



Anticipating the Future of Media Economics in the Era of Artificial Intelligence: A Scenario-Based Approach

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Abstract ;

This study seeks to explore the future of media economics in the era of artificial intelligence by addressing several theoretical concepts related to media economics and artificial intelligence. It adopts a prospective approach based on scenario analysis and examines three potential scenarios. The scenarios reveal divergent possibilities for the future of the media industry, with significant opportunities for improvement and innovation on the one hand, and challenges that may threaten the continuity and sustainability of the industry on the other. The analysis highlights the importance of media organizations investing in technology and establishing strategic partnerships in order to adapt to transformations and capitalize on emerging opportunities. The recommendations proposed provide a framework for digital transformation and revenue diversification, thereby enabling the media industry to sustain its development in the era of digital technology and artificial intelligence.

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Introduction

In the era of the technological revolution currently transforming the world, the media industry has become one of the sectors experiencing the most significant influence and change. The increasing use of technology and the development of artificial intelligence reflect profound transformations in the ways in which media content is produced and consumed. Consequently, increasing attention has been directed toward media organizations not merely as sources of information and entertainment, but also as major economic entities. Within this context, the media sector faces numerous challenges and opportunities in the era of artificial intelligence.

Research Problem

This study seeks to examine how artificial intelligence affects media economics and how media organizations can adapt to these rapid transformations in order to understand their implications for business models, market developments, and the challenges associated with maintaining the quality and credibility of media content.

Hypotheses

- ✓ Artificial intelligence technology will lead to structural changes in the media industry.
- ✓ Artificial intelligence will affect media business models and lead to new approaches to marketing and distribution.
- ✓ The effective utilization of advanced technology may become a major source of competitive advantage for media companies in the future.

Significance of the Study

The significance of this study derives from the need to understand the effects of artificial intelligence on media economics and to identify the opportunities and challenges associated with these developments. Understanding these dynamics can help media organizations adapt to changes and develop new strategies to maintain their competitiveness in a rapidly changing environment.

Objectives of the Study

This study aims to:

- ✓ Analyze the effects of artificial intelligence on media economics.
- ✓ Explore transformations in media business models in light of technological developments.

- ✓ Identify the major challenges and opportunities facing the media industry in the era of artificial intelligence.

Axis One: Conceptual Framework of Media Economics and Artificial Intelligence

1. Media Economics

1.1. Definition of Media Economics

Media economics is a branch of applied economics concerned with the study of the production, distribution, and consumption of media content (Kafi, 2015, p. 12)

- ***Production:*** Production refers to the process of organizing work within a program and coordinating its technical components within the limits of the available budget, including material, technical, technological, and human expenditures
- ***Distribution:*** Distribution refers to the delivery of media content to audiences. This may involve the distribution of newspapers through transportation systems, radio services through the airwaves, or television services through satellites and Internet services
- ***Consumption:*** Consumption refers to the extent to which audiences accept media content and the forms in which media messages are presented

These elements require sources of financing to cover costs and generate profitability. The principal sources of financing include:

- ✓ Advertising and publicity: payments made with the aim of influencing behaviors and attitudes.
- ✓ Program sales.
- ✓ Institutional sponsorship.
- ✓ Government or private-sector support.

Robert Picard defines media economics as the study of how media organizations meet the informational and entertainment needs and desires of audiences, the needs of advertisers, and the needs of society as a whole using the resources available to them (University of Chlef, n.d.).

1.2. *Economic Characteristics of Media* (Benazza)

Media has increasingly become a commodity like any other commodity, incorporating the economic resources commonly referred to as the **5Ms**: Money, Manpower, Materials, Machines, and Management (University of Chlef, n.d.).

Media organizations have also become economic institutions in which their economic and productive dimensions are closely connected with their media functions, which primarily target consumers. Since media organizations constitute economic entities, economic considerations influence their behavior, decisions, and activities. Audiences, including readers and advertisers, represent important factors influencing these organizations through their selection of preferred media materials and through the payments they make for both media and advertising services.

Media production, in its final form, must generate economic utility, particularly profitability, in a manner that ensures a return on invested capital and enables organizations to continue providing their services and fulfilling their media mission.

Competition within media organizations is not limited to the manner in which media messages are presented or to the content of those messages, including information and ideas. Rather, it also involves competition for markets (Benazza).

Furthermore, the media product is characterized by rapid obsolescence, rapid and costly distribution, substantial capital requirements, and a high degree of risk .

2. *Artificial Intelligence*

2.1. *Definition of Artificial Intelligence*

Artificial intelligence can be described as the science that enables machines to think in ways similar to human beings, or, metaphorically, as a computer with a mind. It encompasses behaviors and characteristics exhibited by computer programs that enable them to simulate human intellectual abilities and patterns of operation. Among its principal characteristics are the ability to learn, infer, and respond to situations for which the machine has not been explicitly programmed (Al-Sisi, 2023, p. 65).

Artificial intelligence is also a field that seeks to develop highly efficient computer systems whose performance resembles that of human experts. It refers to the ability of machines to imitate

and simulate human physical and mental processes, including the ways in which humans think, reason, respond, and benefit from previous experiences. In this sense, artificial intelligence represents an attempt to emulate the human mind and perform functions traditionally associated with it (Al-Sisi, 2023).

Artificial intelligence possesses numerous characteristics and capabilities, including the ability to solve problems in the absence of complete information, to think and perceive, and to acquire and apply knowledge. It can also learn and understand from previous experiences, utilize accumulated expertise in new situations, respond rapidly to new circumstances, deal with difficult and complex cases, manage ambiguous situations in the absence of complete information, distinguish the relative importance of elements within known situations, visualize and create, understand and interpret visual matters, and provide information to support decision-making (Elfifi & Med Amin, 2022, p. 761).

Artificial intelligence and its applications play an important role in improving and developing various areas of life. This occurs through the development of computer systems capable of operating with high levels of efficiency comparable to those of human experts. Such technological development has contributed to the increasing reliance on computers in various aspects of everyday life, particularly through the information revolution and technological developments that facilitate cultural communication and technological connectivity among people across different parts of the world.

2.2. Applications of Artificial Intelligence

Applications of artificial intelligence can be broadly classified into three principal areas:

- ***Cognitive Science Applications:*** These include:
 - ✓ Expert systems.
 - ✓ Learning systems.
 - ✓ Fuzzy logic.
 - ✓ Genetic algorithms.
- ***Intelligent Machine Applications:*** These include:
 - ✓ Visual perception.

- ✓ Tactile sensing.
- ✓ Dexterity.
- ✓ Mobility.
- ✓ Neural networks.
- ✓ Intelligent agents.
- **Natural Interface Applications:** These include:
 - ✓ Natural languages.
 - ✓ Speech recognition.
 - ✓ Multisensory systems.
 - ✓ Virtual reality.

Axis Two: Artificial Intelligence Technology—Challenges and Opportunities for the Media Industry

1. Challenges

- **Content Quality:** The media industry may face challenges in maintaining content quality, as automated technologies may produce lower-quality content as a result of technical limitations.
- **Credibility:** The use of intelligent technologies in content production may affect the credibility of the information provided, thereby increasing the challenges associated with combating fake news and media disinformation.
- **Changing Business Models:** The media may face challenges in adapting to changes in business models due to the impact of technology and artificial intelligence, requiring the restructuring and updating of economic strategies.
- **Employment Threat:** Intelligent technologies may lead to the advancement and automation of media production processes and consequently reduce the need for human labor. This may create significant challenges for workers employed in traditional media.

The media industry may face difficulties adapting to changes in business models resulting from the influence of technology and artificial intelligence. Such developments may require the restructuring and modernization of existing economic strategies.

- **Privacy, Security, and Data Accuracy and Reliability:** Artificial intelligence technologies raise various issues concerning privacy and security. Personal data may potentially be used in unlawful or unethical ways, while the data employed by such technologies may itself be inaccurate or unreliable.
- **Changes in Advertising Models:** The media industry may face challenges arising from changes in advertising models as a result of technological developments and artificial intelligence. These changes may contribute to a decline in traditional advertising and an increase in demand for digital advertising.
- **Competition with Digital Companies:** Digital companies that employ intelligent technologies may pose a significant challenge to traditional media organizations, potentially resulting in intensified competition for revenues and audiences.
- **Changes in Consumption Habits:** Changes in consumption habits in the era of artificial intelligence may affect demand for traditional media content, potentially leading to declining revenues for some media organizations.
- **Competition with Content Creators**

In the era of artificial intelligence, the media industry faces increasing competition from content creators who rely on technology and digital platforms to produce and distribute content.

This competition can be observed in several areas. and others.

This has increased the diversity of content available to consumers and, consequently, intensified the challenge of attracting audiences and viewers.

- ✓ **Increased Content Diversity:** Content creators include individuals, companies, and small and large organizations producing content through platforms such as YouTube, Instagram, TikTok
- ✓ **Cost Flexibility:** Technology has made content production more flexible than ever, thereby increasing its competitiveness in the market. Individuals and small organizations can produce high-quality content at relatively low costs compared with traditional media organizations.
- ✓ **Precise Audience Targeting:** Content creators can target audiences precisely by using analytics and data to understand users' preferences and interests. This provides them with a competitive advantage in attracting specific target audiences.

✓ ***Innovation and Renewal:*** Content creators possess considerable flexibility in innovation and renewal. They can experiment rapidly with new formats and content at relatively low costs, enabling them to adapt to rapid changes in audience interests.

✓ ***Interaction and Engagement:*** Content creators can establish strong relationships with their audiences through continuous interaction and engagement on social media platforms, helping them attract and retain audiences.

Because content creators possess advantages such as flexibility, innovation, and precise audience targeting, they represent a significant challenge to traditional media organizations in attracting audiences and maintaining revenues.

2. Opportunities:

Content Personalization: Artificial intelligence can enable media content to be personalized for individual users according to their interests and specific needs. This can enhance the user experience and increase engagement.

Improved Inference and Analysis: Artificial intelligence can contribute to a better understanding of media data, enabling producers and publishers to make more informed and strategically oriented decisions.

Improved Efficiency and Productivity: Artificial intelligence applications can improve the efficiency of media production processes and facilitate the delivery of higher-quality content at lower costs.

Improved User Experience: Artificial intelligence can contribute to improving the user experience and increasing interaction and engagement with media content by providing personalized and distinctive content.

Development of Business Models: The media industry can utilize technology and artificial intelligence to develop new business models, including subscriptions, targeted advertising, and paid content.

Exploiting Digital Advertising: Media organizations can benefit from increasing demand for digital advertising and develop new marketing strategies based on technology and data.

Expanding the Audience: Media organizations can use technology and social media to reach broader audiences and increase revenues through higher numbers of subscribers and viewers.

Development of Paid Services: Media organizations can introduce new paid services, such as subscriptions providing access to exclusive content or advertising-free content, thereby contributing to increased revenues.

Cooperation with Technology Companies: Media organizations can benefit from cooperation with technology companies in developing new and innovative solutions that contribute to increasing revenues and enhancing users' media experiences.

Improved Use of Data: Artificial intelligence can facilitate a better understanding of media data, enabling producers and publishers to make better decisions based on data.

Exploiting Big Data: Big Data represents an essential component of the transformation of the media industry in the era of artificial intelligence and offers substantial opportunities. It can be exploited in the media industry in several ways:

Understanding Audiences :Big Data can be used to understand consumer preferences and behavior and consequently develop media content that corresponds to their interests and attracts their attention more effectively.

Improving the User Experience: Big Data can be used to personalize and improve the user experience, whether by providing personalized content or by improving website and application interfaces.

✓ **Improving Advertising and Marketing:**Big Data can be used to target advertising precisely toward specific audiences and analyze advertising campaign performance in order to improve marketing strategies.

✓ **Content Analysis:** Big Data can be used to analyze trends in media content, including identifying major or trending issues, producing performance reports, and analyzing audience feedback.

✓ **Product and Service Development:** Big Data can be used to understand market needs and develop new media products and services capable of meeting those needs.

✓ **Forecasting and Prediction:** Big Data and statistical analysis techniques can be used to forecast industry trends and anticipate future developments, thereby supporting more effective strategic decision-making (Miziani, p. 476).

Axis Three: A Prospective Study Using Scenario Analysis

1. Trend-Based (Linear) Scenario

Under this scenario, technological development continues at a moderate pace, while artificial intelligence is increasingly adopted within the media industry. Media organizations gradually adopt new technologies and focus on improving productivity and providing enhanced user experiences. Investment in artificial intelligence technology increases, while services and content evolve in accordance with audience needs and preferences, with some traditional elements of existing business models being retained.

- ***Artificial Intelligence Applications for Productivity:*** Media organizations begin to use artificial intelligence technologies in daily production processes, including automated content generation, data analysis, and improvements in the speed and efficiency of operations.
- ***Improving the User Experience:*** Media organizations invest in improving the user experience through artificial intelligence technologies, including personalizing content and advertisements according to audience interests and improving user interfaces and browsing experiences.
- ***Data Analysis to Guide Decision-Making:*** Media organizations increasingly rely on data analysis to better understand users' preferences and behaviors and, consequently, to guide production and marketing strategies accordingly.
- ***Revenue Diversification:*** Media organizations seek multiple sources of revenue through technology and artificial intelligence, including digital advertising, subscriptions, and online retail.
- ***Gradual Transformation and Adaptation:*** Traditional media organizations coexist with technological changes at a gradual pace, allowing them to adapt and transform without placing their operations at significant risk.

This scenario depicts gradual and relatively stable development in the media sector, with an emphasis on exploiting technology and artificial intelligence to improve productivity and provide

enhanced user experiences without radically restructuring traditional business models (Miziani, 2016).

2. Reformist (Optimistic) Scenario

Under this scenario, the media sector experiences major positive transformations as a result of technological progress and advanced applications of artificial intelligence. Media organizations widely adopt artificial intelligence technologies, leading to substantial improvements in content quality and user experience, as well as the provision of more personalized services. Consequently, demand for digital advertising increases and revenues rise significantly.

to generate distinctive content that is relevant to audience interests and deliver it through innovative and efficient methods.

Artificial Intelligence Applications in Production and Distribution: Media organizations use technology and artificial intelligence in production and distribution processes, enabling them

Improving User Experience and Interaction: The sector focuses on improving user experience and enhancing interaction with media content by using artificial intelligence to personalize content and provide innovative, engaging, and interactive experiences.

- **Data Analysis and Decision-Making:** Media organizations invest in advanced data analysis to understand audience preferences and guide decision-making more effectively. This enables them to identify audience needs and satisfy them more accurately.

- **Revenue Diversification and Added Value:** The sector diversifies its sources of revenue through subscriptions, targeted digital advertising, and premium services. This contributes to increased added value and sustainable revenue growth.

- **Strategic Partnerships and Cooperation:** The media sector develops strategic partnerships with technology companies and start-ups, enabling it to gain access to the technologies and resources required to achieve positive transformations rapidly and efficiently.

This scenario depicts positive transformation and sustainable development within the media industry, with a strong emphasis on innovation and the effective use of technology to achieve improvements in performance and revenues (Miziani, 2016).

3. Radical (Pessimistic) Scenario

Under this scenario, the media sector faces major challenges as a result of rapid technological advancement and the extensive use of artificial intelligence. Technological development exceeds the capacity of media organizations to adapt, resulting in declining content quality, deteriorating user experiences, and declining revenues. Financial challenges intensify, leading to a reduction in the number of traditional media organizations operating in the market and ultimately producing a radical transformation of the industry.

- ***Declining Content Quality and User Experience:*** An excessive and rapid focus on the use of artificial intelligence technologies leads to declining content quality and a deterioration in the user experience. This may result in audience loss and reductions in viewership and revenues.
- ***Collapse of Traditional Business Models:*** Rapid changes in technology and consumer behavior may lead to the collapse of traditional media business models, resulting in the closure of numerous traditional media organizations and job losses.
- ***Worsening Financial Problems:*** Declining revenues combined with the high costs associated with implementing technology and artificial intelligence intensify the financial difficulties faced by media organizations, making it increasingly difficult for them to remain in the market.
- ***Expansion of the Digital Divide:*** Rapid technological transformation and the adoption of artificial intelligence may widen the digital divide between large companies possessing substantial resources and small and medium-sized enterprises that lack the capacity to keep pace with technological developments.
- ***Declining Public Trust:*** The deterioration of content quality and user experience, together with the widening digital divide, may increase skepticism and reduce public trust in the media industry, thereby reinforcing negative transformations.
- ***Increased Regulation and Monitoring:*** Declining content quality and user experience, together with financial difficulties, may lead to increased regulation and monitoring by

governmental bodies and non-governmental organizations, further complicating the conditions facing the industry.

This scenario presents a dark and pessimistic picture of the future of the media industry under technological development and the increasing use of artificial intelligence. The industry faces major challenges that threaten its continuity and its ability to survive in the market.

The three scenarios provide different visions of the development of the media sector under the use of artificial intelligence and reflect the diversity of possible future outcomes (Miziani, 2016).

Conclusion

This study examined three potential scenarios for the future of the media industry in light of technological advancement and the increasing use of artificial intelligence. Analysis of these scenarios leads to several conclusions concerning the future of the industry.



Divergence in Future Outcomes

The different scenarios indicate that the future of the media industry may vary considerably. In some circumstances, the industry may experience major positive transformations, whereas in others it may face substantial challenges.



Impact of Technology

All three scenarios indicate that technology and the use of artificial intelligence will have a significant impact on the future of the media industry. This impact may take the form of improved productivity and content quality or, alternatively, threats to traditional business models.



Challenges and Opportunities

The scenarios demonstrate that the media industry faces substantial challenges in responding to technological transformations. At the same time, these transformations create new opportunities for innovation and improved performance.

Based on the findings above, the following recommendations can be proposed:



Investment in Technology

Media organizations should invest in technology and employ artificial intelligence effectively in order to improve content quality and enhance the user experience.



Revenue Diversification

Media companies should diversify their sources of revenue and seek new sources of income, including subscriptions and premium services.



Digital Transformation and Adaptation

Traditional media organizations should undertake digital transformation and adapt rapidly to technological changes in order to remain in the market and compete effectively.



Cooperation and Partnerships

Media companies should establish strategic partnerships with technology companies and start-ups in order to benefit from emerging technologies and achieve positive developments.

By implementing these recommendations, the media industry can improve its ability to adapt to technological transformations, exploit emerging opportunities, achieve sustainable growth, and enhance both performance and revenues.

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