

AI Revolution: Redefining Content Creation in the Digital Age

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Faouzi Bendridi 

Director of Alecso Chair of Arab Societies Studies
Mohamed Cherif Souk Ahras University, Algeria
f.bendridi@univ-soukahras.dz

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Abstract

Generative models have revolutionized content creation in the text, image, video, audio, and 3D domains. This is arguably the most significant milestone in artificial intelligence to date concerning its impact on society. ChatGPT, DALL-E, Midjourney, and Stable Diffusion are already at industrial maturity with broad adoption and have started to change professional practices within journalism, marketing, education, entertainment as well as law. These systems use high-level natural language understanding capabilities together with state-of-the-art machine learning techniques to create new content that is human-like and this has never been achieved before. At the same time that such technological advancement has taken place there are very critical challenges that need immediate attention. Issues regarding authorship, originality as well as protection of intellectual property are still debated; socio-political biases that are embedded within the systems pose risks of misinformation which can threaten societal trust. Embedded biases and misinformation risks threaten societal trust. There is a performance gap between what users expect from these systems and what they can actually deliver: this reveals some basic limitations in understanding and quality of generation. More than just technical challenges, the growing use of generative AI calls for strong accountability, transparency and governance frameworks. Workflows are being reorganized professionally requiring new quality standards and models for collaboration, while economic disruption threatens traditional creative sectors. This paper looks at these different sides on short, medium and long-term horizons judging both commercial paths as well as those taken by open-source projects. It describes how AI-driven creation of content is currently happening with some potential to change things radically but also real risks attached. Gains from generative AI will not be fully reaped unless ethical guidelines, regulatory frameworks, safety benchmarks plus knowledge sharing mechanisms involving all stakeholders develop together.

Keywords: Artificial Intelligence, Digital Age, Journalism, Education, Communication

1. Introduction

The emergence of sophisticated generative models has indeed ushered in an exciting new era in technological innovation and development. On a global scale, the distribution and publication of textual, visual, auditive, and video content are today being profoundly transformed in ways previously unimaginable. Throughout humanity's history, differing means of communication have continually played vital roles in the expression of artistic creativity, the dissemination of crucial information, and the transmission of rich

culture across diverse societies. The use of computers has already radically altered text- and image-based content, leading to significant advancements that keep pushing boundaries. Now, with the advent of generative models, we are prompted to consider the wide-ranging set of capabilities that could be ascribed to such models going forward. Many diverse names and terms have been employed—such as artificial intelligence, generative artificial intelligence, generative adversarial network, and large language model—to qualify these remarkable developments in technology. These terms reflect the various facets and applications of generative models that are emerging in the modern landscape.

These different technologies alter more deeply the overall content creation process, involving Text-to-image, Text-to-video, Text-to-audio and Text-to-3D movements. The term generative model both captures and describes, in a formal sense, the deep learning architectures employed. A generative model is a data-generating process that, given a factorisation or a partition of the observed and latent variables, aims to infer the corresponding joint probability distribution over them. The second part—content generation—describes the data type, whether text, images, audio or video, produced in copious amounts and the subject of study that emerged taking off since 2018. The widespread and ever-increasing deployment of models such as DALL·E (Aldulaimi, 2025) , Midjourney, Stable Diffusion, Adobe Firefly, AudioLM, ChatGPT (Inie, Falk, & Tanimoto, 2023) continues and fuels discussions about the corresponding capacity to generate creative and original work.

2. Core Technological Drivers of the AI Revolution

In the ongoing AI Revolution, Generative Models and Creative Autonomy constitute the most prominent technical drivers. They enable machines to create novel content such as text, images, audio, and video. By using such technologies, organisations across diverse professional domains experiment with new workflows and exploration/creation methodologies involving human-AI collaboration. Controversially, adoption raises questions of authorship, originality, and the continued distinction between human and machine creativity. Under scrutiny too are the legal implications of copyright and protection for human-generated content versus machine-generated works; the establishment of distinct rights and attribution mechanisms for users, builders, and providers of generative models; and broader questions of accountability when copyrighted material is used in training datasets (Aldulaimi, 2025).

The Generative AI Toolkit has emerged as a metaphorical construction kit for creation and exploration across text, images, audio, and video. Workflows within this kit combine text and images, audio and images, and other combinations that differ in nature or modality. Human-AI collaboration within such workflows has generated interest, and multiple perspectives on Generative AI have emerged, exploring potential use cases for an array of professions

(Mayahi & Vidrih, 2022). The concept of Generative Models encompasses autoregressive architectures for text, diffusion architectures for images, and other foundational frameworks that span multiple domains. Generative AI has gained enormous attention on numerous fronts, including creative practice, education, research, policy and governance, and ethical and legal issues (Inie, Falk, & Tanimoto, 2023).

2.1. Generative Models and Creative Autonomy

Generative models, which include diffusion, autoregressive, and other multimodal architectures, are transforming creative practice, enabling optionality, idea exploration, and direct editing. Generative models automatically create high-fidelity images, audio, text, and videos conditioned on simple user inputs, supplementing and extending human authorship rather than fully replacing it. Text-to-image and text-to-text systems support workflows in art, design, journalism, music, and software development, with significant societal implications when integrated into products across diverse domains (Inie, Falk, & Tanimoto, 2023).

Creative autonomy, the flexible degree of supervision that a human provides an AI system, is essential for human-centered generative AI. Creative autonomy in generative AI spans varying degrees of human control, ranging from tight to loose coupling. Empirical analyses examine the scope of control that users retain and the degree of improvisation that users afford generative AI, revealing potential oversight and risk scenarios. Maintaining creative authority and clarity on where human input, human intent, and conceptualization end, and generative AI begins bears directly on intellectual property issues (Epstein, et al., 2023).

2.2. Natural Language Understanding and Multimodal Synthesis

Significant advancements in natural language understanding have facilitated the synthesis of various forms of content, including text, images, audio, and video. These improvements support a wide array of applications, ranging from basic content generation to complex dialogues, reasoning processes, and real-time interactions. The extensive range of these capabilities lowers the barrier for entry for individuals who are not experts, thereby expanding the array of potential use cases, especially among content creators. However, despite these advancements, performance is inconsistent: notable discrepancies persist between user expectations and the actual capabilities of these systems, with frequent failures exposing limitations in both understanding and content generation. (Karanikolas, Manga, Samaridi, Tousidou, & Vassilakopoulos, 2023)

Numerous essential capabilities distinctly characterize the contemporary landscape of natural language understanding, underscoring its significance in various applications. The seamless integration of language-based inputs and thoughtfully crafted prompts significantly enhances the generation process across an array of modalities; however, text continues to serve as a remarkably

versatile medium for effectively articulating intent and as a crucial interface for meaningful human engagement. Despite significant advancements in critical areas such as language comprehension, commonsense reasoning, and sophisticated dialogue systems, notable constraints persist that continue to hinder the efficient dissemination of information in a manner that is user-friendly and accessible to a broad array of users. Addressing these limitations remains vital for future developments in the field. (Erdem, et al., 2022)

2.3. Data Availability, Privacy, and Evaluation Metrics

Information gathering and assessment require well-structured data pipelines encompassing quality-controlled sources and suitable licensing. Generative models trained on text, audio, code, and images benefit from openly available pipelines (Raj, Berg, & Seamans, 2023). Data from books, articles, and websites constitute a formidable reservoir for languages and capabilities; however, despite these broad collections, bias remains the principal limitation (Aldulaimi, 2025).

Generative systems demand copious amounts of data and processing. Despite aggregation pains, substantial developments have been made in both social and commercial domains. Curation tools, provenance tracking, and augmentation services jointly define a data ecosystem that fuels generative and analytical AI. Synthesizing and annotating data across digital modalities entails further interoperability and sequence alignment from a creative standpoint. (Dua & Patel, 2024)

Embodiments of text-to-image, image-to-text, and audio integration reveal intriguing insights into the driving forces that are shaping and propelling the development of multimodal models. These groundbreaking inventions spotlight the essential components of modality alignment, emphasizing the significance of modality transformation generativity, along with the seamless transfers that occur between different formats, and user granularity through the intriguing method of steganography. The complex internal architecture and processing ordering are characterized by multicolumn, three-stage, and parallel configurations, which play a crucial role across both broad-target (all-in) and ask-focused (prompt-embedded) modalities, showcasing the sophisticated interplay of various elements in these evolving systems. (Meng, Ma, Miao, Zhang, Yang, & Zhuang, 2025).

3. Transformations in Professional Domains

Artificial Intelligence (AI) is reshaping several professions involving content creation. It appears to reinforce some existing practices, foster the adoption of new ones, and stimulate debates about long-established principles. Three fields considerably impacted by these transformations are journalism, marketing and brand communication, and education (Aldulaimi, 2025).

Journalistic work is increasingly automated at the level of newsrooms. AI plays a growing role in verifying facts, sourcing relevant information, providing

background, and assessing editorial relevance.

Generative algorithms underpin considerable activity in marketing and brand storytelling. Their use allows rapid prototyping and improved personalization. Establishing the propriety of AI-generated texts constitutes an open question (Inie, Falk, & Tanimoto, 2023).

Within education, generative models expediently produce pedagogy-support resources, shape templates for diverse communication settings, and engage in dialogue with students. Peer review has emerged as a feedback mechanism through which scholarly communication has embraced the recent proliferation of AI-generated activities.

3.1. Journalism and Editorial Practices

While traditional journalism conceptually extends from the invention of writing to today's ubiquitous recording of events, practice has continually evolved. Technological milestones such as the printing press, telegraph, and Internet have shaped the field. Editorial operations have remained consistent across periods, concerning source selection, verification, and publication objective. Newsrooms continue to perform as both content producers and curators who assign and validate sources. Generative AI reshapes workflow across text, sound, and still/image/video media, fundamentally altering operational norms, quality, and the nature of journalism (Gupta, Ibañez, & Tenove, 2024). Current capabilities accommodate the drafting of extended articles based solely on headline, brief input, or voice recording; demand sourcing; real-time refinement of style and tone; and composition or generation of illustrations, video, mechanical-sound accompaniment, and other media. (Lu, n.d)

Generative systems advance fact-checking, which has consistently been pivotal in safeguarding journalism. Automated detection of errors (whether text or fact) is a long-standing interest. AI-moderated factual verification supports rapid initial drafting, enabling journalists to circulate content prior to thorough checking. Generative models have also facilitated the construction of source-oriented datasets, training pipelines, and tools enabling analyzable representations of journalistic practice and content quality. Journals drive the extrusion of detectable patterns, quality checks improve source transparency, and assessment aids investigations.

3.2. Marketing, Advertising, and Brand Storytelling

Social media platforms have elevated content marketing into a mainstream marketing strategy. As computers and communication technologies—particularly social media—continue to advance, artificial intelligence can enhance these digital marketing strategies. This article examines how artificial intelligence improves marketing content and heightens awareness of the convergence of content marketing and artificial intelligence. Content marketing evolves with micro-moments—ephemeral content that reinforces a brand to

maintain consideration and preference in a fast-moving marketplace. With social media transforming both discourse and marketing, the construction of content must change. The speed of change requires faster, error-free, consistently high-quality content. Artificial intelligence thus becomes a prerequisite, leading to the marriage of content marketing and artificial intelligence, and predictive digital marketing. A better understanding of these two concepts and their interactions will increase global awareness. (Hendrayati, Achyarsyah, Marimon, Hartono, & Putit, 2024)

Content constitutes the latest marketing concept; therefore, content marketing has emerged as a necessity in today's global economy. However, staying level in the original events of marketing, marketing has turned to separate itself from the contents and has begun to develop the augmented strategy called marketing 5.0. As marketing continues to develop through marketing 5.0, there will be newly developed and advanced contents so the contents will continue to stay relevant in this global economy. Even though no one can define the best version of content, the combination of generative artificial intelligence and content marketing can facilitate the creation of new forms of content. Generative artificial intelligence methods have begun the journey of bringing narration and marketing to the content. Companies are trying to utilize generative artificial intelligence by exploring advanced models, new ideas, and better contents. (Wahid, Mero, & Ritala, 2023)

The advanced artificial intelligence model is an added value in this content marketing strategy. It generates deeper meanings in a short and precise format. Then better narrative improves the storyline and the overall content appealing to readers with different minds, and generates targeted content that positions the brand so as to meet acquisition and conversion objectives. Furthermore, different types of contents have been increasing. New ideas, fresh creations, and large volumes of contents focused on enhancing a brand have arisen. Instead of directing efforts in creating that high level of the targeted content, applying artificial intelligence on analyzing the thoughts have been being more preferred. The current focus of artificial intelligence on content marketing lectures related to the approaches, opportunities, and challenges of how artificial intelligence mimics human creative processes to enhance and generate something totally new (Mayahi & Vidrih, 2022).

3.3. Education and Scholarly Communication

Global education systems have been contending with generative AI and its effects on pedagogy and academic practices since ChatGPT came onto the scene in late 2022. Higher education is impacted through its dual role of academic research and instruction. The main topic within teaching is employing new AI technologies as pedagogical and learning tools. Institutions grapple with questions about the future of learning, assignment specifications, and assessments. With access to generative AI, production of genuine academic

work capable of passing accepted quality hides the boundaries of human capacity from educational review of student submission. Research practice in education must reorient to gather, analyze, and present knowledge on the societal consequences of the new wave of AI tools on higher learning (Łodzikowski, W. Foltz, & T. Behrens, 2023). Reproducibility of previously existing work promoted by digital storage and dissemination styles associated with e-publication has moved to wider accessibility of research visibility and accessibility to different educational communities by archiving and sharing current academia; the current generation of scholarly education and use of academic publications engages profound discussion on the shared experience of new academic paper as generative AI styles the scholarly challenges (Pearce, Weller, Scanlon, & Kinsley, 2011). The traditional peer review process that has been progressively established within academia remains under exploration (Schiff, 2021).

3.4. Entertainment and Interactive Media

AI has the potential to transform entertainment and interactive media, the last mission-critical creative segment where literature, narrative, and style already are non-issues. New tools foster deeper engagement with audiences. These tools automate tedious tasks and support incremental development of ideas, speeding up the cycle between creators' and audiences' contributions to the co-creation of memorable experiences. Generative content elements, sometimes called procedural content, allow for new forms of user-centric experiences. Tools generating motion content can help tell a story, even in pre- or post-production. The concern that generative content compromises the originality of creative work rests on either the autonomy of the output machine or the control exercised by the same machine. (Prasad & Makesh, 2024).

Over half of respondents to the 2023 Content Creation in the Era of Generative AI survey (Aldulaimi, 2025) believe artificial intelligence (AI) accelerates creativity by enabling quicker iteration of existing ideas, allowing authors to enhance drafts, obtaining inspiration, facilitating the generation of alternate storylines, pampered-by-second-brain friends, and enabling collaboration for ideas. Generative models can assist with procedurally generated elements such as avatar creation, level design, character design, and even music composition, which already have a long tradition in the industry.

4. Ethical, Legal, and Policy Considerations

The emergence of large language models and multimodal generative systems capable of producing human-like text, images, audio, video, and 3D objects creates new ethical, legal, and policy challenges that require urgent attention. For society to realize the full benefits of these technologies, it is essential to develop proper accountability, transparency, governance, and rights frameworks (Epstein, et al., 2023). Existing policy tools are being repurposed as regulatory interest expands, but compliance remains problematic. The tension

between open access and protective regimes places control under additional scrutiny, especially concerning the role of data in model training. Enhancing data fairness and preventing privacy violations are high priorities, yet fully engineering solutions to these challenges remains elusive (Alex Yang & Huyue Zhang, 2024).

Generative models, in particular, generate outputs that frequently embed socio-political bias, and systems manifest many capabilities characteristic of human intelligence, such as reasoning and persuasion. The broader impacts of gaining practical access to these capabilities, along with the capacity to alter context and modify material in transformative ways, have raised questions regarding manipulation and the potential for societal detriment and misinformation. Nations move toward safeguarding tradable intellectual property rights in publicly accessible images, text, music, and software. Critics of generative systems point to serious risks that the enabling technologies underpinning this remarkable advancement lack adequate governance.

5. Challenges and Risks in AI-Driven Content Creation

Technological advances have propelled AI capabilities forward. Budget cuts in editorial departments around the world have hastened the adoption of automated journalism and advertising copywriting. Within the media sector, AI has transformed professional work in journalism, marketing, education, law, and entertainment. Examples include changing content creation practices, task automation, and the emergence of co-creation models. (Türksoy, 2022).

Newsrooms use AI to generate sport and financial news, enhance onboarding, automate low-value workflows, and collaborate with large language models on editorial decision making. Machine-driven news recommendations guide verification and sourcing decisions, while LLMs aid verification when evaluating the trustworthiness of both sources and content. Such models offer guidance on the elaboration of story angles. (Kevin-Alerechi, Oladunni, Osanyinro, Ojumah, & Ogundele, 2025).

Marketing departments have adopted generative models for fast prototyping, producing rough drafts of ad campaigns and articles, and brainstorming ideas. Platforms enabling workflow digitization and real-time collaboration eliminate manual content copying from documents into presentations and conformance checks. The technologies thus accelerate content creation, enhance storytelling, and facilitate audience engagement. AI also assists in personalizing content, screening audience preferences, and projecting diverse scenarios for future audience states. Nevertheless, ethical principles regarding reliability, bias, and fairness still require development. (Rana & Cheok, 2025)

In education, generative models support intelligent, personalized learning by creating summaries, quizzes, and elaboration questions tailored to individual knowledge states. Models evaluate university admission essays and

collaboratively write academic manuscripts. Government, academia, and the private sector rely on peer review for assuring scholarly quality, while educational systems Silicon Valley regard AI as detrimental. Modifications in content policy, peer review, and education thus follow. Generative image, video, and interactive content also aid knowledge content generation, discussion engagement, and gaming playback in video gaming.

Structures, governance, vision, and mindset remain central to responsibility, supervision, implementation, and specification in both content creation and consumption. As do varying attitudes toward technical advancement leadership.

6. Future Trajectories and Scenarios

The extensive ramifications of AI-driven content generation remain a topic of interest, prompting discussions about the potential trajectory of this technology, its prospective impacts, and the necessary governance-related issues. Perspectives that encompass short-, medium-, and long-term horizons demonstrate differing levels of optimism concerning the viability of a primarily commercial model characterized by open-market accessibility and the expansion of installed bases, which operates in tandem with open-source initiatives. These perspectives may play a critical role in shaping the realization of concerns related to existential threats posed by highly advanced artificial intelligence systems. Additionally, the medium- to long-term forecast exhibits significant variability, often reflecting a combination of progress and stagnation. Ongoing investigations into platform-agnostic marketplaces that promote fluid transitions across diverse ecosystems, together with the implementation of broadly applicable interoperability frameworks, inform the analysis of research endeavors and investment strategies that may be simultaneously aligned yet fundamentally distinct. (Mzwri & Turcsányi-Szabo, 2025).

Planned responses to attendant governance imperatives variously encompass priority-setting for co-created knowledge-sharing vehicles—including standards, agendas, databases, and experiments; funding strategies emphasizing facilitation of exploratory participation in theoretically defined avenues; exploration of benchmarks and evaluation protocols—revisions of the choice of challenge domains may also favour systematic yet open-ended examination of quality, integrity, safety, and fairness indicators in artificially sought improvement of generative processes, so-called reinforced ideation; and Boolean canvassing for safety measures, acceptable domains, and marginally supplementary objectives, covering utility facets ranging from permissions and data sharing to rights, consent, and removability, choice of composition, alterations, modes, and environments. (Inie, Falk, & Tanimoto, 2023)

7. Conclusion

The advent of artificial intelligence (AI) has profoundly changed human existence, pushing the boundaries of what machines can create. The fast-growing field of AI-enabled content generation promises creative media tailored

to user preferences. This work defines the scope of AI-driven content creation, arguing that generative models and natural-language understanding have reached industrial maturity and that significant uptake has occurred in journalism, marketing, education, entertainment, and other sectors. The impact on professional practices, including new workflows, collaboration models, and quality standards, is described. Challenges are examined, including technical vulnerabilities, societal implications, and economic disruption. Despite these risks, the predictions are optimistic: strong, AI-augmented media remain decades away; the critical human element in content creation continues to evolve; and the timely, accessible research can inform sound implementation and governance (Aldulaimi, 2025); (Mayahi & Vidrih, 2022).

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