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AI-Driven Convergent Newsroom Models for Advancing Media Economics in Vietnam's Digital Transformation

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Abstract— *This article investigates the theoretical underpinnings, global trajectories, and national specificities of convergent newsroom development. By emphasizing the integration of print, broadcast, electronic, and multimedia journalism, the study demonstrates how artificial intelligence reshapes news production, distribution, and monetization. Building on international experiences, it highlights five critical solutions: strategic investment in digital infrastructure, reskilling of human capital, adaptive regulatory frameworks, collaborative innovation ecosystems, and AI-enabled revenue diversification. These measures, when systematically implemented, are argued to provide a sustainable pathway for strengthening Vietnam's media economy in the digital era.*

Keywords— *AI-Driven, Convergent Newsroom, Vietnam, Digital Transformation.*

I. INTRODUCTION

The emergence of convergent newsroom models has fundamentally reshaped the operational logic and economic underpinnings of contemporary journalism. The concept of newsroom convergence, which denotes the systematic integration of traditional and digital journalistic platforms, has been widely recognized as both a technological imperative and an economic necessity in the digital age. At its core, convergence entails the amalgamation of print journalism, broadcasting, online news portals, and multimedia communication into a single synergistic system capable of maximizing resource utilization, diversifying revenue streams, and enhancing audience engagement. Rather than perceiving print, electronic, and audiovisual platforms as competing silos, the convergent newsroom regards them as complementary channels that, when integrated, produce a more resilient and adaptive media ecosystem.

The theoretical foundation of newsroom convergence lies in the principle of economies of scope, whereby different media formats share common resources such as editorial staff, technological infrastructure, and distribution channels to reduce costs and increase efficiency. The model also reflects network externalities, as the cross-platform dissemination of content expands audience reach and creates higher value for both consumers and advertisers. In practice, convergence has materialized in diverse forms, ranging from the integration of print and online newspapers to fully-fledged multimedia hubs where broadcasting, online streaming, and interactive communication coexist. For instance, in many developed economies, national media conglomerates have established convergent structures that integrate television, radio, and digital outlets under one editorial roof, thereby achieving greater editorial consistency and strategic coherence.

The benefits of newsroom convergence extend beyond cost optimization. Converged newsrooms enable more dynamic storytelling by combining text, image, video, audio, and interactive infographics in a single package, thereby catering to the increasingly fragmented consumption patterns of audiences. They foster journalistic innovation through cross-functional collaboration and knowledge exchange, while simultaneously strengthening competitiveness in a highly saturated media environment. Importantly, convergence creates opportunities to develop diversified business models, including subscription-based services, targeted advertising, content syndication, and cross-platform branding strategies. This evolution holds significant implications for media economics, as it directly addresses the pressing need to secure financial sustainability for news organizations in the era of declining print revenues and volatile advertising markets.

Against this backdrop, artificial intelligence (AI) has emerged as a transformative force that not only complements but also accelerates the dynamics of newsroom convergence. AI-powered applications, including automated news writing, real-time content recommendation, predictive analytics for audience behavior, and intelligent resource allocation, have already demonstrated their capacity to redefine the journalistic value chain. While AI-driven automation raises legitimate concerns regarding editorial quality and ethical accountability, it simultaneously presents opportunities for enhancing productivity, reducing operational costs, and enabling journalists to focus on higher-value investigative and analytical tasks. The convergence of AI with newsroom models has therefore been increasingly conceptualized as a strategic response to the challenges posed by digital disruption and shifting audience expectations.

Globally, a discernible trend has emerged in which leading media organizations deploy AI not only to optimize content production but also to personalize user experiences, thereby strengthening loyalty and monetization. In countries such as the United States, the United Kingdom, and South Korea, AI-driven newsroom convergence has been embraced as an indispensable strategy to sustain competitiveness in digital media markets. Lessons from these international experiences

highlight the importance of regulatory support, ethical frameworks, and continuous professional training in ensuring that technological adoption contributes positively to media economics. For Vietnam, where journalism is undergoing rapid transformation under the pressures of digitalization, such insights provide valuable guidance for building indigenous models of AI-enabled newsroom convergence that align with the nation's socio-economic and cultural characteristics.

The significance of this study lies in its potential to inform both academic debate and policy formulation regarding the future of Vietnam's media economy. By analyzing the conceptual underpinnings of convergent newsrooms, assessing the role of AI in accelerating convergence, and evaluating the contextual opportunities and constraints within Vietnam, the research contributes to a more nuanced understanding of how media organizations can achieve sustainable growth. It also sheds light on the implications for journalism education and professional training, given the urgent need to cultivate digital competencies and AI literacy among media practitioners. More importantly, the study provides an evidence-based foundation for policy makers to design supportive frameworks that balance technological innovation with journalistic integrity, thereby ensuring that the pursuit of economic viability does not undermine the democratic and cultural functions of journalism.

In sum, the integration of AI into convergent newsroom models represents both a challenge and an opportunity for Vietnam's media industry. While the risks associated with automation, ethical dilemmas, and market disruption cannot be overlooked, the potential benefits in terms of efficiency, innovation, and economic sustainability are equally compelling. This research therefore positions itself at the intersection of media economics, digital transformation, and technological innovation, aiming to offer theoretical insights and practical recommendations that can guide Vietnam's transition toward AI-driven newsroom convergence in the digital era.

The paper is structured as follows. The introduction is followed by the literature review of related studies, then the applications of AI in journalism at some major media corporations and lessons for Vietnam. The next part of the study is to propose some policy implications towards AI application to develop converged newsrooms in Vietnam in the digital transformation period in the next time.

II. Literature Review

Sichach (2024) argued that the convergence of media and AI had revolutionized the way content was produced and consumed, leading to increased efficiency, personalization, and new challenges for the media industry. Media convergence could be understood through three categories: technological convergence, media management convergence, and cultural convergence. Each category highlighted a different aspect of how media industries had evolved and integrated. Technological convergence refered to the blending of telecommunications, broadcasting, information technology, and entertainment into one unified system (Bores et al., 2003). The ability of various platforms-such as broadcast, satellite, and cable networks-to offer similar services exemplified this trend. The rise of streaming services like Netflix, which used the internet to distribute content traditionally delivered via television or cinema, underscores this shift (Dave, 2011). Additionally, consumer devices such as smartphones, which combined telecommunication, entertainment, and computing functions, demonstrated how technology had converged to create versatile tools for both media creators and consumers.

For the situation of Norwegian newsrooms, Petersen & Cappa (2024) aimed to provide a snapshot of the current degree of AI integration in journalistic practices. Their findings showed that there was widespread optimism about AI's potential to transform journalistic practices. Larger newsrooms had made significant advancements in AI integration, while smaller newsrooms generally lagged behind. However, it was the smaller newsrooms that could benefit the most from AI-driven efficiency, often relying on enthusiastic individuals to drive innovation despite having fewer resources. The study emphasized the importance of establishing ethical guidelines, providing continuous training, and fostering supportive leadership.

Recently, a study for Zimpapers and Alpha Media Holdings of Mugadzaweta (2025) showed that Artificial Intelligence (AI) had changed the face of journalism in many ways. Newsrooms across the world were deploying AI in various aspects of news gathering distribution and creation. Many newsrooms were also at different stages when it came to AI adoption. The research findings revealed that AI adoption in Zimbabwe's newsrooms was still in its nascent stages and much of its utilization was of more of individual effort than organization's strategy. While there was growing recognition of AI's potential to revolutionize journalism, several challenges hindered its widespread adoption. Key findings on challenges included the absence of formal policies and guidelines for AI usage within newsrooms, limited training opportunities for journalists and editors, and a general lack of awareness and understanding of AI's capabilities and limitations. The results also pointed to the existence of information silos and cultural opposition inside newsrooms. The results indicated the need for more investment in AI technologies as well as knowledge. There was also evidence that newsrooms had not invested in technology for a while and there was lack of expertise in bridging the gap between journalism and technology.

For the case of Vietnam, Thang & Trang (2024) aimed to understand the impact of computer-mediated communication (CMC) tools on journalism in Vietnam by employing a quantitative-methods approach influenced by Social Presence Theory, Media Richness Theory, and Uses and Gratifications Theory. A quantitative survey was conducted with 335 journalists and other stakeholders in newsrooms. The results indicated that social presence significantly affects the adoption and efficacy of CMC tools in this unique cultural context.

Recent scholarly inquiries have consistently emphasized that the establishment of convergent newsroom models constitutes not merely a regional tendency but a global trajectory in contemporary media economics. It has been argued that the integration of print, broadcast, and digital

platforms has become indispensable for sustaining competitiveness and financial resilience. Within this framework, the application of artificial intelligence is widely perceived as both rational and inevitable, particularly in the context of digital transformation, where technological adoption decisively shapes economic sustainability and journalistic innovation.

III. Applications of AI in Journalism at Some Major Media Corporations and Lessons for Vietnam

Artificial intelligence has increasingly become embedded in the operational structures of leading global newsrooms, offering both efficiency gains and opportunities for editorial innovation. The New York Times, for instance, pioneered an experimental AI project known as *Editor* in 2015, designed to streamline the journalistic process by assigning semantic tags to texts, headlines, and keywords. Over time, the system learned to identify the most salient aspects of an article, thereby facilitating real-time information retrieval, accelerating fact-checking, and simplifying research activities. Beyond content management, the Times has deployed AI to moderate reader comments, an area previously requiring significant human resources. With over 11,000 comments submitted daily, human moderation only covered a small fraction of articles. Through AI-enabled solutions, comment moderation has been automated to a substantial degree, reducing costs while fostering constructive dialogue and mitigating harmful behavior. The adoption of Google's Perspective API, which categorizes comments along a toxicity spectrum, illustrates how AI can simultaneously enhance user engagement and maintain civility within digital spaces.

Similarly, BBC News Labs has applied AI-driven semantic tools such as *Juicer* since 2012 to aggregate content across more than 850 global RSS feeds. This system extracts, tags, and organizes news stories into semantic categories—organizations, locations, people, and events—thereby allowing journalists to rapidly access contextually relevant information. Future developments envisage overlaying AI-generated data annotations onto video and text, enriching user experience through interactive knowledge layers. Such innovations exemplify how AI can convert vast, fragmented information ecosystems into structured, meaningful, and accessible knowledge frameworks.

In 2016, Reuters expanded this trajectory by collaborating with Graphiq to deliver real-time, interactive data visualizations. By embedding AI-enhanced graphics into news platforms, Reuters facilitated data-driven storytelling that was both visually compelling and cognitively accessible. While not all data visualization requires advanced AI, the use of adaptive algorithms ensured continuous updates and contextual accuracy, thereby reinforcing audience trust and engagement.

The Washington Post offers another notable example through the deployment of *Heliograf*, a proprietary automated journalism system. Initially launched during the 2016 Rio Olympics, Heliograf generated real-time sports reports by converting raw event data into coherent narratives. Its capacity to detect anomalies within datasets further allowed journalists to prioritize investigative tasks. Automated journalism, while initially confined to domains such as sports and finance, demonstrates the potential scalability of AI in augmenting newsroom productivity and diversifying content output.

Yahoo! Sports, in partnership with Automated Insights, utilized natural language generation to produce customized reports tailored to sports teams and fantasy leagues. This strategy simultaneously extended audience retention and increased advertising value, highlighting the commercial advantages of AI-enabled content personalization. Likewise, the Associated Press (AP) has employed AI since 2013 to automate earnings reports and sports news, relying on tools such as Wordsmith and NewsWhip. These applications enhanced accuracy, broadened coverage, and optimized workflows by transforming raw data into publishable content at unprecedented speed.

Finally, conversational AI has been tested by Quartz and The Guardian through chatbots that deliver personalized news via messaging platforms. Quartz's Bot Studio, funded by the Knight Foundation, explored conversational interfaces to adapt news consumption to new devices and user behaviors. Meanwhile, The Guardian's Facebook Messenger chatbot provided customized news packages based on users' time preferences and content categories. These chatbot initiatives highlight AI's potential in creating low-friction, interactive, and personalized news delivery systems.

Collectively, these case studies illustrate that AI applications in newsrooms are not confined to a single domain but span semantic analysis, content generation, moderation, visualization, and user interaction. Each example demonstrates how AI, when embedded strategically, can enhance journalistic workflows, expand audience engagement, and support sustainable media economics.

From the situations of applying artificial intelligence in journalism at the New York Times, Reuters and major media corporations, and the orientation of developing a converged newsroom in Vietnam by 2030 as shown in Figure 1, we can draw some lessons for Vietnam as follows. The international experiences of leading news organizations provide valuable lessons for Vietnam as it seeks to construct AI-enabled convergent newsroom models in the context of digital transformation. First, the integration of AI into editorial processes underscores the importance of adopting a multi-platform strategy that combines print, digital, broadcasting, and interactive media. Rather than perceiving automation as a threat, global cases demonstrate that AI can complement human journalists by handling repetitive tasks, enabling them to focus on investigative reporting and strategic content development. Second, the commercial potential of AI applications—whether in personalized content, automated reporting, or interactive visualization—suggests that AI can play a pivotal role in diversifying revenue streams and enhancing the economic sustainability of news organizations. Third, ethical and governance considerations remain indispensable. The experiences of The New York Times and AP indicate that transparency, accountability, and continuous monitoring are essential to maintain trust. For Vietnam, the challenge lies in tailoring these practices to domestic regulatory, cultural, and market conditions. Moreover,

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collaboration with journalism schools and training institutions is critical to ensure that future professionals acquire digital and AI competencies. In this respect, the global trajectory strongly suggests that AI adoption is not merely optional but inevitable for the long-term viability of Vietnam's media economy.

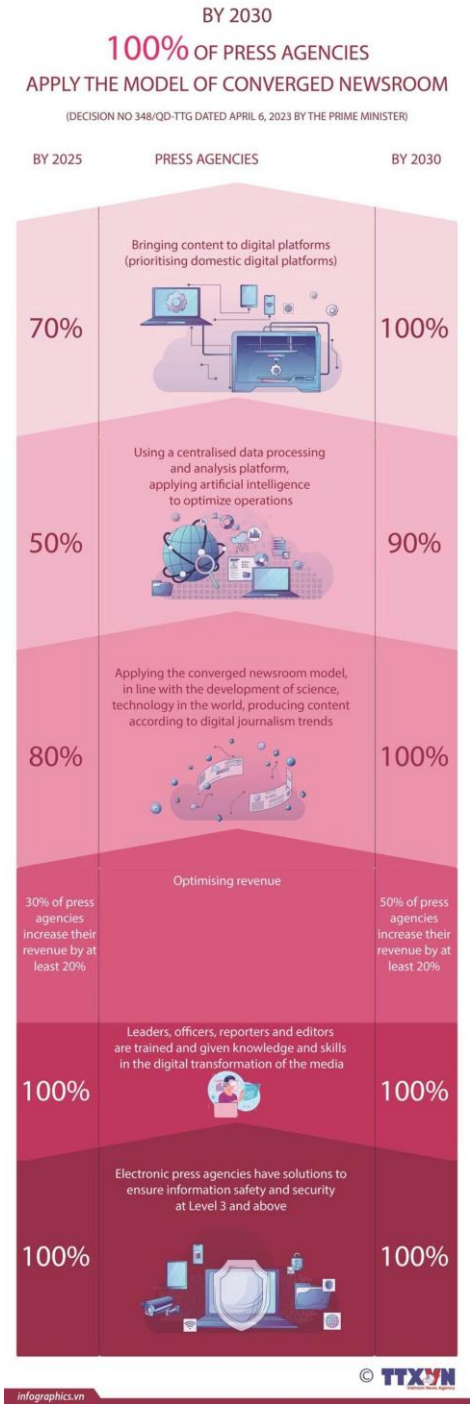

Fig. 1. Orientation for the development of converged newsrooms in Vietnam by 2030

IV. IMPLICATIONS

In light of the accelerating dynamics of the Fourth Industrial Revolution, the integration of artificial intelligence into convergent newsrooms has emerged as both a strategic necessity and an economic imperative. To capitalize on these transformative opportunities while addressing structural and institutional constraints, several key solutions can be proposed to foster effective AI adoption in Vietnam's media sector during the ongoing digital transformation.

Strategic Investment in Digital Infrastructure

A fundamental solution lies in prioritizing large-scale investments in digital infrastructure that enable the seamless integration of artificial intelligence into convergent newsrooms. Advanced cloud computing, high-speed connectivity, and scalable data storage facilities provide the technical backbone for AI-driven operations. Without such structural foundations, applications like automated content generation, semantic search, and predictive analytics cannot function effectively. Therefore, a systematic modernization of ICT infrastructure constitutes a precondition for any successful AI adoption in media organizations during digital transformation.

Human Capital Development and Reskilling

Equally essential is the cultivation of human capital through comprehensive reskilling and upskilling programs for journalists, editors, and media managers. As AI systems automate repetitive tasks, professionals must be equipped with competencies in data literacy, algorithmic thinking, and multimedia content creation. Training initiatives should also encompass ethical decision-making and responsible AI use, thereby ensuring that technological adoption complements journalistic integrity. This approach fosters a workforce capable of leveraging Fourth Industrial Revolution achievements while adapting to the evolving dynamics of convergent newsrooms.

Regulatory and Policy Frameworks

Another solution involves the establishment of forward-looking regulatory and policy frameworks that both encourage innovation and safeguard public trust. Governments and media regulators must design policies that incentivize investment in AI while addressing concerns related to transparency, privacy, and accountability. By institutionalizing ethical guidelines and technical standards, policymakers can reduce risks of algorithmic bias and misinformation. Such frameworks, when effectively implemented, not only provide legal certainty for media enterprises but also reinforce the legitimacy of AI applications in journalism.

Collaborative Innovation Ecosystems

Sustainable AI integration requires the creation of collaborative ecosystems that connect media organizations with technology firms, research institutions, and startups. Through partnerships and joint ventures, newsrooms can access cutting-edge AI tools while contributing domain-specific knowledge for model optimization. Collaborative innovation also encourages experimentation with emerging technologies, from natural language generation to computer vision. These alliances leverage the synergies of the Fourth Industrial Revolution, transforming AI from a mere technological option into a strategic enabler of newsroom

convergence in the digital economy.

Diversification of Revenue Models

Finally, fostering AI-enabled business innovation is critical to ensuring the economic sustainability of convergent newsrooms. By deploying AI to personalize content, optimize advertising, and generate data-driven subscription models, media organizations can diversify revenue streams beyond traditional advertising dependence. Monetization strategies informed by predictive analytics and consumer behavior modeling enable firms to capture untapped markets. Thus, the strategic use of AI not only enhances operational efficiency but also aligns with broader objectives of strengthening media economics in the digital transformation era.

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