantages, go to the front lines, participate in the entire process of social event excavation, better grasp event truth, highlight event essence, understand audience psychology, and present the true face of events to the public. This approach both reduces pseudo-environment bias and enhances public trust in media, demonstrating authority distinct from ordinary media through authenticity and objectivity.

2.3 Construction of Communication Circle Operation Models

With information technology support, media can deeply develop news publicity resources. However, during the publicity and reporting process, although the new media environment provides more information materials, homogenization remains severe. This is because the new media environment relies on internet technology, which has changed people’ s lifestyles and information acquisition habits, establishing a new media ecology that breaks down industry barriers and blurs boundaries between users, enterprises, and media [7]. The rapidly changing network communication environment has created an era characterized by commercial socialization and user circle formation, yet news publicity with distinctive features and traits remains scarce. News communication content needs to enrich expression methods, widely apply various forms, and enable works with creative ideas and exquisite production to be effectively disseminated and reach people’ s hearts.

In the network communication environment, various new media have grown rapidly, causing living spaces among media to continuously shrink. More and more traditional media are accelerating integration with new media, forming vertical and horizontal connections to create new situations of resource sharing and column co-construction. This not only achieves cost control but also greatly improves content quality, forming a comprehensive, three-dimensional media model across fields, media, and regions. To this end, media should leverage network technology advantages to build a community-based information dissemination circle. For example, using the social functions of network plat-

forms and Apps to bind media audience groups together through information push and sharing, allowing platform or App users to complete information interaction through mutual sharing, forwarding, and commenting on interesting content.

Media information exchange circles differ from the acquaintance-social model of traditional social Apps, focusing instead on developing stranger-social models. Various topics of information push attract originally unacquainted people to establish social relationships through information sharing and commenting. Information exchange circles transform the traditional personal-connection social model into an interest-based social model, where users spontaneously organize social activities based on shared interests. Relying on social functions provided by Apps, users communicate through various content forms including text, voice, video, and pictures around common interest points. Additionally, information exchange circles should support users in self-generating information content. Users can create and share information on their personal homepages, attracting other readers with common interests to establish social relationships and form their own interest-based social circles. Each user is both an information reader and an information creator, which solidifies media audience groups and lays a foundation for long-term media development.

2.4 Innovative Construction of Information Services

In the new era, the number of self-media outlets has increased, competition in the information market has intensified sharply, and content production has begun to show strong convergence. Homogenized content makes it easy for the public to experience aesthetic fatigue and causes media market bases to shrink. Therefore, innovating information service models and building differentiated information service mechanisms is necessary.

To innovatively construct information services, media must address two aspects: first, incorporate public trust foundations into information services, making targeted adjustments according to public demand preferences to ensure information services are differentiated, distinctive, targeted, and not blind; second, excavate and utilize media resources to enhance technological capabilities and create industry advantages unmatched by other practitioners.

For example, self-media relies entirely on new technologies to provide information services as non-professional media. Practitioners themselves lack the ability to create information product content, and their information content is either obtained from other channels for secondary dissemination or processed from original information products to create new information products for dissemination. Professional media, benefiting from human and material resource advantages, can directly go to hot event sites to obtain first-hand materials on-site and create exclusive information products. This exclusive advantage helps media better attract audience attention in the competitive media environment. Therefore, media should fully leverage this advantage and combine it with new

technologies, such as launching Vlog-style on-site interviews that allow audiences to no longer watch reporters narrate events from a bystander perspective but instead peek into entire event developments from the reporter's first-person perspective. This approach enhances audience personal experience and immersion, motivating audiences to actively select specific media for information based on their need for differentiated information experiences.

2.5 Promoting Integration of Old and New Media

In the new era, information dissemination channels and forms will present diversified development trends, requiring updates to traditional media production processes and promoting comprehensive integration through old-new alternation. This involves pushing for factual integration. The so-called information fact is the process of event interactivity and diversity development. Under media convergence development, the information release threshold has been directly lowered—any user can become a leader in information media and present fragmented dynamic events with the help of modern information and network technologies. In this context, compared with new media emerging under new technology support, professional media does not have full dependence on new technologies. In addition to online information, media can also create offline information, combining online and offline channels and continuing to promote paper-based information while providing digital information. This helps professional media care for older audiences who dislike using the internet or are unwilling to obtain information online while expanding youth audiences, creating a larger market base than new media.

In summary, media should start from meeting the needs of different audiences and should not blindly pursue digitization while abandoning traditional information mediums. Instead, media should fully integrate different mediums to expand information service coverage to every age group and social class, providing differentiated information services for various information recipients that align with their reading preferences, needs, and habits, thereby creating differentiated information services that enable media to gain more attention and a larger market audience.

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

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