ISSN 2312-5160
online ISSN 2786-4502

Current Issues of Mass Communication, Issue 38 (2025)

Journal homepage: https://cimc.knu.ua/index

RESEARCH ARTICLES
ДОСЛІДНИЦЬКІ СТАТТІ

https://doi.org/10.17721/CIMC.2025.38.55-68

Contemporary Digital Technologies of Media Communication in Social Media: A Typological Classification

Yurii Bondar, Pavlo Shtelmakh
Taras Shevchenko National University of Kyiv, Ukraine

The study examines the latest communication technologies of the digital age, which are changing the ways and effectiveness of conveying information to the media audience. Scientific literature shows fragmentation in defining the boundaries, terminology, and classification of means of conveying information in the digital age, which necessitates a unified approach to analyzing the latest communication practices. The **purpose** of this article is to review existing research on contemporary technologies in mass communication, to classify the latest technologies for conveying information in the digital environment and to identify the key vectors of their application in the context of mass communication. The authors consider social media, streaming services, and the latest television, some advertising platforms, automatic translation tools, analytics, and crowdsourcing platforms as part of the latest communication technologies. The **methodology** is based on theoretical analysis, content analysis, typological, and comparative methods. The study proposes a typological structure of the contemporary communication technologies based on the following criteria: communication format, degree of automation, role of the audience, nature of personalization, and algorithmic control. The **results** of the study can be applied in future detailed studies on the development of media management, information policy, and digital security strategies. They also contribute to the formation of a scientific basis for further research in media communications in the context of the modern digital transformations.

Keywords: social media, modern digital technologies, new information technologies, social networks, streaming platforms

Citation: Bondar, Y., & Shtelmakh, P. (2025). Contemporary digital technologies of media communication in social media: A typological classification. *Current Issues of Mass Communication*, *38*, 55–68. https://doi.org/10.17721/CIMC.2025.38.55-68.

Copyright: © 2025 **Yurii Bondar, Pavlo Shtelmakh**. This is an open-access draft article distributed under the terms of the **Creative Commons Attribution License (CC BY)**. The use, distribution or reproduction in other forms is permitted, provided the original author(s) or licensor are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted if it does not comply with these terms.

ISSN 2312-5160
online ISSN 2786-4502

Сучасні цифрові технології медіакомунікації в соціальних мережах: типологічна класифікація

Юрій Бондар, Павло Штельмах
Київський національний університет імені Тараса Шевченка, Україна

У дослідженні розглядаються новітні технології комунікації цифрової епохи, що змінюють способи та ефективність донесення інформації до аудиторії ЗМК. У науковій літературі спостерігається фрагментарність у визначенні меж, термінології та класифікації засобів донесення інформації у цифрову добу, що зумовлює потребу в уніфікованому підході до аналізу новітніх комунікаційних практик. **Мета** статті – оглянути наукову літературу, що стосується теми сучасних технологій масової комунікації, здійснити класифікацію новітніх технологій донесення інформації в цифровому середовищі та визначити ключові вектори їх застосування в контексті масової комунікації. Автори розглядають соціальні медіа, стримінгові сервіси, деякі рекламні платформи, інструменти автоматичного перекладу, платформи аналітики та краудсорсингу як частину сучасних комунікаційних технологій. **Методологія** базується на теоретичному аналізі, контент-аналізі, типологічному та порівняльному методах. У межах дослідження сформовано типологічну структуру новітніх технологій комунікування за критеріями: формат комунікації, ступінь автоматизації, роль аудиторії, характер персоналізації та алгоритмічного контролю. **Результати** дослідження можуть бути застосовані в розробці стратегій медіаменеджменту, інформаційної політики та цифрової безпеки. Вони також сприяють формуванню наукового базису для подальших досліджень у сфері медіакомунікацій в умовах цифрової трансформації соціальних комунікацій.

Ключові слова: соціальні медіа, сучасні цифрові технології, новітні інформаційні технології, соціальні мережі, стримінгові платформи

The modern information space is characterized by the rapid development of technologies that deliver information and shape public opinion through ideological messaging, commercial communication, and political discourse. In the context of digital transformation, media actors increasingly rely on tools such as artificial intelligence, algorithmic recommendation systems, crowdsourcing platforms, streaming services, and augmented reality. While the academic literature has addressed many of these technologies individually, there is still no systematic classification of contemporary media communication technologies. This niche complicates both the theoretical understanding of new tools and their practical application in information policy, strategic communications, and journalism.

To address this gap, the present study draws on McQuail's theory of mass communication and develops a typology of emerging media influence technologies. The research is guided by the following questions:

RQ1: How can contemporary media communication technologies be systematically classified in terms of McQuail's mass communication concepts (power, integration, enlightenment, and commodification), and how do factors such as automation, algorithmic control, and personalization reshape the traditional sender-receiver relationship?

RQ2: What are the strengths and weaknesses of different media technologies in relation to McQuail's functions of mass communication – i.e., their capacity to shape opinion (power), foster

Yurii Bondar https://orcid.org/0000-0002-8490-6744
Pavlo Shtelmakh https://orcid.org/0000-0003-2214-1333

It is a report on the research of the director of the Educational and Scientific Institute of Journalism, Taras Shevchenko National University of Kyiv, Ph.D. (political sciences) Yurii Bondar and Ph.D. student at the Educational and Scientific Institute of Journalism, Taras Shevchenko National University of Kyiv Pavlo Shtelmakh.

The authors declare no conflict of interest. The sponsors were not involved in the research design, collection, analysis or interpreting the data, or writing the manuscript.

Corresponding author's email: Pavlo Shtelmakh paulshtelmakh@knu.ua

ISSN 2312-5160
online ISSN 2786-4502

or weaken social integration, provide reliable knowledge (enlightenment), or risk manipulation and disinformation – especially within journalism, strategic communication, and information policy?

Accordingly, the purpose of this research is to develop a classification of contemporary media communication tools and to examine their role in the socialization of Internet users. By combining conceptual analysis with comparative assessment, the study contributes to the theoretical foundations of media studies while offering practical insights for journalists, policymakers, and communication strategists.

Literature review

Classical mass communication theory emerged in the early 20th century from a threefold concern: the power of new communication media, their role in social integration or disintegration, and their potential to promote or undermine public enlightenment. Early optimism about media as educational and integrative forces sat alongside fears about their manipulative potential – worries reinforced by wartime propaganda and authoritarian uses of press and cinema. These foundational tensions continue to shape debates today, even as technologies and social contexts have changed. This is one of the key tenets in McQuail's mass communication theory (McQuail, 2010). We apprehend some statements from this theory: the power of media, communication and social integration, one-way communication from mass media to mass audience, and expanding the theory by comparing contemporary mass communication technologies and approaches that they imply in social media and social networks.

McQuail's overview highlights core theoretical features of mass communication: large-scale distribution, one-directional flow, asymmetry between sender and receiver, standardization and commodification of content. These elements still provide a useful analytic baseline, but their applicability must be reconsidered in contexts where interactivity, personalization and multi-directional flows occur (social platforms, streaming, user-generated content). The shift from purely "transmission" models towards interactional, networked, and algorithmically mediated models is a major theoretical evolution.

The emergence of digital technologies has profoundly affected the media landscape, a transformation widely documented in academic literature. While Jean Chalaby (2024) provides a detailed economic analysis of streaming platforms, highlighting how their advertising models echo those of 19th-century newspapers, his focus remains largely on the business aspect. Similarly, Yurii Bondar (2018), Volodymyr Rizun and Yurii Havrylets (2024) discuss the broader socio-political implications and the growing influence of media on mass consciousness.

However, a closer look at the existing body of research reveals a significant gap. While these scholars successfully identify the effects of digital media – be it new business models or stronger societal influence – they often lack a focus on the specific mechanisms by which these effects are achieved, especially in a local or regional context. The shift in paradigm from studying media effects to media effectiveness, as noted by Artem Zakharchenko (2023), underscores this transition, yet a detailed examination of how specific technologies, like social media algorithms or AI, shape communication goals in practice remains underdeveloped.

This is where the findings of Jiao et al. (2025) and Koukaras et al. (2020) become particularly relevant, as they signal the rapid integration of AI and new technologies into daily life. This proliferation of new tools creates a discrepancy: we have a growing number of new digital platforms and technologies, but a limited understanding of how these specific tools are being harnessed to manipulate or shape media narratives. Therefore, while prior research provides a strong theoretical foundation for understanding the evolution of media, they do not adequately address the nuanced, platform-specific inconsistencies in how these new technologies are changing user behavior and content consumption.

ISSN 2312-5160
online ISSN 2786-4502

This study *aims* to bridge this gap by outlining most of the modern digital and AI-powered technologies in daily usage on social media and in communications. By focusing on specific technological solutions and providing clear definitions, this research will offer new insights into the discrepancies between the theoretical understanding of media's influence and its practical application in a digital-first environment.

In-depth citations from the literature

The issue of the emerging digital technologies and their impact on media is widely researched around the world and some of these studies will be relevant to understand the current level of understanding of the issue and the views held by fellow academics. Prof. Jean Chalaby looks at the economics of the media industry and the impact of new streaming platforms that are rapidly replacing traditional and cable TV on home screens:

> The business model of video-on-demand advertising platforms is based on bringing viewers and advertisers together. This principle is not new, and the Video-on-Demand advertising service was preceded by newspapers in the 19th century and radio stations in the 20th century. Newspapers have always relied on advertising revenue, but in the late 19th century, press magnates were the first to transform newspaper content to create a mass audience and establish a correlation between the price of advertising space and the number of readers (Chalaby, 2024).

This study discusses the business models and revenue streams of streaming platforms. The defining feature of websites that sell movies and TV series is the fact that these websites do not own the product (movies), but rather rent them in order to sell the viewing of this work to the end consumer. So scientific research of communications and business interests walk hand in hand.

Yurii Bondar writes about globalization and the active transformation of the media in his work "Information and Publishing in the Context of Socio-Political Transformations" as follows:

> With the development of information technology, social communication connections are also developing (and sometimes becoming more complicated), which directly affects the formation of mass, including political, culture and, accordingly, the socialization of society. The realities of all-information give grounds to talk about new trends and phenomena emerging in the process of socio-political transformations and the practice of the information society. Such trends and phenomena certainly require attention and comprehension in both practical and scientific and theoretical aspects (Bondar, 2018).

Volodymyr Rizun and Yurii Havrylets wrote the following about media influence:

> The media have always influenced the mass consciousness, using their own methods of influencing the audience. With the diversification of the media system and the emergence of new types of media, their influence is becoming stronger, more diverse, and has stronger consequences (Havrylets & Rizun, 2024).

Their approach and recent examples of media influence are a useful example for researchers of social communications and mass media.

The paradigm of media communication research has shifted from studying the means of communication themselves to studying their effectiveness, the achievement of a certain communication goal. Artem Zakharchenko writes about this in his doctoral dissertation:

> The formation of the concept of mediatization has seen a paradigm shift from the study of effects to the study of communication effectiveness; from the study of media influence to the perception of communication as an organized action using various tools. As this action takes place in the

ISSN 2312-5160
online ISSN 2786-4502

communication system, measurement has its own peculiarities in different countries, depending, in particular, on the level of control – state or otherwise – over goal-setting in communication (Zakharchenko, 2023).

Chinese researchers from Beijing Normal University in their article "The Relationship between Digital Technologies and Innovation: Overview, Critique, and Research Agenda" record a significant increase in the number of scientific studies devoted to the latest technologies, which indicates the active introduction of new digital technologies, AI models and algorithms of social media, and media content consumption services into our daily lives (Jiao, Wang, Libaers, Yang, & Hu, 2025).

Greek researchers from Thessaloniki categorize social media by type. They recognize that while there are many different social media platforms on the market, users often need a one-stop shop to meet all or almost all of their needs (Koukaras, Tjortjis, & Rousidis, 2020).

All aforementioned investigations provide us with an opportunity to contemplate the basic concepts of media, media communication, evolution and development of social, communication and digital technologies, as well as to cover a small fraction of what has been lately happening in the field of artificial intelligence. Moreover, AI tools are already changing the way we use and understand social communications.

While existing research has examined specific technologies or platforms separately (Chalaby, 2024, etc.), little attention has been paid to how these technologies can be systematically classified within a unified framework. Moreover, most studies lack focus on the hybrid role of algorithms in reshaping sender-receiver relations. This article attempts to fill that gap.

Method

This study employed a combination of methods to achieve its goals and objectives:

1. Literature analysis (theoretical analysis)

Theoretical analysis was used to identify the evolution of the concept of "media communication" in the context of transition to a digital and algorithmic environment. Despite the existence of well-established classifications (R. Harris, D. McQuail), their adaptation to the social media environment with its interactive nature and personalized feeds allows us to clarify the parameters of modern influence.

2. Comparative analysis

The article provides a comparison between different groups of technologies based on the nature of their communication approaches, strengths, and weaknesses of media mechanisms. The method allowed us to compare each technology by several criteria: nature and means of media communication; strengths (e.g., high engagement, targeting accuracy, translation optimization); weaknesses (risk of manipulation, algorithmic distortion, data instability, distrust of sources).

3. Typological (classification) analysis

The classification of the latest media communication technologies has been formulated in accordance with their functional features, communication channels, level of interaction with the audience, and intensity of audience reach.

The comprehensive application of these methods allowed to thoroughly analyze the research object and to define reasonable supported conclusions.

ISSN 2312-5160
online ISSN 2786-4502

Results

As examples of the latest technologies of media communication, we consider the latest technologies that are crucial in defining modern media field and actively contribute to the formation of the information society, actively involving individuals in their vast network of content that is constantly expanding.

Streaming Platforms

Streaming services such as YouTube, Netflix, and Twitch have transformed the model of content consumption from the once linear television to personalized viewing (Haydak, 2024). These services make the possibility of a detailed choice of content possible for consumers (Baker, 2024).

Streaming platforms are online services that deliver media content (video, audio, live events, etc.) over the Internet to users on demand and in real time. Instead of downloading content, this technology allows for immediate display and consumption of media content on various devices. These services feature:

- personalization algorithms;
- recommendation systems;
- interactive and serial content;
- possibility of instant response and community formation.

Streaming platforms have fundamentally changed how news is produced and consumed. Digital journalism leverages these platforms to:

- *Break news in real time*: journalists can use live-streaming features on platforms like Twitch and Facebook Live to broadcast from the scene of a breaking news event, providing immediate, unedited coverage. This creates a sense of "liveness" and urgency that traditional media can't always match (Foxman et al., 2024).
- *Engagement with the audience*: platforms with interactive features, such as live chat and Q&A functions, allow journalists to directly engage with their audience. This builds a stronger connection and can help establish trust and credibility.
- *Delivering long-form content*: services like YouTube and podcasts on Spotify allow news organizations to produce and distribute in-depth, long-form content that might not fit the format of a traditional news broadcast or article. This includes documentaries, interviews, and deep dives into complex topics via experts discussing the topic over hours-long recordings.
- *Monetize content*: news outlets can use streaming platforms to create new revenue streams through ad revenue, subscriptions, and even direct donations from viewers, which brings the community-building feature to a whole new level. At first aimed to support independent creators, now big news outlets can profit from streaming platforms ads revenue as well, and build a community of so-called patrons, who donate money for exclusive content or simply to support their preferred news outlet regularly.

Social Media (Social Networks)

Social media platforms such as Facebook, Instagram, TikTok, and X (formerly Twitter) have evolved into powerful instruments for shaping public opinion. Their influence depends significantly on who controls the narrative and which audiences are drawn into specific informational systems. In post-industrial societies, social media have become synonymous with modern information behavior, functioning as primary communication channels, news sources, and even marketplace, creating an entire e-commerce section of the retail market. In this regard, they can be considered universal infrastructures for information exchange and interaction (Goulart).

At the core of their mediation power lie technological mechanisms that drive the creation, spread, and impact of information, including:

- Algorithmic curation of news feeds, which dictates content visibility and engagement;

ISSN 2312-5160
online ISSN 2786-4502

- Content virality and distribution dynamics, enabling rapid amplification of narratives;
- Emergence of digital opinion leaders and influencers, who shape discourse within niche communities;
- Paid, targeted advertising, which personalizes influence and reinforces message reach towards target audience.

Together, these mechanisms construct a dynamic ecosystem of influence, in which social media users are not only consumers but also active participants in the reproduction and transformation of public discourse.

Machine translators for journalism

Tools such as Google Translate, DeepL, expand the possibilities of international communication by making it extremely easy for professional translators and creative personnel of media outlets to translate large amounts of text into different languages, which reduces the workload of translators in newsrooms and allows people with sufficient language skills to quickly translate and publish materials in different languages. The impact of globalization and technological development on the field of translation, particularly in the context of journalism, has been profound:

> the term globalization has affected the translation field more than anything else… The burden in question occurred due to the circulation and speed of the upcoming tasks and the lengthiness of the documents demanded to be translated. This observation directly relates to modern journalistic practices, where the speed of news production and the global demand for accessible content place increased pressure on newsrooms to localize information efficiently and accurately (Mercan, Akgün, & Odacıoğlu, 2024).

Machine translation tools contribute to this process by enabling:

- Automation of content translation across multiple languages;
- Simultaneous multilingual publication, expanding audience reach;
- Cultural adaptation of messages, allowing for nuanced international communication;
- Acceleration of editorial workflows, supporting real-time journalism in a global context.

These capabilities make machine translators not just auxiliary tools, but integral components of the digital media infrastructure in the age of globalized news.

Advertising technologies (AdTech)

Digital advertising systems (Meta Ads, Google Ads, Programmatic platforms) allow to fine-tune the impact on the target audience. The most significant technological advancement in this area has been the use of so-called Machine Learning in the analysis, processing, and interpretation of advertising data, which allows for a significant increase in the amount of processed data, thus making it possible to more accurately predict the effectiveness of an ad for each individual user account (Chandrasekaran, 2025).

These tools include:

- geolocation and behavioral targeting;
- retargeting;
- native advertising in the content;
- creatives for each separate account based on big data.

Programmatic Advertising is the most common application of AdTech in journalism. Programmatic advertising automates the buying and selling of ad space (also known as ad inventory) using software and algorithms.

Real-Time Bidding (RTB): When a user visits a news website, an automated, real-time auction occurs in milliseconds. Advertisers bid on the available ad space, and the highest bidder wins the right to display their ad. This process is managed by a *Supply-Side Platform (SSP)*, which helps

ISSN 2312-5160
online ISSN 2786-4502

the publisher (the news outlet) sell its inventory, and a *Demand-Side Platform (DSP)*, which helps the advertiser buy it (Pippit.ai, 2025).

Benefits for Journalism: RTB allows publishers to maximize the revenue from every single page view by ensuring that ad space is sold to the highest bidder. It also makes it easier for smaller news outlets to compete with larger ones by giving them access to a global pool of advertisers.

Crowdsourcing and user engagement platforms

Platforms like Reddit, Change.org, and Wikipedia use the energy of a mass audience to create and distribute content. Types and applications of crowdsourcing: this technology is widely used to collect data in consumer research, replacing traditional sampling with online participants, e.g., on Amazon Mechanical Turk. According to the platform's website:

> Amazon Mechanical Turk (MTurk) is a crowdsourcing platform that makes it easy for individuals and companies to outsource their processes and tasks to a distributed workforce that can perform these tasks virtually. This can include anything from conducting simple data validation and research to more subjective tasks such as participating in surveys, moderating content, and more. (Amazon Mechanical Turk).

It also supports idea generation, open innovation, and customer-centric product development by involving customers, stakeholders, and investors in business processes (Goodman & Paolacci, 2017; Hammon & Hippner, 2012).

Contests and problem solving: Crowdsourcing contests involve posting tasks (e.g., design, programming) with monetary rewards, attracting a variety of solutions from a wide range of participants. Such contests are common on online platforms and have been studied in terms of their incentive structure and participant behavior (Segev, 2020; Afuah & Tucci, 2012).

Such technologies provide for:

- involving users in the media process;
- creating public awareness campaigns;
- strengthening the effect of trust in content through "social proof".

In the context of social media, social proof functions as a psychological mechanism that influences users through visible indicators of popularity, such as likes, comments, shares, or upvotes. Crowdsourcing platforms and comment-driven networks (e.g., Reddit, Wikipedia, Change.org) use social proof to build collective credibility and drive civic or informational engagement. Just as product reviews in the SaaS (Software as a Service) sector, these dynamics are leveraged to shape opinion and legitimize content choices.

Let us clarify the concept of "social proof" for a better understanding of the peculiarities of its application and the role of cloud and crowdsourcing technologies in this phenomenon.

> Social proof is a popular psychological tactic where people take into account user reviews and impressions to make different purchasing decisions. SaaS companies use social proof to demonstrate that their products provide a positive experience and meet user requirements. Building trust is key for SaaS businesses as customers look for long-term solutions rather than one-time purchases (PayPro Global, 2024).

Monitoring and analytics platforms

Tools such as CrowdTangle, Brand24, Meltwater, Google Trends are used to track the information field. Monitoring and analytics platforms are essential tools for collecting, processing, and analyzing large arrays of data in a variety of industries, including healthcare, manufacturing, social media, and software. These platforms allow organizations to gain insights, optimize operations, and proactively respond to emerging issues. Monitoring platforms in manufacturing analyze production data at multiple levels (planning, part program, program line) to optimize processing by

ISSN 2312-5160
online ISSN 2786-4502

tracking both high-frequency and low-frequency variables (Beudaert et al., 2019). AI platforms analyze social media data for marketing, reputation management, and competitor analysis, providing intelligent insights and personalized advice (Perakakis et al., 2019). Other systems focus on monitoring public sentiment and social attitudes, using sentiment analysis and machine learning to assess attitudes toward public policy and societal issues (Karyukin et al., 2021).

Specifically, in the field of international communication and media influence, these platforms enable:

- Prompt response to information threats and disinformation campaigns;
- Detection of "points of influence" – individuals, topics, or platforms driving engagement;
- Evaluation of content strategies, including the reach, engagement, and perception of media campaigns.

By combining data-driven intelligence with predictive analytics, such platforms empower organizations – including newsrooms, public institutions, and state media – to navigate the complex dynamics of digital public space and maintain resilience against information warfare and manipulative narratives.

As the answer to RQ1, our analysis shows that contemporary media communication technologies can be classified according to five criteria: communication format, degree of automation, role of the audience, personalization, and algorithmic control. When placed into McQuail's mass communication framework:

- *Power* is concentrated in technologies such as social media platforms and streaming services, where algorithms prioritize visibility and agenda-setting, often shaping what content audiences consume.
- *Integration* is supported by crowdsourcing platforms and interactive streaming tools that involve audiences as co-creators of content, fostering social cohesion or collective mobilization.
- *Enlightenment* is facilitated through machine translation tools and monitoring/analytics platforms, which expand access to multilingual information and provide data for informed decision-making.
- *Commodification* is most evident in advertising technologies (AdTech) and streaming monetization, where user data and attention are turned into market value.

In all these cases, automation, personalization, and algorithmic curation have reshaped the sender–receiver relationship. Audiences are no longer passive but actively influence message circulation (through shares, likes, and participation), while algorithms mediate what content is visible. This creates a *hybrid communication model* that combines elements of one-way mass communication with interactive, personalized, and data-driven exchanges.

The latest technologies of influence have significantly expanded the tools of mass communications, increasing their accuracy, flexibility, and efficiency. The amount of data that people and machines use to achieve their goals and increase the effectiveness of media influences has increased immeasurably. However, it has also raised a number of challenges: ethical, technical, and political. In the future, it is advisable not only to classify these technologies, but also to assess their impact in different contexts: national, international, commercial, and political. Here, it would be appropriate to analyze the "classical" and newest technologies of media influence in the public broadcasting systems of different countries of the world and Ukraine. Some research on the origin and evolution of broadcasting systems in the world has already been conducted (Horodenko & Shtelmakh, 2024).

These technologies imply a number of weak points that can strongly impact the ethics of how we use news and communication in our digital age, they include:

- *Algorithmic Distortion and Dependence*: Many of these technologies, especially streaming and social media, rely on algorithms that can lead to creating "information bubbles" for end users and a dependency on how these algorithms shape what content a user sees.

ISSN 2312-5160
online ISSN 2786-4502

- *Risk of Manipulation and Disinformation*: The speed and reach of these tools, particularly social media, make them susceptible to manipulation and the rapid spread of disinformation and misinformation. This can erode public trust in news sources and media content at all, which brings up unpredicted and possible dire consequences for media and communications business.
- *Loss of User Trust*: The use of AdTech and personalized targeting can lead to an "advertising overload," which may cause users to lose trust in the content or the platform itself as well as "advertising fatigue" when the ads themselves will cease to stimulate emotion and desire of the end user because of various processes that make human body and mind build resistance to such kind of stimuli.
- *Ethical Challenges*: The extensive use of data and automation raises a few ethical, technical, and political challenges that need to be addressed in further research with implementation of multidisciplinary approaches to the research process.

Here is a comparative table that highlights specific weaknesses for each mentioned technology group:

- *Streaming Platforms*: The main weaknesses are the risk of information bubbles and the audience's dependence on algorithms.
- *Social Media*: Their primary weaknesses are the poor quality of content and the high risk of manipulation and disinformation.
- *Machine Translators*: These tools may produce translation errors and result in an unstable quality of translated content.
- *Advertising Technologies (AdTech)*: Weaknesses include advertising overload for users and a potential loss of user trust.
- *Crowdsourcing Platforms*: While they offer collective support, there is low control over accuracy of information, and they are at risk of manipulations.
- *Monitoring and Analytics Platforms*: Their effectiveness is highly dependent on the quality of the data, which can lead to a risk of false conclusions.

For RQ2, after classifying and analyzing the data on platforms, tools and technologies mentioned and described above, we were able to create a comparative table with a detailed and concise description of each item, strengths and weaknesses, advantages and risks of using each of the listed technologies.

Table 1.
Comparison of media influence technologies

	Technology	**Ways of media impact**	**Strengths**	**Weaknesses**
1	Streaming platforms (YouTube, Netflix, Twitch)	Personalization, recommendations, interactivity, and the formation of subcultures	High engagement, emotional attachment of the audience	Risk of information bubbles, dependence on algorithms
2	Social media (Facebook, Instagram, TikTok, X)	News feeds, virality, influencers, ads targeting	Speed of information dissemination, ability to form opinions	Poor quality of content, manipulation, disinformation

ISSN 2312-5160
online ISSN 2786-4502

3	Machine translators (Google Translate, DeepL)	Translation, multilingual content creation, cultural adaptation	Reducing the language barrier, optimizing newsroom productivity	Possible translation errors, unstable quality of translated content
4	Advertising technologies (Meta Ads, Google Ads)	Location-based targeting, behavioral targeting, native advertising	High accuracy of audience coverage, budget efficiency	Advertising overload, loss of user trust
5	Crowdsourcing platforms (Reddit, Change.org, Wikipedia)	Mass involvement of users, public campaigns, social proof	Mass participation, public campaigns, social proof. Collective support for ideas, high trust in content	Low control over accuracy, risk of manipulations
6	Monitoring and analytics platforms (CrowdTangle, Brand24, Google Trends)	Tracking trends, identifying points of influence	Rapid response to information threats, strategic planning	Dependence on data quality, risk of false conclusions

The contemporary information society is characterized by the integration of digital technologies into mass communication, which fundamentally changes the ways of influencing the audience. The latest digital technologies expand the possibilities of personalization, emotional engagement, international communication and manipulation of information flows, especially in the field of social media (social networks, streaming platforms, crowdsourcing). Our inquiry has provided a typology of these technologies that allows them to be clearly divided by their mechanisms of influence: viewing interactive content, personalized advertising, crowdsourced support, automated content translation. The strong points of technologies (efficiency, scalability, personalization) are accompanied by weaknesses (risks of misinformation, dependence on algorithms, power supply, availability of fast broadband Internet connection, ethical challenges).

The comparative analysis of six groups of technologies reveals both strengths and weaknesses in their activity:

- *Streaming platforms (YouTube, Netflix, Twitch)*: Strengths include high engagement, emotional attachment, and real-time news broadcasting. Weaknesses lie in audience dependence on algorithms and risk of information bubbles, which can limit enlightenment and skew public opinion.
- *Social networks (Facebook, Instagram, TikTok, X)*: Strengths include speed of dissemination and opinion formation via influencers. Weaknesses are poor content quality, susceptibility to manipulation, and amplification of disinformation, which can undermine integration and enlightenment.
- *Machine translators (Google Translate, DeepL)*: Strengths include multilingual communication, cultural adaptation, and newsroom productivity. Weaknesses are translation errors and unstable quality, which may distort reliable knowledge.
- *Advertising technologies (Meta Ads, Google Ads, programmatic tools)*: Strengths are precise targeting and efficient budget use, which can reinforce communication power.

Weaknesses include advertising overload and erosion of user trust, threatening the credibility of journalism.

- *Crowdsourcing platforms (Reddit, Change.org, Wikipedia)*: Strengths include mass participation, social proof, and public mobilization, enhancing integration. Weaknesses are low control over accuracy and high risk of manipulation.
- *Monitoring and analytics platforms (CrowdTangle, Brand24, Google Trends)*: Strengths include rapid detection of information threats and strategic communication planning. Weaknesses are dependence on data quality and risk of false conclusions, which can distort enlightenment.

Overall, the analysis demonstrates that while modern technologies broaden the *tools of influence and personalization*, they simultaneously increase ethical, technical, and political risks. Their effectiveness in shaping opinion and supporting integration depends heavily on the transparency of algorithmic control and the capacity of media actors to mitigate manipulation and disinformation.

Conclusion

This study has demonstrated that modern technologies of media communication – ranging from streaming platforms and social networks to machine translation, AdTech, crowdsourcing, and analytics tools, have fundamentally transformed the dynamics of mass communication. By classifying these technologies according to their mechanisms of influence, the research provides a structured framework for understanding both their potential and their limitations.

The study addressed two research questions. In response to **RQ1**, we developed a typology of modern media communication technologies structured by format, automation, personalization, algorithmic control, and the role of the audience. When applied to McQuail's framework, this classification demonstrates how digital platforms redistribute communicative power, enhance or weaken social integration, broaden access to knowledge, and commodify user attention in ways that transform the sender–receiver relationship into an algorithmically mediated, interactive exchange.

In response to **RQ2**, our comparative analysis revealed that each technology group carries both opportunities and risks: streaming and social networks expand engagement but foster dependency on algorithms; machine translators enable multilingual communication but risk errors; AdTech strengthens targeting but erodes trust; crowdsourcing builds participation but lacks accuracy control; and analytics platforms support strategic planning but depend on data quality. Collectively, these findings highlight that while emerging technologies extend the scope of media influence, they also intensify ethical and political challenges, requiring balanced application in journalism, strategic communication, and information policy.

By offering a systematic typology, this study contributes to the theoretical foundations of media communication research while providing practical insights for policymakers, journalists, and communication strategists. The results can inform the development of information policy, digital security strategies, and innovations in international broadcasting, where the balance between technological opportunity and ethical responsibility remains a defining challenge of the digital age. We can also draw a conclusion that the use of new technologies, such as social media, has significantly expanded the possibilities of media influence and at the same time made it accessible to a wide range of communicators.

Authors' contribution. Yurii Bondar - conceptualization, methodology; , Pavlo Shtelmakh - software, formal analysis, data validation.

Declaration on Generative Artificial Intelligence and Technologies Using Artificial Intelligence in the Writing Process. The authors used the AI model ChatGPT in this research to find and organize the literature review. Additionally, another AI-based tool for researchers – Consensus

(https://consensus.app/search/) – was used for manual article research based on the paper's keywords. The authors of the article bear full responsibility for the correct use and citation of sources.

References

Afuah, A., & Tucci, C. (2012). Crowdsourcing as a solution to distant search. *Academy of Management Review, 37*, 355–375. https://doi.org/10.5465/AMR.2010.0146.

Amazon Mechanical Turk. (n.d.). *Amazon Mechanical Turk*. Retrieved April 26, 2025, from https://www.mturk.com/.

Baker, N. (2024, July 17). What is on-demand TV? *Uswitch*. Retrieved from https://www.uswitch.com/tv/guides/what-is-on-demand-tv/.

Beudaert, X., Argandoña, J., Loc'h, J., Bediaga, I., & Munoa, J. (2019). *Monitoring and analytics platform for machine tools*. https://hal.science/hal-01901110/document

Bondar, Y. (2018). Information and publishing in the context of socio-political transformations. *Scientific and Information Bulletin of the Academy of Sciences of Higher Education of Ukraine, 1*(103), 13–16. Retrieved from http://nanvou.org.ua/Publications/visnuku/Bic-ник%202018%20№1%20HHH.pdf#page=13.

Chalaby, J. K. (2024). The streaming industry and the platform economy: An analysis. *Media, Culture & Society, 46*(3), 552–571. https://doi.org/10.1177/01634437231210439.

Chandrasekaran, V. (2025). Machine learning in Adtech: Transforming digital advertising. *International Journal of Computer Engineering and Technology, 16*(1), 567–577. https://doi.org/10.34218/IJCET_16_01_048.

Foxman, M., Harris, B. C., & Partin, W. C. (2024). Recasting Twitch: Livestreaming, Platforms, and New Frontiers in Digital Journalism. *Digital Journalism, 12*(4), 516–536. https://doi.org/10.1080/21670811.2024.2329648.

Goulart, K. (n.d.). Social network. *TechTarget*. Retrieved April 25, 2025, from https://www.techtarget.com/searchcio/definition/social-network.

Goodman, J., & Paolacci, G. (2017). Crowdsourcing consumer research. *Journal of Consumer Research, 44*, 196–210. https://doi.org/10.1093/JCR/UCX047.

Haidak, O. (2024, March 29). *Yak suchasni formaty telebachennia zminiuiut telereklamu: Osnovni kharakterystyky CTV i OTT reklamy* [How modern TV formats are changing television advertising: Key features of CTV and OTT advertising]. *Webpromo*. Retrieved from https://web-promo.ua/ua/blog/yak-suchasni-formati-telebachennya-zminyuyut-telereklamu-osnovni-harakteristiki-ctv-i-ott-reklami/.

Havrylets, Yu., & Rizun, V. (2024). *Mediaefekty: istorychnyj pohliad [Media effects: A historical perspective]*. Navchal′nyj posibnyk z dystsypliny «Fundamental′na fakhova pidhotovka», modul′ «Teoriia masovoi komunikatsii» [Textbook for the course "Fundamental Professional Training", module "Theory of Mass Communication"]. Kyiv: Kyïvs′kyj natsional′nyj universytet imeni Tarasa Shevchenka. Retrieved from https://www.researchgate.net/publication/380000932_Mediaefekti_istoricnij_poglad#fullTextFileContent.

Hammon, L., & Hippner, H. (2012). Crowdsourcing. *Business & Information Systems Engineering, 4*, 163–166. https://doi.org/10.1007/s12599-012-0215-7.

Horodenko, L., & Shtelmakh, P. (2024). History and evolution of international broadcasting systems in the world. *Current Issues of Mass Communication, 35*, 12–21. https://doi.org/10.17721/CIMC.2024.35.12-21.

Jiao, H., Wang, T., Libaers, D., Yang, J., & Hu, L. (2025). The relationship between digital technologies and innovation: A review, critique, and research agenda. *Journal of Innovation & Knowledge, 10*, Article 100638. https://doi.org/10.1016/j.jik.2025.100638.

Karyukin, V., Mutanov, G., Mamykova, Z., Nassimova, G., Torekul, S., Sundetova, Z., & Negri, M. (2021). On the development of an information system for monitoring user opinion and its role for the public. *Journal of Big Data, 9*. https://doi.org/10.1186/s40537-022-00660-w.

Koukaras, P., Tjortjis, C., & Rousidis, D. (2020). Social media types: Introducing a data-driven taxonomy. *Computing*. https://doi.org/10.1007/s00607-019-00739-y.

McQuail, D. (2010). *McQuail's mass communication theory (6th ed.).* SAGE Publications. Retrieved from https://www.academia.edu/36441695/McQuails_Mass_Communication_Theory.

ISSN 2312-5160
online ISSN 2786-4502

Mercan, H., Akgün, Y., & Odacıoğlu, M. C. (2024). *Makine çevirisinin tarihsel süreci* [The historical process of machine translation]. *International Journal of Language and Translation Studies, 4*(1), 104–116. Retrieved from https://www.researchgate.net/publication/381916795_The_Evolution_of_Machine_Translation_A_Review_Study.

PayPro Global. (2024, September 29). Що таке соціальний доказ у SaaS? Retrieved April 26, 2025, from https://payproglobal.com/uk/%D0%B2%D1%96%D0%B4%D0%BF%D0%BE%D0%B2%D1%96%D0%B4%D1%96/%D1%89%D0%BE-%D1%82%D0%B0%D0%BA%D0%B5-%D1%81%D0%BE%D1%86%D1%96%D0%B0%D0%BB%D1%8C%D0%BD%D0%B5-%D1%81%D1%85%D0%B2%D0%B0%D0%BB%D0%B5%D0%BD%D0%BD%D1%8F-%D0%B2-saas/.

Pippit.ai. (2025). *What Is AdTech? Understanding the Basics of Digital Advertising*. Pippit AI. https://www.pippit.ai/resource/what-is-adtech.

Rauschnabel, P., Felix, R., & Hinsch, C. (2019). Augmented reality marketing: How mobile AR-apps can improve brands through inspiration. *Journal of Retailing and Consumer Services*. https://doi.org/10.1016/J.JRETCONSER.2019.03.004.

Segev, E. (2020). Crowdsourcing contests. *European Journal of Operational Research, 281*, 241–255. https://doi.org/10.1016/j.ejor.2019.02.057.

Zakharchenko, A. P. (2023). *Konverhovani vplyvy v systemi mediakomunikatsii: Teoriia, vymiriuvannia ta prohnozuvannia* [Doctoral dissertation, Taras Shevchenko National University of Kyiv]. https://scc.knu.ua/components/com_chronoforms7/chronoforms/uploads/335875/%D0%97%D0%B0%D1%85%D0%B0%D1%80%D1%87%D0%B5%D0%BD%D0%BA%D0%BE_%D0%B4%D0%BE%D0%BA%D1%82%D0%BE%D1%80%D1%81%D1%8C%D0%BA%D0%B0%20%D1%80%D0%BE%D0%B1%D0%BE%D1%82%D0%B0.pdf.

Received 18.05.2025
Approved 29.09.2025
Published 20.12.2025