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Artificial Intelligence and the Re-engineering of News Narratives: Journalistic Logic, Algorithmic Reasoning, and the Future of Audiovisual Media

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Received : 12/01/2025 ; Accepted : 11/04/2025 ; Published : 29/04/2025

Abstract

This study investigates the evolution of the media industry in the context of accelerating digital transformation. Artificial intelligence has re-engineered the narrative structure of news stories in audiovisual media through data analytics, intelligent editing, and generative storytelling. A clear tension arises between the journalistic logic, which is grounded in professionalism and contextual interpretation, and the algorithmic logic, which prioritizes interaction and efficiency.

The manifestations of this transformation can be observed across both global and Arab media institutions, although they vary in depth and scope. While artificial intelligence offers significant advantages in terms of speed and operational efficiency, it simultaneously introduces risks such as narrative bias, the homogenization of perspectives, and the erosion of journalism's critical function. The study concludes that the future of journalism lies not in replacement but in responsible integration—where the journalist remains a narrative architect who guides the algorithm, rather than being guided by it.

Keywords: Artificial Intelligence; News Narratives; Digital Transformation; Audiovisual Media; Algorithmic Journalism; Data-driven Storytelling; Media Industry; Journalistic Logic.

Introduction

The rapid pace of technological advancement has brought about profound transformations across numerous fields, including the media industry, which has not remained anchored to the past but has instead embraced the wave of digital transformation driven by Artificial Intelligence (AI). Technologies such as Machine Learning, Big Data Analytics, and Generative AI have penetrated the very core of the media process—particularly in news production—introducing significant changes not only in production mechanisms but also in the essence of storytelling itself (Diakopoulos, 2019).

Today, a structural transformation is reshaping the news narrative in audiovisual media. News stories are no longer built solely upon journalistic intuition, professional experience, fieldwork, or

investigative reporting. They are increasingly guided by AI algorithms capable of predicting audience behavior, analyzing complex patterns of engagement, and determining what deserves to be told—and how it should be told (Carlson, 2023).

This transformation extends beyond digital platforms into the core of traditional broadcast journalism—television, live coverage, and investigative reporting. AI-driven editing tools, automated content-generation systems, and virtual presenters are now embedded in the daily workflows of major international newsrooms, such as *Xinhua News Agency* and *BBC News Labs*, which employ these technologies to enhance production efficiency and multilingual output (Zeng & Wang, 2023; BBC R&D, 2022).

In the Arab world, despite varying levels of adoption, the signs of this shift are becoming increasingly evident, particularly among pioneering media institutions in the Gulf region that are heavily investing in digital infrastructure and AI technologies. These organizations are progressively integrating algorithmic tools into their news production workflows, from automated content generation to audience analytics and newsroom management systems, reflecting a broader regional trend toward digital transformation in the media sector (Assad et al., 2025). Other regional media models have since followed this trajectory.

In earlier decades, news storytelling relied primarily on the expertise and editorial intuition of journalists and on established journalistic templates. However, the rules of the profession have evolved alongside technological shifts, giving rise to unprecedented changes across all stages of news production—especially in the age of artificial intelligence, whose evolving outputs remain difficult to define or fully comprehend.

Accordingly, this study seeks to analyze the profound transformations imposed by artificial intelligence on the narrative construction of news stories in audiovisual media. It aims to explore how algorithms re-engineer the narrative components of news—from story discovery, angle selection, and source identification to the construction of chronology, the choice of visuals, background music, and even the mode of delivery. These transformations will be examined within a comparative framework between global and Arab media contexts, with particular attention to the professional and ethical challenges that emerge from the intersection of human and algorithmic intelligence.

This leads us to the central research question: Is the media landscape witnessing the emergence of a “new news narrative” governed more by algorithmic logic than by professional journalistic principles? If so, what is the journalist’s position within this shifting paradigm—an AI supervisor, an observer, or a professional gradually at risk of obsolescence?

1. Problem statement

The research problem addressed in this study stems from the epistemological and professional tension produced by the convergence of two fundamentally different domains in contemporary news storytelling—both essential to understanding the evolving media landscape. On one side stands the journalist, whose practice is rooted in professional values such as accuracy, objectivity, impartiality, and contextual interpretation, along with the intellectual capacity to analyze and comprehend the social and political dimensions of events (Zelizer, 2021).

On the other side lies the algorithm, which functions according to the logic of data, efficiency, and engagement, generating decisions through probabilistic models that often bypass human judgment and ethical reflection (Carlson, 2018). Within this human–technological intersection, the narrative of contemporary journalism takes shape across increasingly hybrid media environments. This overlap and divergence in roles—imposed by technology and digital transformation on the process of news story construction—invite a deeper inquiry into the structural reconfiguration of storytelling in today’s media. Hence, the central question guiding this research is: How does artificial intelligence reshape the narrative construction of news stories in audiovisual media, and what are the implications of this transformation for professional practice and the journalist’s traditional role as a news storyteller?

2. Research questions

To unpack this overarching problem, the study addresses the following sub-questions:

1. What AI-based technologies are currently employed in the production stages of audiovisual news stories, and how do they transform narrative methodologies?
2. What are the key differences in the application of artificial intelligence between global media organizations (e.g., Associated Press, BBC, Reuters) and Arab media institutions (e.g., Al Arabiya, Al Jazeera, etc.)?
3. Do algorithms redefine core concepts of news storytelling such as “newsworthiness,” “representation,” and “context”?
4. What professional and ethical risks emerge when part of the storytelling process is delegated to artificial intelligence, particularly within sensitive media environments?
5. What mechanisms can ensure a productive integration between journalists and algorithms—rather than a competitive dynamic that threatens the core of journalistic practice?

3. Theoretical Framework

1. News Narratives: Between Structure and Meaning

News storytelling is fundamentally a human endeavor aimed at conveying and interpreting events through a coherent narrative structure that organizes information according to causal, temporal, or thematic logic. This structure is shaped by three central components :

- **Selection** – determining which elements of reality are highlighted and which are excluded;
- **Sequencing** – arranging events in a specific order to construct meaning;
- **Context** – framing each event within a broader interpretive perspective that connects it to social or cultural realities.
- **Narrative voice** – encompassing language, tone, and perspective.

These elements are invariably influenced by ideological orientations, institutional cultures, and target audiences. Yet, until recently, such processes remained under direct human control (Zelizer, 2021), typically guided by a medium's editorial policy or ownership structure.

2. Artificial Intelligence: From Automation to Narrative Anticipation

Artificial intelligence has advanced at an extraordinary pace, extending its influence far beyond simple automation—the execution of repetitive or routine tasks—to what Diakopoulos (2019) conceptualizes as *algorithmic anticipation*, a process in which systems predict what will become news based on patterns in audience behavior and engagement metrics.

This shift reframes editorial decision-making: instead of the journalist asking, “What is important here?”, the algorithm effectively asks, “What will capture attention or retain viewers for an extra 30 seconds?” Such predictive logic illustrates how AI reshapes not only newsroom workflows but also the epistemology of news itself (Thurman & Schapals, 2023).

Zelizer (2021) highlights that this shift gives rise to what she terms the algorithmic self, in which journalists feel compelled to emulate the predictive tendencies of intelligent systems to produce “publishable” content optimized for digital platforms—even at the expense of depth or contextual integrity—thereby constructing audiences as algorithmically engineered collectives.

3. Professional Practice versus Algorithmic Efficiency

This contradiction underscores a persistent tension between journalistic and algorithmic value systems. Traditionally, journalists have prioritized events based on their social relevance, whereas algorithms rank them according to projected audience engagement.

As a result, coverage of complex issues such as climate change may be dismissed as too “heavy,” while trivial celebrity conflicts are elevated for their viral appeal. This bias is rarely overt; it is embedded within the design of the algorithm itself, rendering it more pervasive and less accountable than human subjectivity (Diakopoulos, 2023).

The outcome is a subtle yet potent form of algorithmic bias that increasingly influences media agendas.

4. AI Tools and the Re-engineering of News Storytelling

a. News Discovery: From Human Observation to Predictive Detection

Journalists no longer rely solely on traditional sources or news agencies. Today, organizations such as the *Associated Press (AP)* employ the Lynx Insight system, which scans millions of data points—from government reports and social media posts to economic indicators—to detect anomalies that may reveal emerging stories (Carlson, 2023).

For instance, an unusual surge in online discussions about medicine shortages in a specific region, when cross-referenced with declining import statistics, can automatically alert investigative teams to potential news leads.

b. Framing the Narrative: From Vision to Prediction

Algorithms equipped with sentiment analysis capabilities increasingly influence how stories are framed. During election coverage, for instance, data may indicate that audiences engage more actively with a candidate's economic discourse than with another's focus on national security.

Consequently, the algorithm steers editorial priorities toward the economic narrative—even when the central event pertains to security concerns (Diakopoulos, 2023). A notable example is CNBC's *News Genome* system, which categorizes stories into semantic domains such as economy, health, or technology and autonomously generates subheadings aligned with the engagement patterns of distinct audience segments (Carlson, 2023).

c. Visual Editing: The Algorithm as a “Cinematic Director”

In television production, editors no longer select shots manually. Tools such as Adobe Sensei analyze facial expressions, vocal tone, and motion levels to suggest the most effective dramatic sequences.

During an emotionally charged interview, for instance, the algorithm may recommend close-up shots at moments of peak tension, as data show that viewers respond more strongly to such visuals (BBC R&D, 2022).

The BBC's “Juicer” system not only aggregates content but also classifies it by narrative value, automatically generating a preliminary story structure with an introduction, body, and conclusion based on previously successful narrative patterns (BBC R&D, 2022).

d. Generative AI: From Text to Moving Image

Contemporary AI systems now enable the automated creation of complete news videos from textual scripts. By inputting a written text, newsrooms can generate virtual presenters, background visuals, and synthetic voice-overs through platforms such as *Runway ML* and *Synthesia*.

A notable example is *CCTV*'s AI-generated news anchor Xin Xiaomeng, developed in collaboration with *Xinhua News Agency*, which can deliver news and simulate conversational responses using deep learning technologies (Zeng & Wang, 2023 ; Xinhua, 2019).

In the United Arab Emirates, the Emirates News Agency (WAM) introduced in 2023 a system for automatically producing bilingual Arabic–English newscasts for digital platforms without direct human intervention (WAM, 2023).

5. AI Adoption in Arab Media: Between Ambitions and Challenges

The United Arab Emirates stands as a regional leader in institutional adoption and investment in AI-driven media. Since the appointment of the world's first Minister of Artificial Intelligence in 2017, the country has positioned AI as a cornerstone of its national digital transformation strategy.

Emirati media organizations, including the Emirates News Agency (WAM) and Abu Dhabi Media, have integrated intelligent systems into their news workflows—particularly for news gathering, real-time verification, and personalized content delivery.

For instance, WAM's News System, launched at the Global Media Congress in 2022, employs AI-based analytics and automated tagging tools to enhance the efficiency and precision of newsroom operations (WAM, 2022).

This trajectory reflects what Hassouni (2025) describes as the “institutionalization of AI within the UAE's media sector,” where technological efficiency is balanced with cultural integrity. Similarly, Babiker (2023) highlights how UAE media companies increasingly view AI not merely as a productivity tool but as a strategic component in sustaining editorial competitiveness and narrative innovation across Arabic-language platforms.

- Automated generation of short news texts;**

Audience interaction analytics on TikTok and Instagram to guide visual content production; Pilot projects employing virtual presenters for weather or sports bulletins. However, according to unpublished interviews with WAM editors (2023), AI systems are not permitted to handle politically or security-sensitive topics, which remain under full human editorial control (WAM, 2023).

In Saudi Arabia and the Gulf region, the pace of digital transformation is equally rapid. Al Arabiya has developed an internal system that links social media platforms to the newsroom, issuing instant alerts when audience engagement around an event surges—thus influencing television broadcast priorities (Al-Rasheed, 2023). Similarly, Qatar Television, formerly part of Al Jazeera Network, has employed intelligent editing tools in the investigative program Ma Khafiya A‘tham to filter hours of interviews and isolate “emotive moments” of heightened intensity, expediting production without compromising narrative quality (as cited in Al-Rasheed, 2023).

- Persistent Arab-Specific Challenges

Despite global advancements, Arab media environments continue to face unique challenges. These include the scarcity of high-quality Arabic-language data, which reduces the accuracy of machine learning models (Al-Rasheed, 2023); cultural and political sensitivities, which deter full reliance on AI for value-laden stories (WAM, 2023); and a shortage of technical expertise capable of training algorithms within appropriate Arab sociocultural frameworks (Al-Rasheed, 2023).

The Tension Between Journalism and Artificial Intelligence: Toward an Integrative Model.

Contemporary journalism increasingly demands professionals capable of functioning as *AI trainers*—individuals who can instruct and adjust algorithmic systems in line with journalistic ethics. As Carlson (2023) observes, the journalist's evolving task is not to compete with artificial intelligence, but to supervise and refine it so that technological efficiency aligns with human judgment. For example, algorithms can be calibrated to reduce the weight of “engagement metrics” in the coverage of humanitarian crises, while emphasizing

From the perspective of transparency and accountability, scholars increasingly call for greater algorithmic transparency in journalism—that is, the clear disclosure of when and how AI systems are integrated into editorial workflows. For instance, the *BBC* has introduced internal guidelines that require marking AI-assisted content and documenting automated decision-making processes to preserve public trust and uphold editorial integrity (Helberger, van der Sloot, & de Vreese, 2023).

Within the wider discourse on ethical AI in journalism, the principle of Responsible AI has emerged as a foundational requirement in the contemporary media ecosystem. It entails continuous human oversight of algorithmic outputs—particularly for politically or culturally sensitive news—as well as systematic auditing to identify embedded biases.

Equally important is equipping journalists with the knowledge to critically evaluate and guide the technologies they use. As Helberger et al. (2023) emphasize, the ethical deployment of AI in journalism is not a matter of technical sophistication, but a prerequisite for maintaining professional credibility and public trust.

Conclusion

Artificial intelligence has entered the newsroom not as a temporary innovation but as a strategic collaborator in shaping news narratives. It has redefined the architecture of journalistic storytelling across multiple stages—from event detection and content generation to narrative structuring and distribution (Diakopoulos, 2022; Carlson, 2023). Globally, and increasingly within Arab media ecosystems, the trajectory is not one of journalist replacement but of transformation:

journalists are evolving into digital narrative engineers who guide algorithms through professional judgment and ethical reasoning (Helberger et al., 2023).

Nevertheless, this transformation entails notable risks. News storytelling may gradually shift from serving as a medium for interpreting reality to functioning as a commodity for algorithmic consumption, thereby reinforcing latent biases and constraining narrative diversity (Diakopoulos, 2023). In the Arab context—where political sensitivities and cultural values intersect with technological limitations—balancing prudence with innovation becomes essential.

However, this transformation is not without substantial risks. News storytelling may evolve from a means of interpreting and contextualizing reality into a consumable digital product, thereby amplifying implicit biases and limiting the diversity of narratives (Diakopoulos, 2023). Within the Arab context—where political sensitivities, cultural frameworks, and technological limitations intersect—there is a pressing need to balance critical caution with creative innovation.

This study therefore recommends:

- Integrating AI literacy and data journalism courses into Arab communication and media curricula, to equip future journalists with critical understanding and practical skills (Al-Rasheed, 2023).
- Developing AI models tailored to the Arab context, trained on high-quality Arabic datasets that reflect regional cultural nuances (WAM, 2023).
- Institutionalizing algorithmic transparency requires that media organizations systematically disclose the extent and nature of AI involvement in news production, ensuring accountability and reinforcing audience trust (Helberger et al., 2023).
- Establishing independent professional bodies dedicated to formulating ethical and operational standards for the use of AI in audiovisual journalism—mirroring recent initiatives within the European Union—can provide a structured framework for responsible innovation and safeguard editorial integrity (Helberger et al., 2023).

In conclusion, algorithms alone cannot produce an authentic “news story” without a human imprint—where human intelligence shapes and refines artificial intelligence. Technology may accelerate storytelling, but it cannot endow it with conscience. It may amplify reach and engagement, yet it cannot create value. The evolution of the media industry, therefore, depends not on algorithms alone, but on the conscious collaboration between human and machine intelligence.

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