

Advertising Communication: From Traditional Practices to Artificial Intelligence-The Algerian Case-

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Abstract:

This article traces the evolution of advertising from its early informative role to its current digital and AI-driven forms, employing a historical-comparative approach. It highlights milestones such as the development of online platforms, expansion of social media, and implementation of programmatic systems, while addressing key ethical concerns including privacy, transparency, and trust.

The Algerian case offers a distinctive perspective: electronic advertising experienced rapid growth after 2006, driven by rising internet penetration and the entry of global agencies, yet remains constrained by regulatory gaps, infrastructural weaknesses, and limited institutional support.

Findings show that advertising is not only a commercial practice but also a cultural and communicative phenomenon shaped by technological, economic, and social dynamics. The study emphasizes the importance of governance frameworks that strike a balance between efficiency, accountability, and human values, particularly in emerging markets.

key words: Advertising; Electronic Advertising; Artificial Intelligence; Innovations; The Historical-Comparative Approach.

Introduction

Advertising has long been a central driver of communication and consumer culture, evolving in tandem with technological innovation and socio-economic change. From print and broadcast media to digital platforms and artificial intelligence (AI), its trajectory illustrates both continuity and disruption in how messages are produced, disseminated, and consumed (Neuman, Guggenheim, Jang, & Bae, 2014). Today, advertising is no longer limited to persuasive communication; it has evolved into a data-driven system characterized by algorithmic targeting, personalization, and automation. These shifts bring both opportunities, such as increased efficiency and interactivity, and risks, including oversaturation, privacy concerns, and declining consumer trust.

While global scholarship has highlighted these transformations, national contexts often reveal distinctive dynamics. Algeria represents a particularly revealing case. The country entered digital advertising relatively late, with the first online agency founded in 2006 and

international actors arriving in 2007. By 2008, online advertising expenditures had already tripled, (Bouali, 2015). supported by rapid internet adoption, declining subscription costs, and the expansion of e-commerce. Internet penetration surged from 150,000 users in 2006 to over 18 million in 2015 ((ARPT), 2016), creating the conditions for more sophisticated digital campaigns.

Yet, this quantitative growth remains constrained by structural limitations: weak institutional regulation, a lack of standardized measurement tools, limited pricing transparency, and the digital divide between urban and rural regions. Moreover, the entry of international agencies introduced higher benchmarks, but also widened the asymmetries between global firms with advanced analytics and local agencies that rely on basic service models. Consequently, Algeria presents a dual challenge: to catch up with global standards while addressing local infrastructural and institutional gaps.

This study employs a historical–comparative approach to trace the evolution of advertising across print, broadcast, digital, and AI-driven phases, with a focus on Algeria as a unique case. By examining Algeria within this context, the analysis highlights how global innovations intersect with and are shaped by local structural constraints, revealing the dual imperative of catching up with international standards while overcoming domestic challenges

1. Research Problem and Objectives

Numerous scholarly works examine the psychological, economic, and ethical dimensions of advertising, as well as its persuasive strategies. However, relatively few studies provide an integrated analysis encompassing its historical development, technological transformations, and socio-cultural contexts. This paucity of research becomes particularly apparent when focusing on local contexts, such as Algeria, wherein advertising exemplifies the intersection of global technological trends with national cultural, economic, and regulatory frameworks. Despite Algeria’s comparatively recent adoption of digital platforms, the country presents a compelling case for understanding how global innovations are modified by local structural constraints and opportunities.

This article aims to fill that gap by examining advertising through a framework that connects global changes and local contexts. Its main goal is to explain how advertising, especially online and AI-based forms, has evolved and continues to impact today’s markets and societies. To do this, the study focuses on the following research questions:

- A. How have historical and technological changes shaped advertising's functions and media?**
- B. What sets electronic advertising apart from traditional forms, and what challenges does it face?**
- C. How does AI change advertising design, targeting, and consumer interaction, and what are its implications?**
- D. What dynamics define electronic advertising in Algeria, considering socio-economic, cultural, and regulatory influences?**

By addressing these questions, the article makes a distinct contribution: it demonstrates how global advertising theories can be tested and adjusted to fit the realities of emerging

Advertising communication: from traditional Practices to artificial intelligence——Boulkaibet markets, using the Algerian case to show how technological innovation is shaped by local cultural and structural constraints.

2. Methodology: The Historical–Comparative Approach

This study employs a historical-comparative approach to examine the evolution of advertising as a communication phenomenon, focusing on the Algerian context.

The historical dimension traces advertising from early print and broadcast forms to its current digital and AI-driven phase. Sources include archival materials, advertising samples, legal and regulatory texts, and secondary academic studies. The study applies document analysis and source criticism, following Gottschalk's (1969) distinction between data and interpretation to ensure reliability through both internal and external evaluations.

The comparative dimension identifies continuities and contrasts across the technological phases of advertising: print, broadcast, digital, and AI-driven. It also examines differences across various regulatory environments. This analytical lens demonstrates how technological innovation, economic transformation, and social structures have shaped the persistence and evolution of advertising practices (Waisbord, 2022). By comparing past and present developments, the method reconstructs historical trajectories and provides a critical assessment of current dynamics and emerging trends.

This dual approach offers both depth and breadth by situating advertising within its socio-historical context and enabling systematic comparisons across periods, practices, and regions. Its flexibility captures localized dynamics, as seen in the Algerian case, where global innovations intersect with specific structural and regulatory constraints. The historical-comparative method thus provides a robust framework that balances empirical rigor with critical interpretation, ensuring a nuanced understanding of advertising's evolution across global and national dimensions.

3. Conceptual Framework

3.1. Advertising

Advertising can be defined by clarifying its nature and distinguishing it from other forms of communication. **Petit Larousse** calls it “the set of means used to promote an industrial or commercial enterprise, or to praise a specific product.” This definition reduces advertising to an act of praise, but overlooks its broader communicative and persuasive functions. The **Oxford English Dictionary** instead defines it as “the activity or profession concerned with producing information for the purpose of promoting the sale of commercial products or services.” While this avoids the narrow idea of “praise,” it remains general. It does not clearly differentiate advertising from practices such as public relations or direct promotion. Both definitions highlight essential points but fail to capture the full complexity of advertising as a professional, communicative, and strategic activity.

3.2. Electronic Advertising

The academic literature presents multiple conceptualizations of electronic advertising. Lee and Cho (Lee, 2020) define electronic advertising as the strategic use of digital channels such as websites, email, search engines, and social media to deliver targeted, measurable, and interactive messages that influence consumer behavior. Building on this, Tuten and Solomon (Tuten, 2022) expand this concept to include engagement-driven communication that uses data analytics, personalization, and social participation.

Similarly, Solomon (Solomon, 2017) underscores the importance of interaction, viewing electronic advertising as the strategic use of social platforms to foster participation, co-creation, and brand value.

On a definitional level, the American Marketing Association ((AMA)) describes electronic advertising as any paid, non-personal online promotion by an identifiable sponsor, emphasizing measurability and effectiveness as key traits of digital marketing. Taken together, each perspective highlights a distinct aspect of electronic advertising. Lee and Cho (2020) highlight the value of technological precision and audience targeting. Tuten and Solomon (2022) focus on interactivity and consumer engagement but place less emphasis on creativity.

Solomon's (2017) framework foregrounds consumer participation, yet it does not explicitly address performance measurement.

The American Marketing Association's definition balances promotion, interaction, and measurability but gives little attention to creativity or socio-cultural implications. In summary, these conceptualizations indicate that electronic advertising is a multidimensional construct shaped by technological affordances, interactive engagement, and the ongoing pursuit of measurable marketing outcomes.

3.3 .Artificial Intelligence

Definitions of artificial intelligence (AI) differ between technical and regulatory views. Russell and Norvig (Norvig, 2020) use the idea of the "rational agent." This is a system that perceives its environment and acts intelligently to maximize performance by set criteria. Their definition emphasizes efficiency and functionality but does not address accountability and transparency. The Organisation for Economic Co-operation and Development ((OECD)., 2019) instead defines AI as a machine-based system that processes data to generate outputs, such as predictions, recommendations, or decisions. These outputs affect both physical and digital environments. This view underscores the societal impact of AI and its governance implications.

Taken together, these definitions complement each other. The scientific perspective guides engineers and researchers in building intelligent systems. The regulatory perspective enables policymakers to address ethical, legal, and social challenges effectively. In advertising, this duality is crucial. AI is used to optimize targeting and personalization. It also raises debates about privacy, transparency, and consumer protection.

4.Literature Review:

4.1.From Digital Milestones to AI-Driven Advertising

The historical trajectory of electronic advertising can be traced across three developmental phases: early experimentation, institutional expansion, and the era of big data and smartphones. Each phase reflects broader technological, economic, and cultural dynamics, laying the groundwork for today's more sophisticated advertising ecosystems.

Recent scholarship, however, converges on the view that the most transformative shift lies in the AI-driven turn. The defining analytical issue emerging from this trajectory is the persistent tension between innovation, risk, and ethical governance in advertising practice. **Huh** (Huh, 2023) highlights the exponential growth of AI-powered campaigns, while **Saura** and **al** emphasize the ethical dilemmas related to consumer autonomy and data privacy (saura, 2024).

Häglund and **Björklund** (Häglund, 2022) propose contextual AI advertising as a privacy-conscious alternative to intrusive targeting. At the same time, emerging studies warn of new vulnerabilities: **Tang** and **al** (Tang, 2024) also **Jung** and **al** (jung, 2025) show that AI-generated personalization and “artificial creativity” may erode consumer trust without transparency, while **Antolović** and **al** (Antolović, 2025) underscore unresolved legal and ethical risks in influencer marketing and native advertising.

Taken together, this body of research reveals a dual trajectory: AI-driven advertising enhances personalization, efficiency, and interactivity, yet simultaneously intensifies ethical, legal, and societal vulnerabilities. Whereas historical phases demonstrate a gradual integration of digital technologies, the AI-driven shift constitutes a qualitative rupture that redefines both theory and practice in advertising.

This review thus identifies a critical research gap: while existing studies examine discrete risks or opportunities, fewer attempts have been made to develop integrative frameworks that explain how persuasion, regulation, and consumer autonomy intersect in AI-powered advertising. Addressing this gap is central to advancing both scholarly debate and practical governance in the field.

4.2.Milestones in Electronic Advertising

Electronic advertising represents a key indicator of digital transformation in marketing, evolving through successive phases shaped by technological, economic, and socio-cultural forces. Over the past three decades, its trajectory has shifted from experimental formats to sophisticated, AI-powered ecosystems that increasingly integrate ethical and regulatory considerations.

A- The Audience Testing Phase (1970–1990)

In this early phase, online advertising was primarily experimental. Internet access was largely confined to academic and research settings, restricting its commercial scope. Unsolicited email campaigns generated negative perceptions and underscored the need for ethical oversight. A landmark example was AT&T's first banner ad on **HotWired** in 1994, which achieved a click-through rate of over 40%. Although this period lacked analytics and

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B- The Expansion Phase (2000–2010)

The early 2000s marked the institutionalization of digital advertising. The launch of Google AdWords in 2000 revolutionized targeting by aligning ads with real-time user queries, greatly improving conversion efficiency. Simultaneously, social platforms such as Facebook (2004), YouTube (2005), and Twitter (2006) integrated advertising into daily user interactions. Campaigns like Old Spice (2010) showcased participatory engagement, while personalization and retargeting strategies employed by Amazon and eBay reinforced the centrality of data-driven marketing. However, this period also exposed structural challenges, including privacy risks, platform concentration, and consumer fatigue (Tucker, 2011).

C- The Big Data & Smartphone Era (2010–2020)

The subsequent decade was characterized by the convergence of mobile ubiquity, big data analytics, and algorithmic personalization. Smartphone facilitated the growth of in-app and “value-exchange” advertising formats that rewarded user engagement. Social innovations, such as Instagram Stories, YouTube Live, and TikTok challenges, reshaped brand–consumer interactions through short-form, immersive storytelling (kumar, 2020). Influencer marketing matured as a dominant strategy, exemplified by Daniel Wellington’s global campaigns. At the same time, machine learning, real-time bidding, and hyper-targeting enhanced operational efficiency but deepened concerns about surveillance, algorithmic bias, and platform monopolization (Napoli, 2021)

5. Challenges and Future of Electronic Advertising

Although electronic advertising represents one of the most dynamic domains of digital transformation, it continues to face structural and operational challenges that constrain its full potential. Oversaturation, with thousands of daily online ads targeting a single user, reduces attention and weakens campaign impact. Privacy and data protection have become increasingly sensitive issues, particularly with the enforcement of regulations such as GDPR and CCPA, which restrict the collection and processing of user data for targeted advertising. At the same time, digital campaigns rely heavily on algorithms and artificial intelligence; when data is misinterpreted, investment outcomes often fall below expectations, while phenomena such as click fraud further erode efficiency and trust (Chaffey, 2022)

Yet these very challenges also outline the future trajectory of electronic advertising. The current crisis of audience fatigue creates an opportunity for immersive technologies, with augmented and virtual reality offering interactive product experiences that can re-engage consumers. Stricter privacy regulations, while restrictive, encourage the adoption of more ethical and privacy-conscious personalization models, such as AI-driven contextual advertising (saura, 2024). Similarly, while algorithmic dependence introduces risks of inefficiency, advances in machine learning and predictive analytics promise real-time optimization, dynamic personalization, and higher relevance. The market dominance of a few global platforms narrows diversity, but the convergence of digital and traditional

Advertising communication: from traditional Practices to artificial intelligence————Boulkaibet advertising may generate more balanced ecosystems. Finally, declining consumer trust, exacerbated by opaque targeting and influencer marketing (Antolović, 2025), underscores the necessity of transparency and ethical governance as the foundation for sustainable brand–consumer relationships.

In short, electronic advertising stands at a crossroads: its future lies in transforming constraints into opportunities by combining technological innovation with regulatory compliance and social responsibility.

Table 1. Comparative Overview of Challenges and Prospects in Electronic Advertising

Dimension	Current Challenges	Future Opportunities
Audience Engagement	Ad oversaturation and consumer fatigue limit attention and persuasive impact.	Immersive formats (AR/VR, interactive ads) enable deeper, experiential engagement.
Data & Privacy	Stringent regulations (e.g., GDPR, CCPA) and rising distrust of data exploitation.	AI-driven contextual and predictive models allow privacy-conscious personalization. .
Algorithmic Dependence	Risk of misinterpretation and inefficiency in targeting	Machine learning supports adaptive optimization and real-time campaign refinement.
Market Structure	Concentration of power in a few global platforms reduces diversity and competition.	Convergence of digital and traditional media may foster more balanced ecosystems.
Consumer Trust	Declining trust due to intrusive targeting, native ads, and opaque influencer practices.	Ethical governance and transparency can restore confidence and strengthen brand loyalty

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6. Artificial Intelligence and Interactive Design

The integration of artificial intelligence (AI) into advertising represents a substantial shift from previous digital advertising practices, especially in creative design and interactive engagement. Traditional advertising depended primarily on human creativity and manual tools. In contrast, AI enables algorithmic automation of content generation, personalization, and real-time audience interaction. This development redefines both advertising production processes and the consumer experience.

6.1. In terms of design

Artificial Intelligence (AI) has fundamentally redefined the creative dimension of advertising. It reduces dependence on human designers and enables algorithms to autonomously generate both visual and textual content. Through generative AI, brands can now produce virtual models, synthetic imagery, and adaptive campaign materials. These materials evolve dynamically in response to user preferences and real-time behavioral data. This technological shift accelerates content production, enhancing efficiency and scalability across diverse market segments.

In the fashion and retail industries, global brands such as Nike and Mango have adopted AI-generated virtual models in their promotional campaigns. This integration has led to substantial cost reductions, shorter design cycles, and increased precision in consumer targeting and personalization (Ramaswamy, 2023). AI-driven creative tools also help brands meet sustainability goals by minimizing material waste from traditional photo shoots and physical prototypes. These advancements mark a shift from conventional static design, which was limited, resource-intensive, and time-consuming.

More broadly, automating creative processes challenges traditional ideas of authorship and originality. It prompts new discussions about authenticity and ethical transparency in digital advertising. As a result, scholars and practitioners are reconsidering the boundaries between human creativity and machine intelligence. This is especially true in contexts where emotional resonance and visual storytelling remain central to brand identity.

6.2. In terms of impact

A comparable transformation is evident in the domain of consumer engagement, where artificial intelligence (AI) has introduced a new logic of interaction between brands and audiences. AI enables advertisers to process and interpret extensive behavioral datasets, revealing patterns of motivation, emotion, and preference at unprecedented depth and scale. Through such analytical capacity, advertising messages can be designed to achieve emotional resonance and hyper-personalized targeting that align precisely with consumer expectations and situational contexts (Solomon, 2017).

Empirical studies further indicate that intelligent advertising systems can enhance consumer efficacy, perceived relevance, and satisfaction, particularly when implemented within transparent and ethically governed frameworks. Transparency not only mitigates perceptions of manipulation but also strengthens cognitive trust in AI-driven recommendations, thereby reinforcing long-term loyalty and trust.

Moreover, the rise of conversational interfaces, including chat bots, voice assistants, and immersive augmented-reality (AR) formats, has redefined the traditional model of one-way advertising communication. These tools transform the consumer role from a passive receiver to an active co-creator of brand meaning and experience. As a result, the consumer–brand relationship evolves into a dynamic, participatory exchange that fosters deeper engagement, emotional connection, and community-oriented identification (saura, 2024)

From a broader analytical perspective, AI-driven advertising thus follows a dual trajectory. On one hand, it optimizes efficiency, personalization, and interactivity; on the other, it introduces complex challenges related to authenticity, emotional manipulation, privacy, and consumer autonomy. Whereas earlier phases of digital advertising emphasized quantitative expansion and data-driven optimization, the AI paradigm represents a qualitative rupture, a transformation that redefines not only design processes but also the epistemology of audience interaction.

Consequently, this evolving ecosystem necessitates an integrative regulatory and ethical framework that incorporates insights from psychology, communication ethics, and digital governance. Stakeholders in advertising, regulation, and technology should collaborate to design and implement such frameworks, ensuring transparency, accountability, and consumer protection while preserving the creative and economic potential of AI-enhanced advertising.

Table 2. Comparative Dimensions of AI-Driven Advertising: Design Innovations and Interactive Impact

Dimension	Traditional Advertising Design	AI-Driven Advertising Design
Creative Process	Relies on human designers and manual editing tools; static formats dominate.	Algorithmic generation of visual/textual content (e.g., generative AI, virtual models).
Personalization	Limited and costly; mostly demographic-based segmentation..	Highly dynamic, behavior-based personalization driven by big data and predictive analytics.
Production Cost & Speed	Time-consuming and expensive due to reliance on design teams.	Faster, cost-efficient production with scalable automated tools.
Consumer Engagement	One-way communication; passive reception by the audience.	Interactive and immersive (chatbots, AR/VR, adaptive content).
Psychological Impact	General persuasive appeal; limited emotional tailoring	Emotional resonance through hyper-targeted messages but risk of “uncanny” or manipulative effects.

Ethical Concerns	Focus on truth in representation and fairness in exposure.	Raises concerns about authenticity, trust, and manipulation in personalized experiences.
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7. Electronic Advertising in Algeria: Between Quantitative Growth and Structural Constraints

Within the historical–comparative framework adopted in this study, the Algerian case provides an illustrative example of how digital advertising evolves in emerging markets. It reflects the interplay between global technological and regulatory trends on the one hand, and local infrastructural and institutional constraints on the other.

The trajectory of electronic advertising in Algeria reflects a late but accelerated transition from traditional media toward digital platforms. The first specialized online advertising agency was established in 2006, followed by the entry of international agencies in 2007, which significantly intensified competitive pressures on local actors (Bouali, 2015). By 2008, online advertising expenditures had already tripled, fueled by rapid growth in internet users and declining subscription costs. In parallel, newspapers began launching electronic editions, while state acceptance of social media and e-commerce expansion further expanded the advertising ecosystem. Internet penetration rose from approximately 150,000 users in 2006 to 18.6 million in 2015 ((ARPT), 2016), creating a critical mass that enabled more precise targeting strategies.

Current data confirm this trajectory: advertising spending on social media is expected to reach €58.6 million by the end of 2024 and €69.6 million by 2028 (Statista, 2024). Yet, this quantitative expansion remains embedded in a transitional stage, where deep algorithmic personalization and mature programmatic systems are still in development. Structural challenges persist, including weak institutional regulation, the absence of standardized metrics for impressions and engagement, limited transparency in pricing models, and the digital divide between urban and rural areas. Such constraints undermine trust among major advertisers and restrict broader investment in advanced digital formats.

Comparatively, while global markets are addressing concerns such as privacy, oversaturation, and algorithmic dependence, Algeria's industry faces a dual challenge: catching up with global standards in data analytics and governance while simultaneously overcoming local infrastructural and institutional weaknesses. The entry of international agencies since 2007 introduced higher technical benchmarks in targeting and automation but also accentuated the structural asymmetry between global actors, who dominate through advanced analytics, and local agencies, which remain reliant on generalized service models. This situation underscores the need for regulatory incentives, investment in measurement infrastructures, and capacity-building in data analysis. Such reforms would allow Algeria to move beyond a phase of quantitative growth driven primarily by user expansion and spending toward a qualitative transformation where greater value is extracted per advertising unit. In this sense, Algeria's experience exemplifies both the opportunities and

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vulnerabilities of digital advertising in emerging markets, highlighting the importance of bridging local structural gaps while engaging with global technological trends.

8. Future Prospects of AI-Driven Electronic Advertising in Algeria

The Algerian digital advertising sector is at a crossroads. Global trends in artificial intelligence (AI) and interactive advertising intersect with local structural constraints. While international markets utilize AI to enhance personalization, interactivity, and targeting (Huh, 2023), Algeria is currently in a transitional phase. Here, quantitative growth outweighs qualitative sophistication (Bouali, 2015).

Key global challenges, such as audience saturation, algorithmic dependence, and declining trust (Chaffey, 2022), are emerging in Algeria. These are influenced by local conditions such as limited regulatory oversight, lack of standardized metrics, and infrastructure gaps between urban and rural areas ((ARPT), 2016). Algeria faces a dual challenge. It must address global risks, such as data privacy, transparency, and ethical governance (jung, 2025). At the same time, it must overcome domestic obstacles, including weak institutional support and technical capacity .

AI-driven advertising could benefit Algeria. Generative AI and interactive formats, such as chatbots and augmented reality, may help agencies reduce costs and personalize their content. These tools can also strengthen consumer–brand relationships (Ramaswamy, 2023). However, with weak regulatory frameworks and limited investment in analytics, these innovations could exacerbate the gap between global and local players. Domestic agencies may become further marginalized .

The future of AI-driven advertising in Algeria relies on closing the gap between global technology and local reforms. Algeria should adopt transparent governance, build technical skills, and encourage ethical practices. These steps will help transform electronic advertising from rapid but uneven growth to a sustainable ecosystem that aligns with international standards .

Table 3: Evolution of Electronic Advertising in Algeria: Key Phases and Constraints

Period	Key Developments	Main Constraints
2006–2007	local online agency (2006); entry of international firms (2007	Limited infrastructure; weak local expertise.
2008–2015	Tripling of expenditures; rise of e-newspapers; internet users grew to 18.6M.	Lack of regulation; no standardized metrics; low transparency.
2016–2024	Rapid social media expansion; projected €58.6M ad spending by 2024	Digital divide; persistent transparency issues.

Beyond 2025	Shift toward AI-driven, immersive, and predictive advertising	Weak regulatory adaptation; low local technological capacity.
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Conclusion

The analysis of Algeria's experience with electronic advertising reveals a trajectory marked by late entry yet rapid quantitative expansion. Since the mid-2000s, the sector has benefited from increasing internet penetration, the proliferation of social media platforms, and the growing integration of e-commerce. However, this growth remains predominantly numerical rather than qualitative, constrained by weak institutional regulation, a lack of standardized measurement tools, limited transparency, and the persistence of the urban–rural digital divide. The arrival of international agencies introduced higher technical benchmarks but simultaneously reinforced structural asymmetries, leaving local actors at a competitive disadvantage.

In this respect, Algeria illustrates the dual challenge facing emerging markets: bridging domestic infrastructural and institutional gaps while keeping pace with global transformations in programmatic and AI-driven advertising. Future progress depends on strengthening governance frameworks, investing in measurement infrastructures, and building professional capacities in data analysis and digital strategy. Only by addressing these foundational issues can Algeria move beyond quantitative expansion toward qualitative maturity, ensuring that advertising communication evolves into a sustainable driver of both economic development and cultural transformation.

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