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Analysis of Trends and Innovations in the Media Ecosystem in Spain and Portugal (2025-2030)

Report

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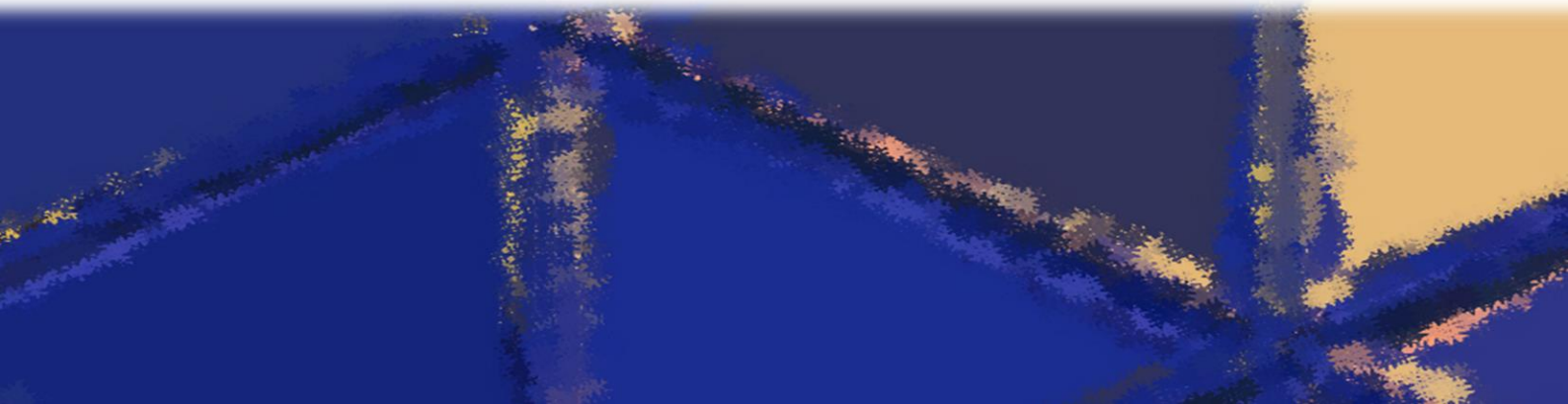

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1. Executive Summary and Table of Contents

1.1. Executive Summary

This report is the result of a prospective analysis among professionals and experts to identify the trends and innovations that will impact the media landscape in Spain and Portugal over the next five years. It is one of the initiatives of the IBERIFIER project to guide the decision-making of media managers, media companies, political leaders and other social actors.

The study has identified the following trends:

- The evolution of the Iberian media ecosystem between 2025 and 2030 will be characterised by the ubiquitous integration of Artificial Intelligence (AI), with extensive applications in content gathering, production and distribution. AI will revolutionise the paradigms of productivity and task automation, significantly impacting the optimisation of journalistic and business processes. Co-creation of value in the service economy across multiple market actors, including consumers, will become increasingly relevant.

- Big Data will continue to expand as a key tool for the analysis and generation of content, being a long-term investment for companies seeking to adapt to the demands of the attention economy. On the other hand, blockchain technology and associated concepts such as Web3 and NFT will generate a decentralised and secure digital ecosystem, which will revolutionise online transactions and digital property, offering new opportunities and business models for the media sector.

- Audiences will acquire an increasingly active role in demanding interactivity and personalisation in media consumption. New narratives, supported by virtual and augmented reality, as well as the emerging metaverse, open up a horizon of immersive and participatory experiences. In this sense, journalism will have to differentiate itself even more from other content and increase ethical rigour. The co-responsibility of platforms will be fundamental to fight against the loss in confidence in institutions.

- Communication and journalism training will face the challenge of keeping up with these innovations, improving analytical skills and data verification in the face of the advance of disinformation. Scientific communication, for its part, will diversify in channels and practices, with social media emerging as the main sources for consultation and dissemination of information despite the challenges of credibility and verification that this entails.

- In terms of labour organisation and sustainability, the adoption of AI will drive a change in media production, albeit with new deontological and sustainability challenges, such as attracting and managing creative talent.

- Social networks will increase their dominance in content distribution, forcing media to adapt their communication strategies to a context of changing algorithms and information saturation that is more radical than currently.

- The climate emergency will require a multidisciplinary communication plan that allows rigorous content to be offered, devoid of scaremongering, which relates

events and provides greater context. In this sense, the media will have to assume a crucial role in educating and mobilising public opinion on sustainability and action to combat climate change.

- The managers surveyed agree (90.1%) on the relevance of the trends identified in the report, with no significant differences between Spain and Portugal. The vast majority (94%) believe that AI will reinforce the user experience by personalising content and predicting needs and they warn of the danger it will pose due to its ability to produce increasingly complex and sophisticated disinformation strategies. In this sense, 79% of those surveyed advocate the promotion of programmes to improve users' media literacy.

- The managers surveyed also reaffirm that it will be crucial to create simple, visual narratives adapted to social media consumption. In particular, they highlight the popularity that short, explanatory, vertical video formats will gain (83%) as well as those with a more natural, transparent and relatable approach (66%), although to a lesser extent.

- From a training point of view, 84% of managers subscribe to the need to produce agile audiovisual formats that have a greater impact on the audience. In the same vein, 71% support training plans that enable the implementation of AI in journalistic work. However, despite the willingness of most managers, 43% doubt the ability of newsrooms to cope with the disruptive changes posed by AI.

The report reflects a complex and dynamic panorama of the media sector in Spain and Portugal, where technological innovation and constant adaptation are key to maintaining relevance and effectiveness in communication and journalism. The document was prepared by a team of researchers from the Miguel Hernández University of Elche (Spain), OberCom and ISCTE-IUL (Portugal), who are members of the IBERIFIER project.

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2. Relevance and usefulness of the study on trends in the media ecosystem

Jose A. García-Avilés, Miguel Hernández University and Miguel Crespo, ISCTE-IUL

2.1. Prospective analysis on the future of the media

Prospective analysis, also known as future scenario analysis, is an approach that focuses on exploring and predicting possible futures in each context. It consists of identifying trends, uncertainties and factors that may influence the future, with the aim of informing strategic decision-making. In the case of the media, the prospective analysis of future trends can be decisive in counteracting the fragile and highly uncertain situation it is experiencing in the global context (such as in Spain and Portugal) due to the failure of traditional business models, the fall in advertising investment, competition from large aggregator platforms and social networks in the distribution of content and its role as the preferred means of information for citizens.

Prospective analysis is particularly useful in situations where uncertainty is high, such as in the media, and can take many approaches. This report focuses on identifying trends and critical factors, that is, it begins by identifying current trends and factors that could shape the future, whether in the short, medium, or long term. This prospective analysis aims to help organisations anticipate and adapt to possible future changes, minimising risks and taking advantage of opportunities, in order to prepare for a range of possible futures to help them make informed strategic decisions.

Media companies are among the organisations facing the greatest disruption around the world due to the impact of technologies, the threat of new players from inside and outside the sector, the volatility of audiences, and the accelerated transformation of the business model due to plummeting advertising revenues. Therefore, the word that best describes the situation in the current media environment is “uncertainty.”

Formulating trends about the future with a time horizon of 2025-2030, as in this case, implies venturing on an uncertain journey, with the risk of painting an idyllic and unattainable picture. This risk will always be present. It is not easy to find the balance between the utopian and the feasible, between the familiar and the strange and between the everyday and the surprising. With the help of a solid and rigorous methodology, our aim is to trace sufficiently proven trends in the media sector in Spain and Portugal, so that they contribute to the transformation of the sector.

Innovation, in general, refers to the process of developing and applying new ideas, methods, products or technologies to improve and advance in different fields. Innovation in media and journalism involves the use of technologies such as artificial intelligence to improve the gathering, analysis, and production of news content, and to develop new business models in a constantly evolving digital environment. The ability to innovate is therefore seen as a critical factor for the long-term success of companies, organisations, and societies.

The importance of innovation for media survival and growth is increasingly evident in an ever-changing ecosystem. It is crucial to adapt to a highly competitive digital environment in order to develop sustainable monetisation strategies, attract audiences, verify facts and combat disinformation, create journalistic narratives, automate routine tasks with no human

added value, personalise content and stimulate collaboration with users. Through innovation, it will be possible for the media to continue to play a vital role in society, providing accurate and relevant information for democratic life.

2.2. The reason for this report

This report is one of the foundational contributions of the IBERIFIER project. By mapping the media in Spain and Portugal, as well as its challenges and problems, IBERIFIER set out to conduct scientific research into the development of the digital media ecosystem in Iberia, and this contribution to the future of the sector forms part of the objective of establishing quality indicators. This strategic report aims to be useful for media managers, media companies, stakeholders, political leaders, and social actors.

One of the main challenges of this IBERIFIER report is to identify the opportunities that the media can find in the trends and thus contribute to their adaptation to market transformations. Furthermore, it also aims to warn of the risks and threats that the media is facing or will face in the near future, allowing them to anticipate problems and take preventive measures or, in the best-case scenario, to apply innovation processes.

This report was prepared by a team of experienced researchers with relevant publications on communication and journalism in general and on innovation in particular, belonging to the Miguel Hernández University of Elche in Spain and OberCom and ISCTE-IUL in Portugal, which are all involved in the IBERIFIER project.

The Communication Research Group (GICOV) from the Miguel Hernández University of Elche (UMH) has a long history in the comparative study of journalistic innovation. Since 2013, its members have participated in national and international projects and have published numerous impact studies related to the challenges faced by the media to innovate in their processes, in the relationship with users, in business models and in journalistic products and services.

OberCom -Communication Observatory- is a research centre focused on the analysis of the dynamics of contemporary communication. Throughout more than two decades of research, OberCom has explored the transformative aspects of the media industry in Portugal and worldwide, namely television, radio, the press, journalism, and entertainment. A pioneer in digital media research and in mapping the evolving dynamics of the internet, social networks and other digital mediation structures, OberCom's mission is to generate knowledge and mediate an open debate involving academics and specialists, key players in the Portuguese media industry and the general public.

The Iscte -University Institute of Lisbon- was founded in 1972 as one of the first modern universities in Portugal, with the central objective of studying labour and social dynamics in a rapidly changing world. Since then, the university has been actively involved in collaborative projects, networks, and partnerships around the world, including a series of educational, training and research programmes supported by the European Union, with a strong commitment to internationalisation, innovative research and education aligned with professional standards.

In order to identify the main trends in the media and the Network Society, 16 main areas have been defined in this report and are described in section 2.4. To achieve a broad, diverse and in-depth analysis, a mixed quantitative and qualitative methodology, combining

expert interviews and surveys of media managers. In constructing the two samples, we sought to maximise diversity and representativeness. On the one hand, diverse media were selected in terms of their geographical characteristics, subject matter, size (financial, audience and human resources) and publication platforms (radio, television, digital) and responses were sought from managers with a diverse profile (gender, age, etc.). Similar diversity criteria were applied to the interviewees.

To carry out the research, we identified experts in Portugal and Spain with relevant knowledge, experience or research in each area, which resulted in dozens of interviews. Their contributions constitute the raw material of this document, together with data and ideas extracted from studies, reports, and specialised publications. In addition, the survey of more than 100 media managers from Spain and Portugal, who assessed the possible impact of the trends detected, allowed us to obtain a broader vision in each of the areas and to try to bridge the possible gap between the opinions of journalism professionals and experts.

In this way, we have been able to cross-reference potentially diverse points of view, internal and external to the journalism sector, on each of the 16 research areas and perform a quantitative and qualitative analysis. To some extent, the weak signal analysis methodology is applied to the qualitative analysis of the expert interviews. It is a strategic prospective methodology used to identify and study early and subtle signs of possible future trends or disruptions that may not yet be evident, allowing the development of scenarios to explore different possible futures. Future scenarios help organisations to understand the possible implications and make better informed strategic decisions. Weak signal analysis often benefits from an interdisciplinary approach, as trends and disruptions may originate in different fields, which requires input from experts in different domains, as we have tried to do in this report.

2.3. Relevance and usefulness of trend analysis

The concept of a trend can be defined as a perceived direction or pattern of change over time in relation to a particular phenomenon, behaviour, idea, product, service, or event. Trends indicate how something is changing or evolving, and in which direction. In the business world, a trend is a pattern of gradual change in a process or outcome. The objective is to detect variation over a long period of time, usually several years, usually associated with structural causes affecting the phenomenon being analysed. In some cases, the trend shows steady growth; in others, it may be upwards or downwards. The cycle is a quasiperiodic oscillation, characterised by alternating periods of high and low rates of change, which may, but do not always, involve expansion and contraction.

Trends can be observed in several dimensions, such as patterns of change (through data or behaviours, for example), duration short, medium or long term, i.e. episodic, persistent or cyclical), influencing factors (social, economic, technological, cultural or political changes) or evolution of cultural adoption (many trends start as niche innovations and, as they gain acceptance and popularity, become part of mainstream culture). Trends through this type of systematic analysis have three essential characteristics: they bring novelty, as they manifest a change that had not been detected and present nuances not previously considered in the sector; they are validated as they can be backed up with data and contain sufficient elements justify their relevance; and they are actionable, that is, they have an eminently practical character that can be applied to the sector in which the report is framed, in our case, the media ecosystem in Spain and Portugal.

Trend analysis is a valuable tool for organisations, providing information to support decision-making, strategic planning, and innovation. Analysing and understanding trends helps organisations to adapt to change, identify opportunities and anticipate challenges, which is crucial for strategic planning and innovation.

This type of analysis can cover areas such as market forecasting (anticipating changes in consumer preferences, demand for products and services and market conditions), decision-making (identifying growth opportunities, competitive threats and changes in the regulatory environment) or innovation in products or services (satisfying new consumer needs). It can also be applied to risk management (changes in the business environment or unexpected events), marketing planning (market segmentation, choice of communication channels and developing effective messages), process improvement or anticipating social changes. Finally, it also allows us to adapt to technological transformations.

Trend reports are particularly useful for companies as they can help transform the way they position themselves in the market, their work systems, the management of people and resources and their innovation processes. They often synthesise a large volume of information, offer a range of key insights and access to experts and sources that companies cannot usually access. Many companies have limited capacity to detect trends and generate insights. Moreover, urgent day-to-day business often prevents companies from focusing on more strategic issues because managers are focused on immediate problems. As Gary Klein (2015: 124) notes, “in their zeal to reduce uncertainty and minimize errors, organizations fall into the predictability trap and the perfection trap.”

2.4. Selected trend areas

The sectoral perspective is essential for anticipating changing needs in terms of processes, resources, competences and future investments. To begin with, we identified 16 areas of the Iberian media ecosystem that would be the object of the analysis. We consider these areas to be the key areas where the most significant changes are taking place in the media sector. These areas are as follows:

Artificial Intelligence. Application of automated learning resources for the optimisation of production, distribution, organisation, and marketing processes.

Big Data. Processing of large volumes of structured data for the analysis of internal metrics and content generation.

Blockchain, Web 3 and NFT: Aspects related to encryption in the block chain of decentralised operations and the design of the new web.

Fact-checking and disinformation. Checking information disseminated in the media and on social networks with the aim of combating fake news.

Companies: Trends, challenges and strategies of digital platforms and media in the attention economy.

Business and marketing: Strategies, plans and innovative business models in the digital economy.

New narratives and formats: Ideation, design and development of innovative narratives, products and forms of communication.

Training: Skills, profiles and knowledge specific to professionals in the communication and journalism sector.

Advertising. Strategies for designing the image for the company and its products and understanding the market and potential consumers.

Metaverse, VR, AR: 3D image development technologies and generation of virtual environments.

Scientific communication: Processes performed by an organisation in order to transmit its information adapted to different audiences.

Work organisation: Aspects related to the efficient management of company resources.

Journalistic culture: Principles, values, standards, policies and rules surrounding journalistic practices.

Audiences: Analysis of the consumption of different media and the parameters for measuring audiences in all types of formats.

Social Media: Creation, management, and dissemination of content on different social platforms.

Sustainability: Initiatives promoted with the aim of exercising communication within the framework of the Sustainable Development Goals (SDGs).

The media ecosystem is a complex environment, characterised by technological change, volatility, interdependence, and competition between different agents, as well as by the transformation of its economic system. In this context, trend analysis is a useful tool for examining future market developments and developing strategies accordingly. In a globalised world subject to constant change, it is worth considering the transversal impact that trends in one sector can have on related sectors. Media companies are not only competing with market peers, but with the latest innovation in any sector.

This IBERIFIER report covers numerous media trends that will shape the development of journalism -its culture, practices, and forms- over the next few years. The results paint a picture of a changing type of journalism in terms of audiences, narrative formats, business models produced and consumed on various types of platforms, in which credibility and ethics play an increasingly important role in the fight against disinformation. AI, blockchain, AR and other disruptive technologies are driving this evolution. This trend analysis is not intended to be exhaustive. It focuses on some emerging issues that are shaping how journalism is evolving and provides an analytical framework for assessing future developments in media studies.

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3. Trends and innovations in the areas of the Iberian media ecosystem (2025-2030)

3.1. Methodology

The aim of this phase of the study was to identify the main areas of trends and innovation in the digital media ecosystem, that is, the sectors that transversally influence and will be influenced by changes during the period 2025-2030. Based on this preliminary work, 16 trend areas were identified in the communication sector that made up the backbone of this part of the report, with the aim of assessing the impact of trends and innovation on the media ecosystem, with special reference to disinformation.

The methodology in this part of the report was replicated for Spain and Portugal. Firstly, a benchmarking of trends was carried out that allowed us to x-ray, with a broad focus, the digital communication landscape in Spain and Portugal, as well as at a global level. The documentary review included the analysis of innovation reports, technical and business documents, as well as the identification of complementary sources that could add value.

Based on the analysis of the documents collected, a list of experts in each of the trend areas was drawn up, with the aim of having an average of five experts per trend. The selection of experts was carried out seeking equitable representation of both countries, as well as respecting parity. The researchers contacted more than 120 experts of renowned prestige in both countries with links to companies, consultants, and entities in the communication sector. In the end, the team interviewed a total of 71 experts. 30% came from Portugal and 70% from Spain. The distribution of experts according to gender was 40% women and 60% men.

The experts were contacted by email. They were informed of the objectives of the report and the open questionnaire on which the telematic interview was based was sent as an attachment. The interviews lasted 40 minutes on average. The conversations were recorded and subsequently transcribed with the consent of the interviewees to cede their content and be quoted in the report.

The questionnaire was based on a semi-structured script comprising the following questions:

1. What specific media industry trends stand out and/or will impact your area of expertise over the period 2025-2030? Please indicate their relevance from most to least and explain how each trend will develop.
2. What implications (technological, professional, economic, ethical, social, etc.) could these trends have on the digital media ecosystem and on the quality of information in the Iberian Peninsula? Please explain the different implications.
3. Which notable aspects of your area of expertise will have a positive or negative impact on the fight against disinformation?
4. What specific areas and trends of innovation other than your own do you think will impact the media ecosystem? In what ways?
5. Can you point us towards other experts in this area that we should contact?

Based on this initial questionnaire, the interviews included other specific questions in each area, as well as any comments and observations that the interviewees wanted to add.

Finally, based on the material from the expert interviews, as well as the documents, reports and materials analysed, the members of the team prepared reports on each of the 16 trend areas initially identified.

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3.2. Artificial Intelligence

Félix Arias-Robles, Miguel Hernández University

Experts

Miguel Ángel Román, co-founder, Instituto de Inteligencia Artificial

Patricia Ventura, Universitat Autònoma de Barcelona

David Corral, head of innovation, Televisión Española

David Llorente, CEO, Narrativa

Carmen Torrijos, head of IA, Prodigioso Volcán

María Ángeles Chaparro, Universidad Complutense de Madrid

Artificial Intelligence (AI) is the great technological disruption in the short and medium term for all sectors, including journalism. It is estimated that almost half of the adoption processes in the media will occur in less than 3 years and will have similar effects as in other sectors such as the financial sector. Improvements in labour productivity and the automation of tasks and roles will be key in all industries (Rao and Verweij, 2022). A recent report reflects that more than 75% of professionals use AI in at least one area of the journalistic value chain, which includes the gathering, production, and distribution of content, primarily to improve productivity, but also that barely a third of organisations have developed strategies to exploit this technology (Becket and Yaseen, 2023).

The development of AI is not new, but the emergence of generative models has popularised advances that were unimaginable until recently (Maslej, 2023). And its progression will not stop. After a period of exuberance, most technological innovations reach a plateau. But it is hard to know when that state will be reached with AI. It is expected to continue to improve and increase its influence on daily life (Chui, 2022).

The consequences of this transformation demand critical reflection, first of all, on its artificers/developers. Until recently, most of their advances were open source. Small independent initiatives soon proliferated (Benaich and Hogarth, 2022), but there is now a trend towards concentration in a small set of players from the private sector (Maslej, 2023). Technology giants, first Microsoft, then Google and soon Meta, Amazon and Apple will take on a key role in software development. New players, such as Open AI, could move into this business on platforms such as Reddit to take advantage of their creative capacity (Benaich and Hogarth, 2022).

Errors in the generation of content, and especially negligent or malicious use of it, constitute great social challenges (Maslej, 2023). The effects of these tools on professional routines, newsroom organisation, business models and ethics will be essential in this technology, which brings new powers, but also responsibilities.

Trends and innovations

- *Effervescence*. AI is experiencing continuous and accelerated evolution. The software does not require logistical processes and advances expand immediately (Miguel Ángel Román). Its direct impact on programming may imply even more accelerated growth. AI will make consumption and its own use more conversational and expand to other everyday objects (David Llorente). It is probable that, after the initial enthusiasm, the “valley of disenchantment” will soon be reached. But then, a

"plateau of usefulness" is expected in which the changes are assimilated (Carmen Torrijos).

- *Automation.* Collaboration between humans and machines will serve, in the short term, to simplify mechanical processes. But the degree of complexity of these routines will increase, which will generate a great revolution in business models. The use of AI in content such as summaries of sport events or economic information will soon expand to other spheres and sections (David Llorente).
- *Personalisation.* One of the most plausible consequences of the reduction of mechanical tasks is the generation of versions of the same content, for example with the user's choice of voices or framing (David Llorente).
- *Hybridisation*. The breaking down of barriers in newsroom profiles and teams will become more accentuated. Technical staff will gain prominence, but they will have to understand the essence of the profession. Journalists will increasingly need more technical training to understand their potential and improve communication in collaborative work. Workforces will probably be smaller and more specialised (Patricia Ventura).

Challenges

- *Assimilation*. Adaptation or rejection by professionals and the media will be a determining factor. Those who opt out will probably "have problems" (David Llorente and Miguel Ángel Román). Inaction is not an option because continuous progress may open even deeper gaps. The journalism sector has already had to adapt to other technological disruptions and will once again have to transform itself to survive (David Corral).
- *Regulation*. Institutions are moving, sometimes prompted by technology, to fit these advances into regulatory frameworks. But it will not be easy to stop its evolution because the ease of replicating this technology and developing within the legal framework is increasing (David Llorente). It does seem more feasible, especially for journalism, to encourage supervision. Analysing the algorithms behind AI to avoid errors and bias will be an increasingly relevant function in the sector. Encouraging the transparency of the data, both those used by journalists and those analysed, will acquire more value (Patricia Ventura).
- *Strategy*. Thinking long term and investing in innovations considered essential will be key to success. It is likely that in the future there will be first- and second-tier media in terms of the implementation of AI (María Ángeles Chaparro).
- *Isolation.* Personalisation can disperse the narrative so much that dialogue or the understanding of essential issues for coexistence becomes very complicated. Institutions will find it difficult to reach citizens effectively (David Llorente). Increased polarisation and the resulting social division mean that journalists must continue to offer a coherent narrative, at least, about the essence of important issues (Patricia Ventura).
- *Disinformation*. AI perfects and facilitates the generation of fake content. Added to this is the bias, not always malicious, that is present at the core of these technologies, and the media should not contribute to expanding them (Patricia Ventura). Journalism will have to take advantage of technology to detect lies, errors and bias in information. But this, by itself, will hardly be sufficient. In the "cat and mouse game" between technologies to generate lies and detect them, the former will always have the advantage. We will have to assume that we will be living in a

world where it will be difficult to detect what is real from what is not (Miguel Ángel Román).

Opportunities

- *Fact checking*. The enormous challenge of disinformation can become a great opportunity for journalism. Encouraging the critical capacity of citizens is one of the possible solutions and the profession will play an essential role (Carmen Torrijos). The reputation of the media will be crucial for the user to trust the verified information. The propagation of deep fakes will create a favourable "breeding ground" so that the media becomes a reliable benchmark for the public (Miguel Ángel Román). Promoting independence from the large technology platforms will be essential to consolidate journalistic brands that can be trusted. The creation of a transparent and traceable quality seal in all their phases could be useful to demonstrate the reliability of what they publish (Patricia Ventura).
- *Efficiency*. Although it requires supervision, automation can improve the efficiency of professionals so that they spend their time on other, less tedious tasks (Miguel Ángel Román). Specialisation, both in a topic and on a platform, will become a more common solution. There will also be more chances for less well funded projects to succeed (David Corral).
- *Quality*. Automated generation without criteria only encourages speed and quantity, which can degrade the quality of much content and harm working conditions (Carmen Torrijos). Instead, AI will be used in the intermediate stages of the journalistic process, such as topic detection of topics or information processing (transcription, categorisation or summary). Journalists who use it well will have more time to innovate in approaches, methods, and formats; in short, an informative product with greater added and differential value for increasingly demanding users with their own interests (David Corral). And for media companies, it may be useful for optimising advertising and subscription models (Patricia Ventura).

Conclusion

The journalistic industry is already incorporating AI with effects that are still difficult to gauge. And everything indicates that its development will continue to grow. The decisions adopted by the media in the face of this disruption will, to a large extent, determine the future of the sector. The relevance of AI after the latest advances is based on:

- Its size. It will affect journalistic companies of all types, sizes and geographic locations. The influence will vary depending on the nature of the medium, but it will also expand to all types of professionals.
- Its depth. The changes generated by AI in journalism will not be superficial, but will affect all production, distribution, organisation and marketing processes. Even more radical will be the change in users, who will develop new habits and interests, with a profound transformation in information consumption.
- Its multiplicity. By affecting all sectors, changes in society and journalism will multiply and feedback.
- Its speed. The changes will be so rapid that the ability to adapt will be essential.

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3.3. Big Data

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Sergio Sangiao, data journalist, Público

Eli Vivas, cofounder, StoryData

Borja Andrino, data journalist, El País

Big Data has been transforming the essence of all economic sectors for years, especially in those where information constitutes the raw material (EBA, 2020). It experienced a boom during the Covid-19 pandemic and the momentum is being maintained in companies and institutions that are investing in more general and long-term projects because their development possibilities are almost unlimited (Quero, 2023).

This trend affects journalism in three aspects. First, like any company, a media company can take advantage of the potential of Big Data to optimise its processes and improve its marketing (advertising and subscription). Second, due to its ability to feed on the growth of the data managed by public institutions and other private companies. And from this, its most visible derivative: data journalism. After more than a decade, it has already reached maturity and is moving towards a process more focused on the critical capacity of approaches, process and visualisation (Gray and Bounegru, 2019).

Trends and innovations

- *Progressive experimentation*. Institutions such as the National Institute of Statistics in Spain (INE) are going to continue experimenting with the publication of microdata and with data collection and processing methods that cross different administrative registries (Jesús Escudero). These innovations have been shown to be useful for organising and expanding databases, but also for moving towards solving problems such as leasing. The growth of public information is unstoppable (Borja Andrino), and it is expected that administrations that have, until now, been reluctant, such as many local ones, will continue to open up (Eli Vivas). However, progress in terms of the volume of data available will continue to advance slowly over the next five years, unlike the revolution of some ten years ago (Eduard Martín-Borregón).

  Something similar is happening in the publication of data by private companies. The trend is towards the opening up of more data, but limitations may arise such as the closure of APIs by technology platforms (Eduard Martín-Borregón). Faced with these limitations, journalists will continue to make progress in “scraping,” the automated extraction of documents and web pages (Carlos Arcila).

- *Consolidation.* The expansion of big data in journalism, especially in the final stages, has not proven to be any kind of magical solution to the problems of the sector. Data journalism is still expected to explode in the regional media, although there have already been good experiences (Borja Andrino). The speciality will consolidate and grow slightly in those places where there are already defined teams (María Ángeles Chaparro).
- *Multidisciplinary integration*. The use of data will continue to increase beyond specialised journalists. Soon, every editor will have to learn to search for stories in databases and research using large volumes of information (Sergio Sangiao). This ties in with the trend towards profile diversification and teamwork to tell stories in a visual and effective manner.
- *Processing and visualisation support*. Technical advances, through digital tools and Artificial Intelligence (AI), will be of great help for the processing of data before the final design (María Ángeles Chaparro). It is expected that they will exploit methods such as unstructured data processing, text transcription and natural language. These resources will allow tasks such as trend detection or data cleaning to be automated, without much programming, which will simplify access to results now reserved for large or specialised teams (David Cabo).

  AI will also boost data visualisations with techniques such as parallax scroll (scrolling at different speeds of the vertical interface to generate movement effects) or full-screen graphics adapted for mobiles, to generate differentiated content (Sergio Sangiao). This technology will allow suggestions on the most suitable visualisations for data sets and the use of personalised applications for users (Eduard Martín-Borregón).

Challenges

- *Independence also from audiences.* Big data will have special relevance in the processing of data related to users. Notwithstanding, it will be important to interpret such figures properly, choosing the most appropriate metric. The media will have to set limits that do not condition a journalist's ability to make innovative decisions that open new approaches and debates, even if they do not initially record the best audience data (Jesús Escudero).
- *Investment.* Quality journalism requires economic investment and a commitment to research and innovation. The media will have to make a significant effort to find a clear and viable business model focused on the optimisation of resources (subscriptions and advertising) (Sergio Sangiao).
- *Updated training*. Both professionals and companies should champion training issues related to statistics or research methodologies (stories and the market) (Carlos Arcila). Only then specialised teams will be able to approach the information agenda with more agility and achieve greater impact (Sergio Sangiao).

Opportunities

- *Corporate collaboration*. It is worth highlighting the creation of joint projects with institutions and private companies to exploit large volumes of data. Technology companies, such as Google or Apple, have already experimented with this by opening up mobility data, which helped measure restrictions during the pandemic (Borja Andrino). Collaborations, both with the media and institutions, are expected to be more common than open data. And in these agreements, it will be necessary

to evaluate any possible problems, intentions and biases of the publications that use these data beforehand (Jesús Escudero).

Journalists will also have the opportunity to provide their services to companies and institutions, so that they can take advantage of their databases. Corporate communication based on facts and figures, from collecting and organising information dispersed in companies to the creation of visual stories, will continue to grow as a professional departure. Journalists have the advantage of being used to working with scant information and shaping it in the clearest, most comprehensible and attractive way possible (Eli Vivas).

- *Differentiation*. The generation of quality content, both in form and substance, will be essential for a journalistic project to stand out against the information saturation that will surely increase due to the automation of generative AI. Until now, most quality projects have been offering positive returns for the media (Borja Andrino). Large visualisation projects will become increasingly important for attracting and retaining users, subscribers, and advertisers (Sergio Sangiao). The ability to experiment and accurately measure the impact of innovations on production or distribution will be key to improving the effectiveness of specialised data teams.
- *Transparency and methodology*. Faced with the rise of disinformation, building trust and authority in the media will be essential. To this end, transparency in process and content will be one of the main tools available to journalists. The use of technologies that make it possible to trace the steps of each professional, such as blockchain, will make it possible to verify identity and prove professional status in the verification of information. Data journalists will be able to perfect and export their methodologies to the rest of the newsroom to achieve better results and offer users a more enriching experience (Eli Vivas).

Conclusion

Technological progress, led by AI, will lead to a new explosion of available data and its processing capacity. Institutions and businesses, including media companies, will find it easier to generate and process large volumes of information. However, it will be difficult to reach the level of other European countries, and the emergence of a whole sector focused on big data, because growth will face two major constraints:

- Limitations arising from a lack of training for professionals. It will be necessary to design strategies focused on taking advantage of big data, which, if used properly, will be profitable. But this will require significant investment in a context of great uncertainty.
- Reluctance due to a fear of experimenting with large volumes of data. Above all, when it comes to opening up at least part of this information.

Furthermore, collaboration between institutions, companies and professionals will be key. If the terms and conditions of all the parties involved are detailed and agreed in advance, the gains will be mutual. Accountability, social responsibility, and even commercial interests will have to be reconciled with the independence and transparency of journalists. Because all sectors, particularly the media, and society as a whole, will be able to benefit from the potential of Big Data.

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3.4. Blockchain, Web 3 and NFT

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Blockchain technology has great potential to disruptively alter the way we interact on the internet. It is a decentralised and immutable digital ledger that securely records and verifies transactions across multiple servers, enabling transparent exchanges without the need for intermediaries to check the process. The server network itself attests that the transactions are valid. It is therefore characterised by decentralisation and traceability.

The disintermediation and security of its protocols compared to previous ones facilitate the exchange of value between users. While Web1 was the internet of information and Web2 the internet of interaction, Web3 represents the internet of value.

It is a complex technology, which makes it difficult to adopt. Almost two decades after the launch of the first Web3-based projects, it remains in an experimental phase and has not reached a critical mass of users. However, projects are emerging that improve its usability and hint at its possibilities, such as NFTs and decentralised communities.

Trends and innovations

- Blockchain enables the emergence of decentralised autonomous organisations (DAO), which use smart contracts and the consensus of their members to achieve different objectives. Most initiatives aim to disrupt the financial and stock market system, such as BanklessDAO and Uniswap; others are emerging in the media sphere, such as NewsDAO. “One trend will be the creation of decentralised communities of general or vertical information” (Beatriz Lizárraga).
- The disintermediation of transactions leads to lower barriers to the transfer of value and money in the virtual environment.
- Any physical or virtual asset can be converted into digital tokens in a blockchain. The tokens represent the rights to that asset and can be transferred, exchanged or stored securely in a decentralised network, allowing the divisibility, traceability and liquidity of the assets. “If you have an asset, you divide it into titles, you tokenise it, sell or rent it and the money obtained is distributed among the owners of the token” (Íñigo Molero).
- The gamification of projects through incentives will be decisive in encouraging community engagement. “Disruption is in the essence of decentralising, communities and well thought out incentives” (Beatriz Lizárraga). “Economic incentives largely define the actions of the whole society” (Álex Preukschat).
- Web3 will continue to need Web2. On the one hand, to gain visibility and attract users; on the other hand, to overcome technical and usability difficulties. Blockchain will continue to be rigid and technically complex, so it is necessary to build bridges

—some call them Web2.5— which facilitate navigation and improve user experience while taking advantage of its benefits.

- NFTs will become a gateway to the internet of value for many users, as it is a simple and tangible concept. “With NFTs, I take your content, encapsulate it in an inviolable file type and launch it. That is very well understood” (Beatriz Lizárraga).
- Tensions will continue to exist between public and private blockchains. The former advocate decentralisation and transparency and emerge as start-ups seeking disruption. The latter pursue control, traceability and confidentially, and have an institutional origin to optimise existing processes.
- The evolution of blockchain and its intersection with artificial intelligence and the internet of things may generate challenges and opportunities unimaginable even to experts. Its development is still at an early stage.

Challenges

- Most media companies do not enter into blockchain or do so with difficulties and limitations. On the one hand, they lack sufficient resources to experiment; and on the other hand, their philosophy often does not fit with open source and disintermediation. “There has to be a total reconversion, but it is difficult because those in charge of classic companies are not ready” (Álex Preukschat).
- The media must redefine its role in Web3, as the authors themselves will be the producers and owners of the content, and the role of the community as the curator will be enhanced. “Either we decentralise ourselves or others will do it” (Beatriz Lizárraga).
- Literacy is key to encouraging adoption and increasing security, control and integrity of transactions and personal data. “If you get into it because you want to have an NFT of a monkey, but you have not studied Bitcoin or you do not know if the network where you have your NFT is centralised, or if one day they may take it from you, you are cannon fodder” (Íñigo Molero).
- Not everyone will be on Web3, whether due to ability or choice. “The gaps are due to different factors: one is age, another is access to technology, and another is conscious rejection” (Joaquín Marqués).
- The replicability of open source and the absence of regulatory bodies may lead to poorly functioning or malicious projects. In the second case, anonymity protects offenders, although metadata related to their digital identity and the traceability of their operations will facilitate their identification if they try to transfer value outside of Web3.
- Uncertainty and disruption make the crypto world a volatile ecosystem that is attractive to speculators. “Many of these projects were financial, there was nothing real behind them. People would buy, raise the token and you suddenly make five or ten per cent profit, and it was a bit irrational. People were investing in projects without a minimum viable product” (Íñigo Molero).
- Most Web3 users have technical professional profiles. It would be useful to incorporate other business-minded profiles to create projects that provide greater value.
- For the fight against disinformation, the immutability of blockchain poses a risk. Once content is registered, it is unbreakable unless a fork (a change to the

consensus rules) is made or the author him/herself, its owner, decides to send it to a non-existent wallet.

- Forgetting passwords to digital wallets means the loss of the assets contained in them, as there is no central body to regulate access to the blockchain.

Opportunities

- Content creators can control and monetise their copyrights thanks to tokenisation and traceability. “When NFTs are resold, they can collect part of the resale because it is programmable. It is much more traceable, and it is therefore possible to reward their work” (Álex Preukschat).
- Bank disintermediation makes it easier for the community to send micro-payments to independent authors. To journalists, for example. “Do you have a very reliable network of people who are willing to pay you one euro a month with Bitcoin? Then you gain the financial independence to write about what you want” (Íñigo Molero).
- This also boosts regenerative finance as it makes it possible to send small remittances of money to people in other countries with a more favourable return interest rate for both parties. Decentralised finance, direct peer-to-peer financial services backed by smart contracts, is also emerging.
- Business opportunities are also opening due to the replicability of open source and the need to create links between layers of the internet. “Whoever has a good understanding of bridges and knows what is good about Web2 and Web3, will succeed” (Beatriz Lizárraga).
- Sovereign digital identity. Users will be able to decide exactly what data they share, with whom, under what conditions and for how long. This is both an opportunity for identity protection and a challenge for audience segmentation in product design.
- The identification of disinformation is facilitated due to the traceability of the content and its origin since the transaction history associated with the users is public. “Identification is key to non-censorship because users can identify if something is not information” (Beatriz Lizárraga).
- Content may be subject to assessments within the DAOs or through consensus-based oracles. If the protocols of these technologies provide so, the pieces will not be registered in the blockchain if they do not receive the consensus of the nodes. In a media DAO, the decision would be based on the quality and veracity of the content.
- Journalists would be able to use quotes verified by the sources themselves through their digital identity, which would result in greater credibility and support for the professionals themselves. “In a decentralised world, a quote comes signed with the private key by the person I am quoting, so that person can no longer say it is not theirs” (Álex Preukschat).

Conclusion

Blockchain is an effervescent technology whose enormous possibilities are yet to be glimpsed. Although it will continue to have a speculative and experimental component, decentralised communities and tokens capable of delivering real value to the user will grow, revealing the potential of Web3, or at least Web2.5. Disintermediation threatens the role of traditional media as curators of content and thus, their sustainability, although it offers

opportunities to journalists. In the fight against disinformation, immutability is a risk, while traceability and transparency work in favour.

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3.5. Fact-checking and disinformation

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The exponential growth of AI will be the main trend in this sphere in the coming years, with implications in terms of the quantity and complexity of disinformation, increased political polarisation and an increase in threats to democracies.

In terms of challenges, the media will have to fight harder to capture audiences and will have to embrace AI. Journalism needs to further differentiate itself from other content and increase ethical rigour. Co-responsibility of platforms will be crucial, as well as combating the breakdown in trust in institutions and the risks posed by disinformation initiatives.

The main opportunities focus on the development of effective media literacy programmes and the regulation of platforms. In addition, fact-checking through AI-based tools and further integration of fact-checking in the media, with reinforcement of best practices.

Trends and innovations

- Exponential growth in the use of AI, “both in the dissemination of misinformation and in its detection and verification." (Sergio Hernández); "It is difficult to imagine the internet in a year’s time, let alone in five years’ time” (Clara Jiménez Cruz); “There is a difference between information production and journalism; the former will be carried out in structures with few humans; the latter will oscillate between giant and micro dimensions, specialising in the production of added value for subscribers” (Luís Antonio Santos).

- Technological improvement and professionalisation of disinformation producers. “We will face a series of unknown potentials and challenges. Information verification will navigate these uncharted waters” (Luís Antonio Santos).

- Proliferation of tools for individual use to produce text, sound, image, graphic animation based on reality and fiction. “The gap will widen in terms of the availability of resources between the production of problematic content and the ability (individual or collective) to detect it” (Luís Antonio Santos).

- Increase in disinformation through videos and deep fakes. "The dissemination of increasingly refined and specific deep fakes, with markedly political intentions, represents the greatest threat to democracy" (Fernando Esteves); “Video disinformation gains weight with the increase of social networks based on this content” (Sergio Hernández).

- Increasing political and social polarisation. “This is not good news for the media ecosystem and the fight against disinformation” (Clara Jiménez Cruz).

- Greater threats to democracy due to the use of AI to create disinformation and legislative and regulatory responses. “We shall see the strengthening and expansion of authoritarian and anti-democratic movements, with well-trained digital propaganda armies” (Marisa Torres da Silva). "There are doubts about the effectiveness of the European legislative package, the effects of the less interventionist stance of the United States and fears about the more forceful stance (restriction of individual freedoms) adopted by other relevant countries, such as India or China" (Luís Antonio Santos).

Challenges

- The media will have to fight harder to gain audiences. “The greater speed and accuracy in the dissemination of disinformation may contaminate the media. Perhaps we are heading towards the *info-apocalypse*, the moment when ordinary citizens will no longer be able to distinguish fact from fiction” (Fernando Esteves).

- “AI is already finding its way into newsrooms to take on more tedious tasks; but it also has creative capabilities that may supplant some traditional jobs” (Clara Jiménez Cruz); "The development of automation processes and the increasingly widespread use of AI (ChatGPT, for example) pose very complex challenges to information verification and media ecosystems, to the perpetuation of social injustice and discriminatory bias” (Marisa Torres da Silva).

- Journalism needs to differentiate itself from other digital content. “Journalism must free itself from the treatment of the ‘information flow’ and seek relevance in contextualisation, research and the promotion of topics beyond the daily agenda” (Luís Antonio Santos).

- Need for greater ethical rigour. “Serious obstacles to solving the problem are the use of the mainstream media to amplify and disseminate false declarations and conspiracy theories, the devaluation of professional journalistic culture and the insertion into business structures oriented to maximum profitability” (Marisa Torres da Silva); “The speed of progress is such that it is urgent to reflect on the dilemmas generated by AI” (Sergio Hernández).

- Finding new forms of finance. “New forms of advertising are already having an impact on social networks. Ten years ago, we would not find paid advertising that was not labelled as advertising because there were laws that prevented that from happening. In some media, more than 50% of the content is sponsored but not declared because the media competes with influencers for advertisers” (Clara Jiménez Cruz).

- Platforms need to be made co-responsible. “The commitment of regulators to ensure that dissemination platforms are co-responsible for content and are committed to promoting this type of semi-automated mechanism will be decisive” (Luís Antonio Santos).

- Abuse of trust in institutions. “These changes will have an effect on trust in institutions and the solidity of political regimes. The end of access for the majority of the population to plural, diverse and quality content will bring damage, accentuate fractures, promote instability and fear” (Luís Antonio Santos).

- The risks of 'information disorders' and the perpetuation of business models that profit from misleading content and incite hatred are growing. "If we assume the need to live with plural, balanced and trustworthy systems, excessive pressures may arise from a political, economic or religious dimension" (Luís Antonio Santos); "The disruptions introduced by digitalisation will continue to have very negative impacts on the production, verification and contextualisation of information, along with the degradation of journalists' working conditions" (Marisa Torres da Silva).

Opportunities

- Develop effective media literacy programmes. "They can have an impact on mitigating disinformation. People need to be educated to become aware and develop critical thinking, which makes them less vulnerable." (Sergio Hernández). "We need media literacy interventions, with the mandatory inclusion of this type of content in school curricula" (Fernando Esteves).

- Increase in fact checking. "There will be an increase in projects dedicated to fact-checking and their interaction through collaborative journalism projects, in order to expand their operations" (Fernando Esteves).

- Development of automatic fact-checking tools using AI. "AI solutions will be developed with two priority objectives: identifying disinformation and eliminating it or limiting its scope." (Fernando Esteves). "AI will enable automatic verification, improving the processes of monitoring, content selection and correspondence with research. But the capacity to generate disinformation will increase exponentially, beyond the resources of the fact-checkers" (Sergio Hernández).

- Greater integration of fact-checking into journalism. "We have seen the trend with the war in Ukraine and it will increase as AI imagery grows exponentially. This integration will be beneficial, but it will not make independent fact-checkers disappear. Disinformation will continue to be part of people's lives, and that is why fact-checkers exist" (Clara Jiménez Cruz).

- Reinforcing best journalistic practices. "Using best journalistic and verification practices will become more relevant: increasing the transparency of processes, providing additional information, allowing easy cross-referencing of sources, assigning different levels of reliability and facilitating the circulation of verified content" (Luís Antonio Santos).

- Regulation of digital intermediaries. "I hope that raising awareness of the power of intermediaries in the management of public discourse will have an effect and involve stakeholders in mitigating and debating power structures" (Marisa Torres da Silva). "The regulation of platforms will have to be strengthened in terms of the transparency of their content moderation policies and the fight against disinformation" (Fernando Esteves).

Conclusion

The main trends in verification are related to the exponential growth of AI, both on the positive side (better tools for creating information and fact-checking) and on the negative side (boosting disinformation and its reach). Greater polarisation and political and social instability will emerge in democracies, with the promotion of literacy being one of the

possible solutions. The media will need to be more active, rigorous and ethical, but also adopt new forms of finance, regulation and accountability."

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3.6. Companies

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In a present dominated by the dominant service logic (Lusch, Vargo and Tanniru, 2010; Lush, 2011), the importance of business ecosystems based on the service economy and the co-creation of value between multiple market players, including consumers, is growing.

The creation of business alliances is necessary to address the challenges of sustainability and customer relationships, the most relevant asset for companies (Deloitte, 2023). Technological innovation will continue to be key in the scenario of competitive strategies that enable data to be taken advantage of and monetised. AI can increase people's creativity, Web3 offers the opportunity to expand brands and tokenisation will facilitate full control over personal data (Accenture, 2023).

Trends and innovations

- Paradigm shift in value creation: broadening the range of products to create complementary experiences and services.
- Customer-centric and data-driven approach. Companies are increasingly aware of the need to orient all production, distribution, and communication processes towards consumer preferences, placing people at the centre not only through direct interaction, but, above all, through predictive and in-depth study of behaviours and trends.
- In the production of content, the constant evolution and migration of target audiences between multiple platforms makes the need for adaptation constant, complex and costly. "How will it be possible to reach users in a relevant and timely way so that they continue to be there? Technology makes them evolve at a pace that is difficult to keep up with. This brings with its dispersion and the impossibility of control while trying to maintain a certain brand image on traditional websites" (Pedro Brandão). "The media will have to focus on better reporting, abandon clickbait practices and continue to invest in brand awareness" (Ricardo Jorge Tomé).
- Trust is growing in those who know how to communicate in a simple and direct way, horizontality prevails over veracity. There are people who are not professionals in their fields, but the way they generate content captivates many people and leads them to success, regardless of their identity, skills and training. Companies must "sell trust; it is the only way to sell products and services" (Juan Merodio).

  "The new generation needs to have confidence in what is presented to them and does not want to waste time researching facts, checking sources or waiting for fact-checking interventions." (Pedro Brandão)

"Humanisation will be more relevant, with greater identification of the journalist as the author. Moderated debate forums will have to be created as opposed to the wild discussions of today. The audience will perceive this human responsibility compared to the anonymity of most of the content" (Ricardo Jorge Tomé).

- Personalised and flexible access to digital content. Faced with the growth of GenZ youngsters, who are looking for speed and choice, television will have to look for new on-demand formats, while radio will remain strong and expand towards streaming and podcasts. "In recent decades, journalism has not managed to keep up with technological progress and innovation to reach its readers. It has always been a laggard, following trends, but never anticipating them and repeating the 'wait-watch-analyse-adapt' formula" (Pedro Brandão).

- Structural changes in the market, in the size of the players and specialisation versus conglomerates. "Many medium-sized companies will disappear, through concentration processes to achieve economies of scale. At the other extreme, we will see more small projects focused on niches" (Ricardo Jorge Tomé).

- AI-based language models will impact all phases of the value chain: ideation, organisation, audience creation and distribution. "I do not think that the implications on the employment dimension will necessarily be negative and affect only job losses, but that there will be a reduction in some sectors, many jobs will evolve, and others will be created. Work in newsrooms will be simplified, there will be less concern for form and more concern for content. I am optimistic that this type of innovation is for the best, but there will undoubtedly be a period of adaptation. The public has got used to free, short, quick, instant content, and this ends up hindering quality" (Yoann Nesme).

Challenges

- Strategic adaptability. Companies will have to be able to evolve rapidly in the face of innovation, in a more agile and planned way than with the advent of the internet and social networks. Expertise in technologies and, above all, a strategic vision, are needed to respond coherently and creatively, both in product adaptation and the choice of formats and language to build user loyalty.

- Security, data protection and intellectual property. Regulation and data protection will be fronts in the power struggle. "We can believe in a macro revolution in distribution processes. Right now, it is all about search engines and social media, but if that changes, everything will change. Regulation will be decisive because if it forces changes in distribution or remuneration, the media business could be radically transformed" (Ricardo Jorge Tomé).

- Disinformation. When it comes to AI, one of the problems is the size and quality of the database that feeds it, which is not free of bias, generating effects called "AI hallucinations." It will not be easy to clearly attribute technical failures or bias to the source of the data, to the elements that control their processing, or to the analytical and interpretative mechanisms themselves. Indeed, the source of the information will be unidentifiable and the constant ability to generate images from texts and produce personalised results based on indications could exponentially increase the confusion between what is fact and what is fiction, between what is a confirmed source and a mixture of information from sources selected by impenetrable criteria.

"We need human and technological filters. This has implications for trust and carries with its reputational risks for companies, professionals, and public figures. Positive evolution depends on economic and technological investment, continued control and, of course, regulation" (Juan Merodio).

What is most worrying is the influence on the critical spirit of those who receive AI-generated messages, as well as their right to know the source of that information. The lack of questioning is particularly serious and especially if the content coincides with their perceptions and ideas. At a social and democratic level, the potential impact on propaganda, voter influence through social media, the trend towards extremism or fundamentalism is of concern.

- Verified and ethical authenticity. "The demand for journalism as a training area and as a profession will fall, which will exacerbate the crisis in the sector. We run the risk of living in different and parallel realities, creating clusters of beliefs depending on who belongs to the group. Ethically and socially, a Seal of Truth will be required when the same journalistic content is presented by several sources, but the certification will be applied to all of them, validating the content and leaving freedom in the way it is presented" (Pedro Brandão).

- Business models. It will be a very difficult mission to create paying customers for free content. It is imperative that the new model includes monetisation in an innovative way, as opposed to the traditional model of advertising for content.

Opportunities

- Big Data as a source of business for companies that manage data ownership and monetise it. "The media also need to be technology companies and not just content producers" (Ricardo Jorge Tomé).

- New consumption formats. "The challenge is to reach users with journalistic content, the aggregation of different media to create a closer relationship with the consumer, and a leading approach that is original, which provides a channel on various platforms that is based on true facts, easily filterable and adapted to the consumer's profile, and omnichannel: you start watching on the bathroom screen, continue watching on your glasses and end up listening to the news in the car." (Pedro Brandão)

- Sustainable growth. Automation can be a lever for project and people management to reduce cost and waste.

- Companies must embrace continuous learning to understand what is happening around them, with informed employees who better understand their role and help organisations to evolve. It is possible to present only what is relevant to each person, creating various levels of content, density, relevance, impact, etc.

- Changes in power structures in the media ecosystem are related to macro, meso and micro transformation scenarios:

    a) Access to raw materials and rare metals.

    b) Complexity of the value chain. Exchange of data throughout the value chain and the ability to ensure its ownership.

c) Ongoing multi-platform customer relationships.

d) Rapid decision-making within an organisation.

e) Sustainability as a competitive differentiator.

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3.7. Business and marketing

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Experts

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Sergio Martínez Mahugo, manager of digital services, Mediterránea

Joan Boluda, online marketing consultant and head of Boluda.com

Personalisation of the consumer and shopping experience, AI and creative management will be the main trends in business and digital marketing, with a major impact on the strategies of companies in all sectors, including the media. AI will impact how they operate, produce, and deliver value to their customers and will also serve to dramatically advance the process of digitising business activities. At the same time, the rise of AI and algorithms will improve customer personalisation, matching products and services to their profiles and establishing direct relationships. This shift towards automation and data use will, paradoxically, drive the acquisition and management of creativity in organisations to capture the attention and imagination of consumers.

Trends and innovations

- AI-based language models will impact all phases of the organisation, creation and value distribution in companies. “AI has burst fast and hard into all industries, surpassing expectations. This technology is being used in multiple applications, from improving internal productivity to offering new services to customers based on all the knowledge accumulated” (Joan Boluda).
- *Personalisation*. Algorithms and AI systems will, in turn, enable an unprecedented level of customer personalisation. Companies are using these systems to collect and analyse customer data, allowing them to create highly personalised and enhanced experiences (Joan Boluda). This trend towards personalisation changes the way companies engage with their audiences and establishes new expectations in terms of quality. “AI could have a significant impact on the media, from content creation to personalised delivery. Tools such as ChatGPT could enable more efficient and personalised content production” (Lourdes Lacalle).
- *Advanced digitisation*. In the wake of the COVID-19 pandemic, companies, including the laggards, have been quick to adapt new technologies and digital platforms to fine tune their operations and offer better experiences to their customers. This digital immersion is not only redefining internal operations, but it is also changing the way companies connect with their customers and compete in the market (Deloitte Insights).
- *Sustainability*. Sustainability is an essential element in society and companies need to show a serious commitment to tackling their carbon footprint in the face of the

climate emergency. Sustainability will not be limited to a corporate social response, but will be integrated into strategic planning, marketing and internal communication. This could involve the transition to digital media over traditional media, minimising the use of physical materials in marketing and advertising, and prioritising partnerships with suppliers and collaborators that also follow sustainable practices (Lourdes Lacalle).

- *Creative management*. Data analysis and metrics have become fundamental tools to address the challenges of modern marketing. However, creativity will continue to be an essential component of marketing strategies. The key lies in the balance and effective combination of both aspects. Creativity plays a vital role in creating marketing campaigns that capture the attention and imagination of consumers, tell a story, and generate an emotional connection with customers.

- *Live marketing.* The rise of AI and process automation will drive live marketing initiatives through the creation of virtual spaces, real or AI-generated personalities presenting products and enabling the buying and selling of goods and services. The rise of influencers and streaming platforms can change the way the media interacts with its audience.

Challenges

- *Personalisation and bubbles.* The increase in personalised marketing and content can extend the reach of so-called "filter bubbles," which can limit exposure to different points of view and increase social polarisation. New formats, such as streaming or algorithmically personalised networks, can provide a more finely tuned experience and attract a younger audience, but can also present challenges in terms of content quality and information accuracy.

- *AI verification*. The increasing use of AI and digitisation may lead to the production of more content, but there may also be concerns about quality and reliability. AI could play both a positive and negative role in the fight against disinformation. On the one hand, it can help identify and filter fake news; on the other hand, it could also be used to create more convincing false information (Jaime Rodríguez). Blockchain will be able to help achieve transparency and security in the transmission of media messages, having a positive impact on quality and preventing disinformation (Sergio Martínez Mahugo).

- *Creativity versus artificial intelligence*. Companies must be able to combine the integration of AI and its analytical and generative models with creativity and talent management. Creative profiles capable of developing AI control engineering and designing original campaigns and messages that connect with audiences, will be key. The importance of data and metrics will require leaders with vision who know how to balance creativity and AI in their strategies (Sergio Martínez).

- *Sustainable growth*. Companies will have to be able to show a serious commitment to social responsibility and their carbon footprint. This challenge involves combining operational strategies and marketing management to attract audiences, expand symbolic capital, seek agreements with committed organisations and attract talent from generations more demanding of the business mission (Lourdes Lacalle).

- *Generational changes*. As young digital natives grow up, a significant shift in product and media consumption habits is expected. “Subscriptions to digital media services,

especially those offering on-demand content, are likely to increase in relevance. This could drive greater personalisation and segmentation of content and will challenge traditional media" (Jaime Rodríguez).

- *AI and originality*. AI is set to have a profound impact on the media sector. It can facilitate content production, both in terms of speed and quantity, but it also raises questions about creativity and originality. "AI may end up replacing the most routine tasks, but it may prove challenging for those jobs that require a high degree of creativity and critical thinking" (Jaime Rodríguez).

Opportunities

- *Sectoral demand in AI*. The rise of generative AI and its popularisation will provide the opportunity for new jobs and professional profiles specialised in information verification to prevent the use and spread of false information. In addition, new sectoral demands will emerge for profiles and products and services specialised in the design and refinement of personalised AI models for companies.

- *Technological differentiation*. Companies will introduce technology into their DNA, even if it is not their core competence, through substantial changes in the software they use in the organisation, in processes and in the final products and services. Another alternative that business organisations are pursuing is the creation of new digital platforms to expand their markets.

- *Multiplication and diversity of marketing formats*. New professions and services are coming that are oriented to the design of experiences and content adapted to the variety of media formats that are to come, from those focused in the metaverse, augmented reality, to live formats, sound, video, and at all sectoral levels, such as production, education, health or social. "These formats will come, but not so fast. And it will happen like AI: in four days, the degree of adoption will be brutal and will cause changes in consumption habits, in the interaction between users and the media, using all the senses, not just sight and hearing. Being the pioneer will be very important" (Sergio Martínez). AI is enabling the creation of fully autonomous videos and documentaries, even adapted to specific customer demands. "The speed of this innovation is so high that what is being talked about today may become obsolete in a short period of time" (Joan Boluda).

Conclusion

Digital and business marketing are living in an era in which they must balance the use of AI in production, distribution and marketing with the management and promotion of creativity. We are witnessing an era of AI as a co-pilot to humans in resolving tasks and designing personalised products. Consumers are entering a scenario of exponential growth of content and formats that demand new practices and ethical commitments among content producers.

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3.8. New narratives and formats

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Pau Llop, Digital Product & Project Manager, Prodigioso Volcán

Audiences accustomed to digital environments prefer forms of communication based on interaction, participation, and content personalisation. Actions such as choosing, acting, or experimenting have become commonplace demands in a constantly changing information context. The creation of innovative narratives and formats presents itself as an opportunity to attract new audience profiles, differentiate themselves from the competition and generate a greater emotional connection. However, their technological dependence often makes them the exclusive product of large media groups. Constant technological progress and the introduction of AI into production routines may help to reduce this inequality.

Trends and innovations

- *Implementation of AI in production routines.* AI can help in routine processes such as information searches, data synthesis or source verification (Pau Llop). From the point of view of interface design, it modifies the way users relate to information. It makes it possible to move from a mechanical interaction based on the use of buttons and hypertext, to a richer and more natural interactivity with a certain conversational component (César Peña).

- *Influence of social networks on other formats.* Content published on platforms such as TikTok or Instagram have proven to have a great influence on the rest of audiovisual content (Pablo López Learte). This trend is expected to consolidate in the coming years. We already find examples in the creation of products and visual narratives in vertical or split-screen format (César Peña).

- *Diversification of formats within the same medium.* Journalistic production is acquiring a transmedia perspective that allows it to bring content closer to different audiences. “We must understand that the information universe is no longer simply a newspaper front page, but that from the same content, we must diversify production in different formats” (Pablo López Learte). “The media is beginning to understand that this diversification is what gives us a bit of colour, which is what allows us to attract the attention of users. If you do not like reading the news, that is okay because you have a daily podcast or a visual format” (César Peña).

- *Personalisation of content.* The introduction of AI into production routines opens up new avenues for product personalisation. “The media is going to use AI not only to create content, but also to understand users a little better, what their habits are, their points of interest and thus be able to build formats according to their needs” (César Peña).

- *Experimentation in the metaverse.* Although experts generally agree that the metaverse will influence journalistic production over the next decade, there are doubts about its scope and level of implementation. One of the main reservations revolves around the technological development that must accompany this type of narrative: “Until we find technological supports that are accessible, that everyone has at hand and that are not tiring to use, it will be very difficult for it to grow” (César Peña). In the short-medium term, its use will be limited to a question of presence: “We will try to transfer the product to this environment so as not to lose market share, readers or subscribers. *Ad hoc* products will be developed, but the first approach will be to try to transfer market shares to this new environment” (Pau Llop).

- *Other virtual and sensory environments.* Beyond the metaverse, other environments will gain presence in the coming years. Augmented Reality, understood as the superimposition of virtual images on the real world, allows information to be experienced in a more immersive and participatory way. “Through the cameras on our mobile phones, we can implement virtual content that helps us to better understand our own reality” (César Peña). On the other hand, there is sensory journalism based on the use of physical and virtual interfaces that allow users to feel, smell or touch what the information shows (Miriam Hernanz). However, for sensory journalism, a technological development very similar to that of the metaverse is required.

- *Service journalism.* The boundaries between content, communication and information are increasingly blurred. In this sense, service journalism is presented as a form of differentiation. “This trend will grow as information becomes more open and public sources more transparent” (Miriam Hernanz). Other trends, such as blockchain, Web3 or NFTs come into play here (Pau Llop).

- *Greater citizen participation.* Audiences will play a more active role in the production chain, with greater involvement in the search for topics and in the creation and production of formats (Pau Llop).

Challenges

- *The economic barrier.* These narratives require a large investment of time and resources. Although there are more and more free alternatives, they remain inaccessible to many media companies (Miriam Hernanz). The implementation of AI in production processes may help to reduce this inequality to some extent.

- *Technological dependence.* The creation of new formats and narratives is closely linked to the technological development of the industry. It is therefore difficult to predict what kind of formats will predominate in the future. A new technology or code may emerge at any time that conditions the way information is displayed and consumed (Miriam Hernanz).

- *A certain reluctance to change.* “We come from a very steady situation within the media, especially among newspapers. All the technological revolutions we have experienced over the last 25 years may have been frightening, but you cannot resist all these dynamics” (Pablo López Learte). This reluctance to change is also observed among the professionals themselves. There is a generation gap within newsrooms that hinders the implementation of certain innovations (César Peña).

- *Existence of a technological and economic gap*. The development of these narratives implies a technologization of consumption that is inaccessible to certain

sectors of society. “Journalism will not be more inclusive unless we find partners that are public and make it easy, for example, in libraries, for users to have access to these devices” (Miriam Hernanz).

- *Regularisation*. As technologies and formats emerge, ethical and deontological doubts arise. In the case of AI, mechanisms need to be developed that enable its use to be regulated while respecting issues such as privacy, intellectual property or social responsibility (César Peña). In the case of virtual environments, the absence of legislation to control and curb the proliferation of messages based on disinformation and hate speech, is of particular concern (Miriam Hernánz).

Opportunities

- *Allies against disinformation.* The new narratives can help users to be better prepared when it comes to facing disinformation strategies. Experts highlight two key tools: blockchain technology, which allows the creation of online content verification systems that confer credibility (Pau Llop); and interactive and immersive content, which promotes user participation and creates educational experiences that help to better understand the information (César Peña).

- *Differentiation.* “These technologies are much more sophisticated and give the media the opportunity to demonstrate its relevance within the communication landscape” (Miriam Hernanz). In an ecosystem in which the barriers between producers and consumers are increasingly blurred, a commitment to new formats represents a differentiation with respect to other players that continue to gain presence and visibility.

- *Product refinement*. The involvement of users in production processes can help to test and refine products before they are launched. “Involving users allows us to iterate. This is very useful because in your head it might be perfect, but it still may not work if it is not what your audience expects” (Pau Llop).

Conclusion

The production of new narratives and formats is closely linked to continuous technological progress and changes in consumption. Experts recommend a diversification of supports that allows content to be brought closer to different types of audiences. They are also committed to the creation of immersive formats in virtual environments such as augmented reality, the metaverse or sensory journalism. For its part, AI promises to facilitate routine processes and offer a richer and more natural interaction with the audience.

The main challenge lies in the mechanisms that allow the implementation of these technologies to be regulated while respecting the ethical principles of privacy, intellectual property and social responsibility. Moreover, this technologization of consumption turns new narratives into an information product that is inaccessible to some sectors of society. It is necessary to reach collaboration agreements that allow public access free of charge.

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3.9. Training

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Urbano García Alonso, director of Innovation and Digital, RTVE

Training in the field of media and journalism requires constant adaptation to technological innovations and social contexts, and the exploration of new skills and procedures. The integration of AI in newsrooms is creating greater expectations and uncertainty. Interviewees see it as a tool that will require additional skills on the part of journalists, which, if properly used, may save on routine work, although they admit that there may be some ignorance about its role in journalistic production. Less contentious is the importance of knowledge in data analysis and thorough fact-checking. Another of the curricular lines that is becoming consolidated consists of the construction of news in different formats and narratives, with an emphasis on video and audio, to respond to the growth in consumption through social networks and the attention economy caused by the use of mobile devices.

The need for journalists to constantly update their training is, in fact, claimed by the journalists themselves. 80% of them recognise this lack and most admit to teaching themselves, outside the professional structures in which they operate (Cardoso et al., 2019). On the other hand, the journalism teachers interviewed for this research report that students demonstrate learning difficulties not in acquiring technical skills but in combining this knowledge with the values of journalism. The quality of the information depends on the integration of technological aspects, economics, and essential principles of the profession (Marta-Lazo et al., 2020). In the field of training, there is also a debate on how to reconcile multi-tasking with rigorous journalism. Journalists are expected to have knowledge of writing, drawing, photography, infographics, radio, television, and the internet, but if we dispense with specialisation, we may be renouncing excellence (Acedo et al., 2013).

Trends and innovations

- *Technical skills*. Valuing more practical learning. Interviewees recognise the need for learning focused on know-how, to the detriment of the theoretical version of what journalism should be. “A new catalogue of jobs, competences and skills is required: technical skills (specific to the profession), digital skills (because of their importance they require specific training) and “soft skills,” such as teamwork and flexibility,” says Urbano García Alonso.

- *Various formats*. Knowing how to produce information in various models, with an emphasis on video and short-format radio and the podcast model.

- *Image resource*. Growing use of image narratives, such as the use of iconography, especially infographics, photographs, and videos in digital environments (Fátima Cardoso).

- *Unconventional narratives*. Using new ways of telling news, coming from networks such as TikTok, which require, for example, a script with little written text and focused on the image. “This trend for information, in vertical format and video through small devices such as mobile phones, is a trend that will continue until 2030” (José Moreno). Miguel Midões argues that students preferred for a topic to be explained through a video he had made during the pandemic to his face-to-face explanations in class, testifying the importance of video for the new generations.

- *Valuing data journalism*: in research and news sources and as a sub-discipline of journalism.

- *Artificial intelligence, AI.* Benefit from the advantage of using ChatGPT or similar tools. Take advantage of automated processes in news production. “Teaching how to produce summaries, for example” (Fátima Martínez). In the opinion of José Moreno, “algorithms are a rudimentary version of AI, and what we are currently seeing is an explosion of AI manifestations and therefore, what is going to happen is that we need to be prepared to, in training, prepare journalists to deal with these tools.” In any case, there is no consensus on this issue. Miguel Midões has some reservations about the advantages of journalism without human intervention. "I believe that it is very difficult for AI to do journalism.”

- *Verification and fact-checking techniques*. Students need to be aware of the importance of verifying all information, checking the validity of sources and avoiding biased ones, which convey opinions disguised as facts. “I have been researching the area of misinformation and media literacy and the first results with students were terrifying. They confused journalists with entertainers,” Miguel Midões. Perception changes subsequently and students are more aware of misinformation phenomena.

Challenges

- Doing journalism based on data and not on intuition (Urbano García Alonso).

- Need for greater investment in infographics, as this is a format that communicates easily with readers (Fátima Cardoso).

- Search for what has added value for users. Interaction is central. “The generation of communities of interest gives us an idea of the audience through the community, by means of permanent and true interaction with our viewers” (Urbano García Alonso).

- Reconciling the values of journalism with a technical approach. Teachers detect in students that “they like to do things but do not want to learn the whole process” (Miguel Midões).

- The question of the logic of multi-tasking is not agreed. Miguel Midões argues that journalism should not focus on a precise technique. “That is why it does not make sense to have a chair in a radio or television studio,” he says. The expert, Fátima Cardoso, warns about the risks of multi-tasking. “Weak investment in resources means that journalists need to think in several languages at the same time –text, photography, video and sound–, which leads, in some cases, to a loss of quality in journalism.”

- Investing in new skills within journalism, in addition to those inherent to the profession, such as digital skills, for which specific training is needed, and the skills of adaptation, work flexibility, teamwork, emotional intelligence and empathy (Urbano García Alonso).
- Knowing how to use new AI systems properly, preventing them from contributing to the construction of an alienated society, which is losing its critical spirit (Fátima Cardoso).
- Being able to do journalism on platforms such as TikTok, a network that works on a vertical screen, with a quick narrative, without written text, which requires a completely different narrative to previous ones. “The media has a lot of difficulty in using the TikTok-type narrative, but this is what they have to do if they do not want to alienate more young people who do not otherwise come into contact with the news. If we do not publish the news on these platforms, we run the risk that some young people will never find the news because of their algorithm” (José Moreno).
- Battle for news attention. The aim is to capture readers’ attention without resorting to clickbait (José Moreno).
- Trying to restore readers’ trust in information, also using dynamic and adaptable verification mechanisms. “We are on the verge of irrelevance because we no longer have a monopoly on the production of information, nor are we able to incorporate new content creators into our concept and workflow” (Urbano García Alonso).
- Create a product-centric mindset, bearing in mind the intersection between technology, creativity, and distribution (Urbano García Alonso).

Opportunities

- Leverage automation technologies to invest in more creative journalism with greater investment in reporting.
- Create content creation systems, data platforms, analytical tools, programmatic advertising platforms, subscription platforms, artificial intelligence systems that serve the interests of journalism (Urbano García Alonso).
- Create communities around the journalistic brand to regain trust and credibility (Urbano García Alonso).
- Space for entrepreneurship, creation of new projects in journalism, with the possibility of creating individual projects (Miguel Midões).

Conclusion

Journalism training will tend to favour practical and technical skills related to the use of AI and the development of new narratives, from infographics to news adapted to multiple formats. This methodological renewal must be carried out without undermining the principles and values of journalism. The experts interviewed stress the need to combine these two paths.

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3.10. Advertising

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Experts

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Francisco Fernández Beltrán, professor, Universidad Jaume I

Nuno Leite, Retune

Nuno Rodrigues, Lupi

The experts interviewed characterise the current situation, marked by the growing datafication of the relations between production and consumption and the massive introduction of AI, as a time of radical change, where the transition is more rapid and the consequences uncertain, both for the commercial sphere and the private sector, communication and for the future of the media in general, compared to previous innovations in the ITC sector. Like machine learning and automation, Virtual Reality (VR), Augmented Reality (AR) and the metaverse, together with other disruptive innovations, are driving the transformation of creative and production models to monitor the return and impact of campaigns. Experimentation in the advertising sector follows market trends (Deloitte, 2022; 2023), predicting consumer behaviours, individual preferences, and hyper-personalisation of content, based on data analysis (Davenport et al., 2020).

On the other hand, the practices of using Big Data and AI feed not only content generation or programmatic advertising (IBM, 2021), but also synthetic advertising practices, the most sophisticated form of advertising manipulation, linked to techniques such as deep fakes and confrontational generative networks to automatically create content that portrays an “unrealistic” but convincing reality (Campbell et al., 2021). Social and personal risks are increasing, as are ethical issues and the need for transparency, best practice, and regulation.

Trends and innovations

- Atomisation of the consumer as an advertising target and behavioural prediction based on behavioural data and predictive analysis.
- Hyper-segmentation and personalisation of commercial and multimedia content. Consumers tend to prefer content adapted to their interests and beliefs, which allows them to interact in a more personalised way, in audiovisual, podcast and streaming formats. On social media platforms, there is a preference for native and organic content, of great relevance for digital influencer marketing.
- Growth of programmatic and interactive advertising, with the buying and selling of advertising space, and the testing and tracking of campaigns in real time.
- Growing need for constant reformulation and adaptation of strategies and brand positioning, in order to personalise audiovisual content, including advertising in its different formats (Display/MRec, promoted posts, dark posts) in search of attention and coherence in the eyes of the public. For the consumer, storytelling lost its impact compared to *story doing*.

- Virtual reality (VR), augmented reality (AR) and the metaverse are changing consumption forms and spaces, facilitating more immersive experiences and enhancing business and communication opportunities for brands. It will be a differentiating and competitive socio-technological axis.

- Rapid evolution and massive integration of AI (practical and generative) and chatbot. Automate and improve efficiency in the performance of professional tasks, data analysis and content generation. Greater automation in the production, dissemination and personalisation of access to content, including information gathering, creative stimuli, content generation regardless of format, definition of channels and publication times, with adaptation to trends imperceptible to humans.

- Blockchain and NFT could produce and guarantee the security of transactions and the stability of protocols useful for regulating operational and regulatory systems.

Challenges

- Big Data. It is necessary to overcome technical, compatibility and interoperability challenges between automation and algorithmic operation systems, as well as economic challenges linked to the ability to invest in technology and talent, proving to be decisive competitive factors in the reformulation of dominant market positions.

- Work, training and professional adaptation. The automation of AR and AI will have major implications for the logic, modalities and tasks of work, and will have an impact on the reduction of employment. The transformation of interfaces and the way content will be created and consumed, requires algorithmic literacy and new skills for journalists and content creators, namely technical and analytical. New logics will emerge for recruiting new talent, creating new professional figures and hybridising existing ones. This trend affects marketing and will lead marketers to use new tools and strategies adapted to the emerging behaviours of consumers and other stakeholders in the media sectors.

- Transparency and trust of broadcasters and content. New parameters defined and demanded by Generation Z (and beyond) that will influence models of interaction, consumption, and control. They are concerned about 1) the lack of transparency and the consequences of using AI on the verifiability of content, sources, and intentions; 2) the disinterest of most digital users in these issues; 3) the reinforcement of beliefs, filter bubbles and echo chambers; 4) the reduction of plurality of opinions and more critical attitudes towards digital content.

- Social fragmentation and increasing inequalities. “We run the risk of widening the digital divide between generations and, above all, between people of different generations without access to technology” (Francisco Fernández Beltrán).

- Ethics, social responsibility, and sustainability. Advertisers “will continue telling little stories that appeal to the imagination and help their audience believe that they will be much happier if they buy the product/service they are promoting” (Nuno Rodrigues) or “they will be pressured to comply with social rules and regulations” (an anonymous expert). Necessary adaptation to regulatory and social requirements regarding sustainability parameters (environmental, social and economic) given the increasing demand for specific measurable action plans, and transparent and substantiated communication.

- National and international regulation regarding data, security, privacy, and intellectual property. Current failures and "uncertainty with respect to the discussion and articulation (national and international) of regulation regarding rights of access, gathering and use of data by platforms and companies to direct messages, train AI, create algorithms and monetise data" (Nuno Leite). Risks to copyright and intellectual property protection. Regulatory requirements apply to marketing to sensitive, aspirational and profitable target audiences, such as young people and children.

Opportunities

- Democratisation and greater training in content production through collaboration and co-creation between companies and consumers. Prosumers will be able to create increasingly professional and credible text and image content through AI.

- Automated data-driven business culture. Deep transformation throughout the value chain, focuses on channelling investment towards technological innovation, which accelerates and streamlines internal processes and automates decisions and functions that existed previously and depended on the human factor. Organisational changes in terms of managing and investing in human resources. On the one hand, greater efficiency in content production and internal processes, and, on the other hand, collateral effects on the rate of redundancies and ethical-moral risks in the long term, are expected.

- Influence and macro changes in the business models of the GAFAM ecosystem and its service offering, with possibilities (meso and micro levels) to create new revenue streams and a higher return on investment for its content user-producers, through the evolution of interactive advertising, for example. There remains a higher survival risk for producers of hyperlocal content producers.

  "The quality of business communication will improve based on the tools available today that also enable greater relevance of the message and greater effectiveness in reaching the defined target for the defined objectives, whether conversion, awareness, engagement… Yet, it will improve. It largely depends on how the media industry will operate, whether with a view earning excessive profits through advertising or with a view to the quality and credibility of the content" (an anonymous expert)

- AI-enhanced digital marketing can contribute to the fight against disinformation. AI encompasses risks and opportunities: it allows the generation and identification of self-created content, offers a comparative source of data, and improves the segmentation of information, but it can also contain bias and spread erroneous information more effectively. Targeted advertising enables accurate and truthful information to be found and influencers can help with its dissemination. When they do so effectively, they contribute to widespread dissemination, but without regulation they can also be a means of transmitting false information, whether for economic or political interests. Advertising can also be misleading; content marketing can be sensationalist and focus on generating clickbait.

Conclusion

The latest technologies are already integrated into the advertising sector and professional routines, where some current and future challenges differ from those that characterise other

sectors of digital content production, especially journalism due to ethical, deontological, regulatory, economic and innovation issues.

Maintaining the autonomy and relevance of marketing specialists depends on constant updating, training and innovation in work strategies and tools and managing relationships with customers and their audiences. The approach crosses technological, creative and experimental innovation capabilities.

Business sustainability is affected by technologies that dominate the advertising market and innovation in AI, VR, AR and the metaverse. The solutions are based on maximising IT and automation, technology enabled production efficiency, co-creation with audiences and personalisation.

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3.11. Metaverse, Virtual Reality and Augmented Reality

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Pedro Lozano, CEO, Imascono

Pedro Marín, manager, Metaverse Continuum Business Group, Accenture

The metaverse will sustain the design and infrastructure of the new internet in the coming years. An interoperable metaverse does not yet exist as such; technologies are creating the standards for the immersive web through virtual platforms with different visions and business models. By 2026, successful use cases for the media sector will have been validated and the metaverse will generate enormous business and revenue potential. Amplified reality, which combines augmented reality (AR) and virtual reality (VR), will be the driver to turn it into a mass product. However, the implementation of the metaverse will still be gradual throughout 2025.

Trends and innovations

- *Amplified information*. The convergence of technologies (AI, *cloud computing*, VR, AR, 5G and 6G…) contributes to generating environments where people make decisions in a contextualised way. Users, by means of lightweight glasses, will be able to receive information and act accordingly as they are walking down the street, browsing a supermarket shelf or watching TV. It does not have to be an immersive experience in the strictest sense, but content that amplifies the user experience and enhances three-dimensionality. Brands like Ikea or El Corte Inglés already allow users to virtually try out how furniture or household appliances would fit in their homes. In this internet of the senses, users interact immersively, through sight, touch, hearing and even smell, with the objects that appear on the screen and in their environment.

- Users want to be part of the action and, as with social networks, it makes it easier for them to experience the stories and be content creators. AR/VR offers a range of tools to go beyond the screen and turn users into the explorers and protagonists of the stories. It will move from *Storytelling* to *Storyliving* and *Storydoing*: users' avatars will interact immersively with the content and other avatars. "The media must accompany users who socialise and design experiences that bring them value, through games, co-creations and engagement; if the media is not present on these platforms, they will lose a whole generation" (Pedro Marín).

- The home is being reconfigured as a living space where users increase their immersive experiences, together with video games as an escape mechanism and OTTs (Netflix, HBO…) under subscription models.

- An economy based on blockchain and tokenisation on platforms incorporates a redistribution of value between users and the media. Users will not only pay to

access the content; if the media requires a greater effort in a three-dimensional interaction, it is logical that it also rewards them. Monetisation models will be designed based on subscriptions to immersive experiences. However, appropriate indicators and KPIs are yet to be defined.

- Creation of hyper-realistic avatars. Generative AI and the use of deep learning systems will be key to accelerate the time to market of news and improve the narrative when it comes to reporting. Users look for answers to practical questions that improve their lives. For example, having a digital twin of a presenter offering personalised weather forecasts.

- There will be at least 4-5 years of transition between current devices and fully immersive experiences through new devices. Companies can educate audiences on the screens they already use regularly, for example, by means of desktop-mobile amplified reality. Branded content formats will be promoted for brands with narratives based on spatial sound and immersivity by means of AR and VR.

- Generation Z/Alpha will control the metaverse in ten years. “Socialisation is already happening on Roblox, Fortnite, Minecraft etc., where teenagers have 100% virtual friends, adopt their own currencies and feel comfortable co-creating, collaborating, making transactions and playing immersively” (Pedro Lozano).

Challenges

- The metaverse is under construction, with technology that has not yet generated the outcome expected and needs to evolve. Some experts consider that, in 2023, the metaverse is still at 10% of its potential development and that 2024 will be a critical year for its growth.

- Experimentation with different business models. The sale of virtual assets already works on some platforms. However, the implementation of the virtual wallet is disastrous as a user experience. Any currency (real, crypto or tokens) needs to be interoperable. The total number of VR glasses around the world (25 million units) is still too small for mass implementation.

- Legal insecurity in virtual worlds. There are cases of abuse, sexual harassment, bullying, fraud, theft, identify theft, etc. There is still no ad hoc international regulation, but only the rules adopted by each company.

- Dissociation with the real world. The fact that children under 18 are spending 3 or 4 hours a day in the metaverse with different avatars and identities, developing games and relationships, leads to a number of adverse psychological effects. There are problems of dissociation between the utopian life in a virtual world and the reality of their own existence (family, studies, friendships, problems…).

- The fact of knowing how each user’s avatar moves its eyes, hands or feet, and what emotions it is feeling at any given moment through its facial expression, raises the need to maximise privacy and regulate the use of millions of data available about each user’s behaviour.

- Sustainability. The development of the metaverse will mean an exponential growth in energy consumption a thousand times greater than at present, due to the need to connect supercomputers with large data processing capacity and electrical consumption and therefore increase the environmental impact.

- Disinformation will be a very relevant problem in the metaverse. “In a social network, you can control what is happening and decide to silence or block some specific users, but in a virtual environment with avatars and three-dimensional spaces, it will be more difficult to counteract disinformation and fake news” (Peter Lozano). “Deep fakes, identity theft and hoaxes will increase exponentially, although the traceability of content through blockchain may partly mitigate this problem” (Esther Paniagua).

Opportunities

- Personalised virtual assistants to stay informed. “We will have a personalised virtual assistant that, according to all the algorithms it has on the user, and which the user will be configuring, will provide personalised news. The media has to understand that information will no longer go through them as much” (Adrián Ruiz).

- The killer app in virtual spaces is to gamify the remote worker’s experience through social mini games and other resources. “Virtual spaces offer workers a more friendly, playable and empathetic workspace with colleagues. In addition, HR managers can access workers’ KPIs and check if the employee is in social, competitive or collaborative mode. They can detect moments of stress or sadness and track the KPIs generated by the user” (Patricia Val).

- A media company does not need to create its own metaverse. “Let us break the expectations of the hype stage. Nobody is going to enter a priori in a metaverse created ad hoc by a media company. Audiences are used to watching streaming in specific spaces; if you ask them to attend a presentation in the metaverse, maybe ten people will attend. We must avoid something very common: repackaging everything available to put it in the metaverse environment does not work” (Oscar Peña).

- The media should strengthen the marketing and engagement with their brand at events aimed at their target users. “Audiovisual media make it easier to experiment through immersive experiences; I recommend that managers follow the trends and not make large investments for the time being” (Esther Paniagua). “The media can experiment with users through the co-creation of immersive content on these platforms: learning and iterating to profile behaviours and design useful and valuable experiences” (Pedro Marín).

- Strategy: develop immersive experiences on far-reaching topics. “For example, to explain the consequences of climate change, it makes sense to create a fully VR experience with sensory impact. In order to achieve the communication objectives (surprise, change perception), each technology has a role to play. The media will also incorporate AR/VR experiences into their branded content strategies” (Oscar Peña).

- The media should strengthen their user communities. “They will promote the creation of a community, a niche with its own way of informing and communicating, where users feel involved and interact” (Patricia Val).

- New journalistic and communication profiles are required. “We are looking for professionals, with specialised profiles, to help us build these experiences. We are used to generating 2D images, through skills that amplify the information according to the user experience” (Oscar Peña).

Conclusion

The development of the metaverse is going through a phase of uncertainty after the euphoria of recent years. However, the mixed model of amplified reality will gain strength and contribute to the implementation of an immersive web. Experts recommend that the media should follow the future development of the metaverse and its growth, without rushing their investments. The strategy is to develop some immersive experiences in coverage that can bring value to their users.

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3.12. Scientific communication

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Expertos entrevistados

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Laura Chaparro, head of newsroom, Science Media Center Spain

Luis Quevedo, director of strategic projects, Fecyt

Manuel Falcão, journalist, EGEAC - LISBOA

Mari Carmen Erviti, researcher, Science Communication, University of Navarre

In the current landscape characterised by multiple possibilities of access to information and autonomous content production, scientific communication is no longer a monopoly of the media. Social networks are the most widely used of the internet-based channels for queries on all science topics (Fecyt, 2023). According to the survey, institutional websites are also frequently used. Regarding trust and credibility, the consultation shows that society has received false information about Covid-19, climate change, food, and health issues. This content tends to come, first of all, from social networks, followed by TV. The Digital News Report 2022 also warns about disinterest and the trend to avoid the news. In Portugal, 34% of respondents actively avoid the news and 9.4% indicate that they avoid information on scientific topics.

The digital era presents a context in which it will be necessary both to address the challenges posed by digital media and to take advantage of its opportunities to interact with audiences more effectively (Metag, Wintterlin and Klinger, 2023). In the future, scientific communication should be conceived from the mutual interaction between science and society, in order to help the public bears science in mind in the management of their daily lives on the one hand and, on the other hand, also bearing in mind that the social image of science can interfere with scientific performance (Cornejo Cañamares and Coto Suárez, 2022). The joint debate between communicators and researchers is increasingly necessary in the discussion about the value, quality and effectiveness of what is being disseminated. The goal is for science and technology communication to live up to its potential in a world that desperately needs it (Jensen and Gerber, 2020).

Trends and innovations

- The Covid-19 pandemic marked a turning point in the social prominence of science communication and this prominence will persist in the coming years. The crisis triggered by the pandemic has enriched journalists specialised in science and academic-scientific knowledge is expected to have more influence on coverage (Luis Quevedo).

- The big, interconnected issues will remain at the top of the science news agenda: climate change and health issues. The One Health[1] concept is a key issue in communicating these topics in a contextualised way (Laura Chaparro).
- Communication related to the Sustainable Development Goals (SDGs) and Agenda 2030. Some media outlets stand out with sections focused on the SDGs and initiatives aimed at monitoring the organisations responsible for achieving the agreed actions (Laura Chaparro).
- AI and its developments are another key trend, as it allows the media to understand what content each reader wants to see (Mª Carmen Erviti). AI can reduce speculation and increase verified information. Its evolution will depend on how the public adheres to this type of application, but it will play an important role, surrounded by uncertainty (Manuel Falçao).
- Scientific communication has also become more autonomous, outside the traditional media, because of the role that institutions have adopted. In recent years, research institutes, universities and centres have begun to understand that they need their own communication teams and are investing in them (Ángeles Gallar).

Challenges

- Content shared on WhatsApp, TikTok or Telegram do not usually come from the legacy media or institutions, so one of the challenges facing science communication is to get into these personal communication channels. “Neither institutions nor those of us who work in these fields are managing to penetrate these channels" (Laura Chaparro).
- Technology runs the risk of building an “echo chamber” because when communicating through the regular channels, it is difficult to reach an audience that is not already interested in science. The disinterested public, the biggest target, is not found in these spaces (Luis Quevedo).
- The strategy must prioritise the quality of the information and the ability to connect. Working on good rhetorical skills and quality argumentation is decisive: “It is not only the rigour and quality that counts, how well you are perceived by your audience and the emotional coherence of the stories you tell, is also crucial” (Luis Quevedo).
- In the fight against scientific disinformation, fact-checkers will continue to be key. Fact-checking is a transversal and intrinsic trend in the journalistic profession, a vindication of quality journalism (Laura Chaparro).
- Disinformation about climate change is a particular concern, not in terms of denialism, but in terms of generating an atmosphere of inaction and delay: “The evidence can no longer be denied, but new arguments are appearing that focus on delaying interventions and measures, which generates disinformation and creates a breeding ground for inaction” (Laura Chaparro).
- Data transparency by institutions is vital. The fight against disinformation is not the exclusive responsibility of the creators of information and those who receive it, but also of public authorities and companies. There is also a warning about the control of communication by the “big communication giants,” such as Google, which are

[1] One Health is an integrating and unifying approach that aims to balance and optimise the health of people, animals and ecosystems in a sustainable way, according to the World Health Organisation.

further removed from democratic values than the traditional journalism industry (Elena Lázaro).

- It is necessary to work on the media literacy of citizens by seeking a deeper understanding of how the media and science itself work (Elena Lázaro).

Opportunities

- Scientific aspects are gradually permeating society as it becomes increasingly aware that its environment is largely conditioned by developments related to science and technology.
- There will be an increase in specific sections dedicated to explaining climate change and health issues through analysis, immersive narratives and data visualisation.
- Formats that showcase the transition from the physical to the digital world: forums, talks or meetings on streaming platforms, designed to reach different audiences, as users who consume this type of experience are not necessarily the same as those that consume scientific communication (Ángeles Gallar).
- The set of formats based on audiovisual content, podcasts, and videos, will also continue to grow, and must be designed with a clear goal: to provide content endorsed by reference sources (Ángeles Gallar).

Conclusion

Information on scientific aspects permeates society. The challenge posed for both communication and society by Covid-19 has been a learning experience and has consolidated the importance of reporting on these issues. There is an increase in informative content on social networks and institutions are investing in their own channels, seeking a close relationship with audiences. This context means that the media is facing pressure from two sides: the emergence of new forms of communication and the rise of new players related to the scientific field.

Joint work between communicators and researchers in the coming years will be essential for science information to gain in effectiveness and quality. The challenge is to reach those audiences that a priori show no interest in science; to achieve this, it will be necessary to rely on technology, narratives, and creativity. Science communication is influenced by other closely related areas such as the environment, health, technology, education, ethics, history, or politics. It is necessary to take this transversal perspective into account to design effective communication strategies.

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3.13. Work organisation

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Pepe Cerezo Gilarranz, Director, Evoca Media

The organisation of the work of journalists is a central dimension of the media ecosystem that is undergoing highly diverse transformations that affect journalistic practice, ethics, and the dynamics of media sustainability.

The intersecting factors between the organisation and structuring of journalistic work and the mitigation of disinformation are a sensitive aspect, heaping additional pressure on an ecosystem already under pressure from the challenges imposed by financial sustainability, hyper-accelerating news cycles and the hyperactivity and abundance of news and non-news content.

In addition to internal aspects, the organisation of journalistic work is also determined externally by the pace imposed by mediation platforms and their growing weight in media diets (Newman et. al, 2022; Cardoso et al., 2022; Vara-Miguel et al., 2022). The topic most discussed by experts is technological progress: technology simultaneously as a benign and empowering agent for journalists and newsrooms, and as a friction factor, imposing accelerated rhythms and practices on professionals.

Trends and innovations

- Organic assimilation and integration of technological resources. Technology is increasingly present in journalism and this integration tends to intensify as new resources (AI, for example) are introduced. This integration will simultaneously train and put pressure on professionals. From the point of view of its evolution, technology presents itself as an unavoidable element in work organisation, which raises questions related to the human resources structure of companies: "Today, the control operator is one person, the lighting operator is another, the camera operator is another and someone else in a documentary, etc. For example, these functions are already merged into a single person through technological development" (Nelson Silva). In this sense, technology promotes the diversification and institutionalisation of professional profiles highly specialised in technological skills (analysts, data scientists, designers, etc.).

- The reconfiguration of skills and training frameworks. There is consensus on the emergence of the "multi-skilled journalist," a professional trained to work on multiple tasks at the same time, using a wide range of methodologies and technologies. However, the issue of skills change is also seen as an investment in technology rather than in the professional: "There will no longer be investment in professional training and in ensuring the quality of professionals at an economic level, as already occurs today, efforts will focus on guaranteeing income for investors" (Licínia Girão).

It will be necessary to balance the opportunities and challenges enabled in journalists' skills and the added value for brands in a context of economic pressure.

- From remote to on-site working, through hybrid models. Remote or hybrid working is an unavoidable issue in the wake of the Covid-19 pandemic. Globally, most news organisations have already implemented hybrid and flexible work organisation structures (Cherubini, 2022). Despite confirming some benefits, such as improved work-life balance, some negative aspects have also been noted, such as the impact it has on the integration of journalists and their professional socialisation.

- Frictions caused by the loss of preponderance of on-site working have been identified, which leads to significant changes in the newsroom, affecting the way young journalists coexist and learn from older journalists. The benefits of hybrid models are inseparable from their negative aspects, such as substantial changes to the way journalists organise themselves and exert their power in the newsroom as a professional group with a framework of specific practices.

- Precarity issues are not new in journalism (Cardoso et al., 2019) and will grow in the future, due to work overload, the acceleration of information circulation and the imposition of platforms on continuous news cycles. Precarity issues will gain relevance, given the fear about the migration of certain tasks to the field of AI and the worsening economic situation of the media, which will result in the perpetuation of freelance journalism and temporary employment contracts.

  This aspect is related to weak pay conditions, which make career progression impossible: "The first implication will be the decline of newsrooms as, with low salaries, people are leaving the profession, while older workers earn more and are replaced by younger ones" (Luis Simões).

- The problems of disinformation are directly related to two aspects of journalism: the loss of consumer trust and the adaptation of journalistic structures to the digital ecosystem. Information circulates increasingly rapidly, overlaying news with content generated by users, which makes it difficult to map phenomena and identify disinformation. Fact-checking is a trend that is here to stay, either through its introduction into traditional journalistic structures or through the rise of independent fact-checking platforms. While many brands already have internal fact-checking structures, most media outlets report that there is no differentiated set of practices within these structures (Moreno-Castro and Crespo, 2022).

Challenges

- Technology will enable the readaptation and increased competitiveness of media in digital environments.
- Disinformation and acceleration of news cycles, imposing an increasingly accelerated pace on a profession already under pressure from performance-based business models.
- Hybrid working and difficulties in “newsroom socialisation”, young journalists who spend more time outside the newsroom without receiving informal and formal training through living in that environment: "The essence of journalism germinated in newsrooms; the fact that each individual is working from home for a newspaper entirely produced at a distance, has significantly damaged the defence of journalism as a professional activity" (Licínia Girão).

Opportunities

- Multi-specialised newsrooms due to technological evolution, the entry of new professionals with technical and management skills, who can transform journalistic content and practices: “The transformation of teams and organisations is still at an early stage. More profiles are emerging with a shared vision of the newsroom and business, advertising and subscriptions, retail and content” (Pepe Cerezo).
- Competence of journalists and renewed social recognition of the profession, increasingly adapted to new demands: "Technology accelerated the changes and now AI and automated learning have impacted the way we organise and recruit talent" (Luís Pinheiro). Hybrid working can significantly improve the retention and attraction of talent, of professionals who are better able to work in new environments (Alexander et al., 2021).
- Journalism as a key player in mitigating disinformation using specific tools to detect it: “Investing in information as the only way to combat disinformation because there is no other way. There is no other way to combat disinformation than information” (Luís Simões).
- Fact-checking and regaining audience trust, strengthening fact-checking and reconfiguring journalism as a mediator of debate and moderator of the public sphere.

Conclusion

The dimension of work organisation in journalism will be strongly influenced by the intersection with the sphere of technology and technological evolution. At a time when the media ecosystem is still incorporating the changes brought about by the institutionalisation of hybrid working, with advantages and disadvantages, new challenges are emerging, such as AI and its uncertain impact on the sector.

Work organisation will evolve towards creating sustainability in this changing landscape as it seeks to prepare professionals for the future, boosting their competence, building multi-specialised newsrooms and developing reliable tools and content that will enable them to combat disinformation and affirm the roles of the sector and its professionals.

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3.14. Journalistic culture

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Experts

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The concept of journalistic culture has gained importance over the last two decades (Nicolás, 2015), understood as "a particular set of ideas and practices according to which journalists consciously or unconsciously legitimise their role in society and give meaning to their work for themselves and others" (Hanitzsch, 2007). This understanding is based on three pillars: working methods (formats, relationship with sources); attitudes and values; and perception of reality (newsworthiness criteria). It should be pointed out that journalists are a transnational, interpretative community (Traquina, 2004), which shares, for example, a difficulty in coping with time constraints.

Journalistic culture is undergoing a profound transformation with regard to its modus operandi, which reflects the implementation of tasks that AI can perform and the adaptation of the news to increasingly visual and fragmented platforms. It will therefore imply the disappearance of some functions and professions, the emergence of completely new ones and the transformation of those that remain (Moreno and Cardoso, 2018).

Trends and innovations

- Accelerated time. Journalistic culture will continue to have to deal with a dizzying pace in order to respond to the needs. Production will continue to prioritise instantaneousness (Joaquín Fidalgo).
- Fragmented space. Distribution of information in a fragmented space, that is, between multiple platforms and channels such as newsletters and other formats (Joaquim Fidalgo).
- Media interpenetration. Traditional media are mixed with social networks to the extent that the latter are now sources of information and inspiration for news work. The exit door (sharing) of information has been on the social network, but this is now also the entrance door (Joaquim Fidalgo).
- Prejudice towards information on the networks. Journalistic production has not adapted to the new model. "There is a certain arrogance in the way journalism views networks, as if they were rubbish," says Joaquim Fidalgo. "And yet they are an opportunity for people to communicate. That is why, however much they are questioned, they are part of the democratisation of the public space."
- Hybridisation of journalism. Products deliberately created to resemble other content with which they share the media sphere, in order to capture attention, which ends

up disfiguring the journalistic product and compromising its differentiation from other messages (Joaquim Fidalgo).

- Short pieces. Proliferation of short-term platforms, whether text, image or sound (Alejandra Figueira).
- AI tools will handle tasks that do not require creative elaboration and it will make sense for journalists to specialise and add value. “The figure of the generalist journalist will no longer make sense and there will need to be a much more specialised role, one that can provide added value,” says Luís Cucarella. In other words, AI is considered to be a complementary element and not a substitute.
- Data journalism. Journalists can consult huge volumes of information and detect anomalies that reveal issues of public interest. Data journalism will facilitate journalism of greater quality, depth and scope (Alejandra Figueira), deepen knowledge and bring new stories into the public sphere (Joaquim Fidalgo).
- New ways of telling stories. It is possible to tell stories differently, through immersive journalism and AR, although this is still at an early stage in the journalistic field.
- Evaluating audiences. Changes in editorial criteria and in the way news is produced (“gatekeeping” and “newsmaking”), including audience knowledge evaluation.
- Manipulation of information. The increasing ease of manipulation is distorting information. Be aware of the manipulation of reality, that is, of sophisticated disinformation, by means of deep fakes, for example, and the professionalism of propaganda (Sofia Branco). The production of increasingly realistic deep fakes requires new verification strategies (Alejandra Figueira).
- Threats to press freedom. Vigilance in relation to the subordination of ethical principles to the wishes of companies, limitations and threats to press freedom, judicial harassment and surveillance of journalists (Sofia Branco).
- Labour hybridisation. Newsrooms welcome professionals with multidisciplinary profiles: developers, engineers, designers, data-scientists, programmers, video editors, etc.
- Teleworking, with mixed models that promote work-life balance and increase the separation of newsrooms and collaborative work (Sofia Branco).
- Disintermediation with sources. Mediation between sources and journalists has changed due to direct communication between them and citizens, and journalists fear that, as a result, there is a lack of scrutiny of materials and a drop in the quality of information. Journalists are left without space to perform their role of asking questions (Sofia Branco). Primary sources, by talking to the public directly, make journalism less relevant (Joaquim Fidalgo).
- Problems with audience reception. Journalists reveal concerns about the algorithmization of information, the polarisation and standardisation of opinion, the decline in critical thinking and the lack of pluralism and diversity. “Information reaches audiences selected by the algorithms of search engines and social networks, which are designed to reinforce existing beliefs” (Alexandra Figueira). There is a confrontation between algorithmic and editorial structures as algorithms pose a serious threat to journalistic content.

- Multiple financing models. Some media will continue to rely on advertising, but the trend is to use different sources of revenue, which complement one another and help to consolidate the business model. Each media outlet will have to find its own model. (Joaquín Fidalgo).

Challenges

- Demonstrate that journalism does what others do not (the dissemination of information by direct sources, through a "tweet," for example) with regard to mediation between sources and the public (Joaquín Fidalgo).
- Encourage communication with audiences as this is the key to regaining trust. "The public has no contact with the media, and this is very serious and has side effects, such as a lack of trust. Knowledge of audiences will have overwhelming effects on journalistic cultures, starting with the criteria of newsworthiness," explains Luis Cucarella, adding that this knowledge of audiences must be based on the construction of communities.
- Create strategies to connect with young people. "The loss of the young audience forces us to rethink our approach" (Luís Cucarella).
- Investing in journalism on a daily basis, and doing constructive journalism, connected to the community comes into play here. (Luís Cucarella)
- Abandon trench journalism, locked up in its castle. All citizens can practise collaborative journalism based on energising communities (Joaquín Fidalgo).
- Counteracting the lack of credibility and trust in journalism expressed by many citizens.
- Media literacy. Prepare citizens for dealing with the media and reinforce their critical capacity. "If distribution platforms continue to maintain their weight in news consumption, disinformation would get worse, if not compensated by a redoubled effort in media literacy" (...) "Literacy will be crucial for audiences to verify the degree of credibility of the information they receive; and the literacy of journalists and the information producers themselves will also be crucial" (Alexandra Figueira).

Opportunities

- Citizens can collaborate with journalists, not by following the citizen journalism model, but by participating in production (Joaquim Fidalgo).
- Invest in listening to the public and building communities to attract young people.
- Media literacy will not only allow us to combat disinformation, but also the shortcomings of to be combated, but also the shortcomings of journalism as it stands today (Luís Cucarella). Literacy is a way to bring citizens closer to journalism.

Conclusions

Journalistic culture will be marked by changes in working methods due to automation, whether in the selection of information through available data, or in production itself, using AI tools. There is also concern about the rise in disinformation and loss of trust, which can be mitigated by a new approach to the relationship with audiences and with the segmentation of users, incentivising journalistic collaboration and participation.

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3.15. Audiences

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Media consumption, whether news, entertainment or social, increasingly multi-channel, multi-device, and multi-platform, through highly personalised and individualised media navigation systems (Newman et al., 2022; Cardoso et al., 2022), which translates into the urgent need to develop cross-media consumption and habit measurement systems.

The success of brands and media players necessarily depends on their ability to effectively navigate an economic and media system to the extent that power in the contemporary ecosystem emanates from consumer attention (Nixon, 2020). The development of digital environments around an attention economy and the concept of the audience as a commodity, has led to a strong imbalance in the power relations between media brands and indexing and measurement platforms, to the extent that monetisation models based on advertising revenue from news organisations have been severely compromised (Ramírez, 2021).

Audience measurement is fundamental to determining the future of the media ecosystem and defining what kind of approaches and business models will prevail.

Trends and innovations

- Institutionalisation of data-driven approaches. Like other dimensions and axes of change in the media sector, the audience domain will drive a migration towards data-driven action plans, both in terms of cross-media aggregated measurement structures, and in terms of the professional reconfiguration of organisations and brands, with the emergence of new operational roles (e.g. analysts, programmers, etc.) and decision-making roles (managers trained to turn data into strategy). We will see journalists working side by side with technology professionals and with greater professional and skills diversification of the operational aspects of media brands.

- Technology as a key part in the operational structure of the sector. More than a trend, the increasing integration of technology in the day-to-day operations of organisations is in itself a consolidated operational structure. The need to abandon traditional forms of audience measurement and migrate towards cross-media approaches means that technology will play a central role in the future of the media business. In this sense, audience measurement is just one of spheres in which this evolution will occur: it will also be applied to the work of newsrooms, to the tools that

professionals employ in their work and the production of content within the channels in which brands operate.

- Integration of business models. The growing institutionalisation of a media system based on an attention economy will imply a more organic integration of business models and monetisation channels. In a context where business models based on advertising in traditional channels do not allow brands to survive, in the future, the success of organisations will depend on the creation of multi-channel monetisation systems, the complementarity between subscriptions, digital and traditional advertising and also retail.

- Ubiquity. Audience measurement will move towards permanent ubiquity, that is, the strategic vision of brands will increasingly be determined by recognition of consumer trends and not linear numbers. Organisation will mobilise their resources to interpret the interplay between different data sources and materialise product and business strategies that respond to the needs of brands and consumers.

- Reconfiguration of power in the media market. The migration to cross-media audience measurement models is underway, but it will be slow for traditional media. As a consequence, significant frictions are emerging in the operations not only of brands and the media, but also of advertisers and platforms. This uncertainty is closely linked to the power relations between the different players, especially in the digital domain. At a time when brands and advertisers are still grappling with the disruption caused by the large digital platforms, relevant players are emerging that are centring their business models around AI and the potential of this technology.

- Disinformation. Migrating to cross-media operating models will allow brands to produce more relevant and effective content for consumers and, consequently, create new channels to establish a trusted relationship with audiences. This is key to creating value, especially for journalistic brands, and can be used to mitigate the phenomena of disinformation, bringing consumers closer to safe, editorialised, and trusted environments.

Challenges

- Atomisation of audiences. The subsistence of the migration to cross-media measurement and business models is related to the increasing atomisation of audiences. The attention of consumers is divided between different types of content, media, platforms and areas of influence. In recent years, the information business has been severely disrupted by the closed models of the big platforms in their spheres of influence. This poses a substantial challenge for traditional brands, and their future success when it comes to mitigating, recognising and analysing audience disaggregation also depends on economic and legislative efforts to balance power in digital environments (Ricardo Vaca).

- Disruption caused by artificial intelligence. AI will be disruptive, and its impact cannot yet be measured. It will affect the whole value chain: the media industry, research, advertising and all the other players. New legislative, fiscal, economic and regulatory issues will also arise.

- Technological limits to the measurement of cross-media consumption. The industry still relies on the measurement of isolated channels (television, radio, press audiences), but this structure ignores the rest of consumption, and the times

consumers spend on social networks, streaming, etc. In this sense, it has been very difficult to find a measurement structure for digital as a whole (António Salvador).

- Doubts about the future of advertising. Advertisers are reluctant to invest in digital until digital measurement models are reliable or more developed and until they can optimise audience measurement for better and more effective conversion into advertising. "How can we improve cross-media measurement? How can we measure everything with the same metric and make everything comparable? The problem with measurement is that it then does not become comparable" (Cláudia Marques).

- The dangers of the transition period to cross-media models. The digital business models of news brands do not allow for sustainability and are highly dependent on traditional business models. This transition period will entail a reconfiguration of the market that could lead to a loss of media plurality and to a concentration of power in a small number of players. Digitalisation challenges the cost structures of newsrooms and traditional operating models. Human resources will need to be restructured in media brands.

Opportunities

- The future is digital. There is no doubt that the future of the media lies in the continuous and permanent digitisation of processes. Digitisation is therefore a natural evolution of the sector, and the pandemic has accelerated this process by 5 to 10 years. The dynamic of permanent connection with audiences, always online, is a potential that can be exploited by brands. In this sense, the importance of audiovisuals and their growing preponderance in media diets should be highlighted. "The 21st century is the audiovisual century: everything is audiovisual and the audiovisual medium is the one that has transformed the most in recent years" (Ricardo Vaca).

- Disinformation. The challenge for brands is the sustainability of the business articulated with the quality of content and the trust of audiences, through communities linked to the value proposition: "As the media becomes more demanding with the quality of their content, and establish greater engagement with their users, without relying on indiscriminate audiences, it will be a formula to gain credibility" (Pepe Cerezo).

- Professional reconfiguration. The emergence of new roles will diversify newsrooms and corporate structures, articulating the different strategic parts of organisations.

Conclusion

Audience size will largely determine the media industry in 2025-2030, as it is an aspect seminally related to the sustainability of media business models. To a greater or lesser extent, the ability to measure, understand and operationalise audience data in a cross-media format in the context of an attention economy will determine the success of brands in the near future.

In any case, a greater ability to read the market may result in the production of better content, more in line with what consumers want, helping to establish a relationship of trust with brands and, consequently, to mitigate disinformation. There will be substantial changes in the level of professional diversity in organisations, with the entry of more technology staff, but this change will be gradual and, due to the demand for transformation, it is likely that some organisations will not have the resources necessary to make this change operational, with fewer brands and a greater concentration of power in a smaller number of players. Other aspects, such as artificial intelligence as it relates to reading audience trends, will bring disruption before it is clearly understood what benefits it will bring to the media business.

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3.16. Social Media

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Trends in the consumption of, and access to, information have changed. The last edition of Digital News Report (Reuters, 2022) reveals that, while access via apps and websites is declining year on year, consumption through social networks does not stop growing. Their ubiquity and convenience, coupled with the information habits of a generation of social natives who are beginning to reach adulthood (GWI, 2023), make them a strategic area for any communication project. However, the dependence on platforms, continuous changes in algorithms and the constant emergence of new agents generate a complex and demanding communication environment.

Trends and innovations

- *Leadership of video-led platforms.* Reports in recent years show an unstoppable growth of social networks based on audiovisual content (We are social, IAB Spain). Experts are confident that the trend will continue in the short-medium term.
- *Predominance of quick, informative vertical videos.* This is a trend that began with the emergence of TikTok and is being consolidated thanks to the development of new functionalities such as Instagram *reels* or YouTube *shorts* (Marcos Gómez Piñeiro).
- *Implementation of artificial intelligence*. The use of artificial intelligence will bring certain advantages, such as faster content creation, greater personalisation of information and cost savings, but it will also entail numerous ethical and professional challenges that the media and the platforms themselves will have to face.
- *A commitment to "real" communication*. There is a trend towards naturalness that will be reinforced in the coming years (Alberto Pachano). Users are beginning to show an inclination towards content of a relaxed and spontaneous nature, whether informative, personal or for entertainment. However, experts warn that this naturalness is not always real: "A recent study shows that, in the United States, nearly 70% of users prepare in advance the moment they are going to show on platforms such as BeReal" (Alberto Pachano). We run the risk, therefore, of falling into a "prepared reality."
- *A rise in emotional communication.* Content that appeals to users' emotions, whether positive or negative, has proven to achieve great results on most platforms. In the coming years, emotional communication is expected to gain ground with more human and relatable approaches (Marcos Gómez Piñeiro).

- *New functionalities for community management*. Constant changes in the algorithms that regulate the operation of platforms have made clear the importance of having a participative and committed community. In the coming years, it is expected that new functionalities will be developed and improved to manage communities and bring content producers and their audiences closer together.

Challenges

- *Emergence of new platforms*. The creation of new social networks, especially when they fill a niche or cover an unexplored need, substantially modifies interests and consumption patterns. “We have seen this recently with BeReal. We have gone from very carefully crafted content and with lots of filters, such as that found on Instagram, to much more improvised content” (Silvia Martínez). This trend change is especially noticeable among younger audiences, who find it very easy to migrate between platforms.

- *Viral and polarised communication.* Disinformation strategies and polarised discourses, due to their strong emotional component, tend to get good results in terms of dissemination and engagement, sometimes going viral. Algorithms designed to keep users on the platforms for as long as possible, often give greater visibility to this type of content, spreading disinformation and creating a polarised environment (Silvia Martínez).

- *Increasingly blurred boundaries*. Continuous experimentation and hybridisation of formats makes it difficult to differentiate between opinion, advertising and information. This, together with the democratisation of content production, means that genres are often confused. “It is important for users to understand that opinion, information and a user with access to the internet are not the same thing” (Alberto Pachano). “They must know who is behind the information, that it is a professional who has checked the news, that they can use the image because they have the rights and that it is not simply a pastiche that has not been checked” (Guacimara Castrillo).

- *Regularisation*. Although progress has been made in terms of regularisation, especially with regard to violence, hate speech or xenophobia, the platforms still have a long way to go (Alberto Pachano). Experts highlight two key elements to bear in mind: the limits of freedom of expression and the difficulties involved in creating regulations applicable to all the countries where they operate. “We are talking about platforms that have a global presence. We have to think about the extent to which regulations can be applied to regulate who creates the content, how it is created and where it is distributed” (Silvia Martínez).

Opportunities

- *New monetisation pathways.* Social media have proven to be the perfect showcase for reaching new audiences and working on brand image (Guacimara Castrillo). However, many media outlets are still looking for a formula to achieve economic profitability. Branded content, consolidated in other formats such as the web and print, is beginning to gain popularity among the social media strategies of national and international newspapers.

- *Emergence of new players*. Unlike most social networks, which prioritise content published by a user’s contacts, the TikTok algorithm offers an experience based on

the user's behaviour and interests. As a result, any video, regardless of the number of followers its creator may have, can be displayed on the homepage. This is an innovative strategy that other similar platforms are beginning to emulate. "We are entering a very chaotic dynamic in which anyone can stand out. And, conversely, people who are very consolidated can disappear or lose importance" (Marcos Gómez Piñeiro). This opens a window for new players and underlines the importance of personal brands.

- *Easier detection and moderation of communities.* Beyond content creation, artificial intelligence can help simplify some processes, such as the detection of content that breaches copyright (Guacimara Castrillo), the moderation of communities or the detection of inappropriate behaviour, such as hate speech or disinformation strategies (Marcos Gómez Piñeiro).

- *A second chance for reposted content.* Despite the growth of short-form video platforms, there are sectors of society that are not used to the frenetic consumption offered by most social networks (Guacimara Castrillo). A commitment to content that is more real and relaxed may be an opportunity to attract a more adult audience and breathe new life into traditional platforms such as Twitter or Facebook.

Conclusion

Social networks are a complex and dynamic environment that makes it difficult to make long-term predictions. However, experts agree that some trends that have gained popularity in recent years will continue. Video content will continue to be the main protagonist and short, explanatory formats will occupy a privileged place on most platforms. In the face of this type of fast and fleeting consumption, it is expected that content of a relaxed and spontaneous nature will appear, allowing information to be shown in a more relatable and transparent way. In addition, in order to establish a deeper and more significant connection with audiences, improvements will be made in community management functionalities and emotional communication will gain ground with more human and relatable approaches.

The main challenge revolves around the adaptability of the media industry and its ability to cope with a social landscape based on the polarisation and viralisation of content. In this sense, the proliferation of disinformation strategies, aggravated by the emergence of artificial intelligence, calls for joint action to guarantee the veracity and integrity of the information published on social networks.

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3.17. Sustainability

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The IPCC synthesis report[2] (2023) describes as “unequivocal” the fact that human activities, through greenhouse gas emissions, have caused the current global warming. Since 1970, the temperature has risen faster than in any other 50-year period over the past 2,000 years. 79% of emissions come from the energy, industry, transport sectors and buildings combined. The report points to a number of obstacles: scarce resources, lack of private sector and public engagement, insufficient mobilisation of funds (including for research), a limited understanding of the climate and a lack of political and social commitment.

The “Emissions Gap 2022” report, prepared by the UN Environment Programme (UNEP), predicts that current policies will lead to 2.8º C warming by the end of the century and warns that slowing the temperature rise as much as possible implies "a large-scale and systematic transformation". It says there is “immense potential” to reduce emissions beyond the current mitigation pledges. Despite the accumulated scientific evidence and the fact that there is greater awareness (European Commission, 2021), there are those who deny warming or downplay its importance. However, heat waves, heavy rains, droughts and fires are becoming increasingly common. Rising temperatures and climate change favour the emergence of diseases and vulnerable countries are those that suffer most.

Trends and innovations

- Since the first IPCC report in 1990, four stages can be distinguished in the approach to climate change: the first focused on environmental issues that impacted society for the first time; then the problem was related to economic aspects; the third step was health: the pandemic showed that the alteration of ecosystems can favour the emergence of diseases. “And I would add a fourth element, energy: we have realised that we have to change our model” (Jorge Olcina).
- Climate modelling makes it possible to predict each regional scenario. The latest projections suggest that, in 2023, we will already reach the one and a half degrees Celsius that the World Meteorological Organisation warns of by the end of the century. The Mediterranean area is a “hot spot,” since it is one of the areas

[2] The IPCC is the United Nations’ body that brings together hundreds of specialists and serves to assess scientific knowledge on climate change published worldwide.

displaying the most striking evidence. It is important to get this message across and to associate it with extreme phenomena (Jorge Olcina).

- In Spain, denialism has not taken hold as it has in other regions. Although awareness-raising work started late compared to other countries, the leading role has been assumed with a single voice both from research organisations and the Spanish Meteorological Agency itself, which has helped to curb denialism (Jorge Olcina).
- It is a progressive process in the medium and long term, as saturating the public with catastrophic images and headlines may cause confusion and lead to disinterest. It is advisable to focus on the causes (Jorge Olcina).
- The perspective from which we work on energy issues is that of life-cycle analysis: the study of the environmental impact of products and projects affects the entire process, from the extraction of raw materials to their manufacture and distribution. Also, the environmental impact of the end of the life of the product (L. A. del Portillo).
- The European Union is one of the institutions that is most intensively developing policies to combat climate change. Decarbonisation is a global objective and of interest to all sectors: engineers, architects, journalists, lawyers, politicians, etc. Tackling CO2 emissions is a global issue (L. A. del Portillo).

Challenges

- The voice of science is crucial in the face of denialism. Scientific data may prevent certain currents from gaining traction, but the social scenario is complex and globalised, as all issues are interconnected, and this influences how science is worked on and perceived. There is a risk of thinking that science and technology will provide a solution to everything, making the problem less serious. In this context, polarisation spreads everywhere, also to issues related to sustainability (Ana Muñoz).
- The complexity of today's society leads individuals to need to rely on groups of experts to understand the issues that affect them. The feeling of being dependent on expert knowledge, coupled with a polarised and infoxicated climate in which mistrust is rampant, can lead to a sense of loss of control and anxiety (Ana Muñoz). In matters related to the environment and sustainability, this translates into eco-anxiety.
- The big emitters of greenhouse gases pose the greatest challenge: The United States, China, Russia and Brazil refuse to join this global march of sustainability and reduction (Jorge Olcina).
- The sun is the great unknown. How its dynamics will evolve is an added stress because, in addition to warming caused by gases, we may experience greater solar radiation. NASA is working hard on these issues, which constitute one of the axes of the future (Jorge Olcina).
- Urban mobility poses a challenge because all cities are planning low-emission zones and, therefore, adequate information must be provided (Asunción M. Agulló). Europe is also committed to phasing out combustion engines by 2030 and there are questions about how electrical energy supplies for these vehicles will be managed (L. A. del Portillo).
- The energy consumption of supercomputers, although not among the priority issues, is relevant. The key is to try to improve energy efficiency, as is the case in other

systems. The Internet of Things also plays an important role: machine learning and big data extract large volumes of data and predict the behaviour of systems to build models that enable more efficient energy use (L. A. del Portillo).

- There is room for improvement in energy communication, both in the media and in politics and companies, some of which are involved in greenwashing. Beyond virality, energy poverty should be a priority (Asunción Agulló, L.A. del Portillo).

Opportunities

- Awareness of environmental protection is worked on from an early age, through educational strategies and plans aligned with the Sustainable Development Goals. The next step is to approach social networks and digital communication, which is the way to reach young audiences (Asunción Agulló).
- It is important to design a climate change plan that includes key moments, rigorous content, avoids alarmism, relates events and offers greater context. “We are facing a process that will be with us for the rest of this century at least and the message must be modulated so that it is delivered in the best way” (Jorge Olcina).
- Address environmental issues with a multidisciplinary approach through, for example, networking conferences involving collaboration between agents from different areas: administrations, companies, technological and research centres, society and the media (Asunción Agulló).
- Sustainability is presented as a positive competitive advantage for companies. There is also scope for further research into self-consumption forms of energy and unbundled energy systems, which constitute the future of smart cities (L.A. del Portillo).
- People have the ability to influence the process that affects them through their behaviour. To do so, it is necessary to explain the issues, provide the right tools and content and generate media literacy programmes that enable them to do their own fact-checking (Ana Muñoz).

Conclusion

Climate change is a present and future threat to human wellbeing and the health of ecosystems. Although the problem is getting worse, there is a window of opportunity for a habitable and sustainable future. What we do during this decade will be decisive.

Technology and cooperation are key to accelerating climate action. Adaptation measures have made some progress, but they are not enough. The energy sector is key, and targets cannot be set in the short terms and in isolation. Resources must be allocated to plan in a multi-sectoral, inclusive and flexible way for the long term.

Communication about environmental issues must avoid scaremongering and focus on causes and contexts. The aim is to ensure that society is well informed and, despite infoxication and possible boredom, with a special focus on the younger generations.

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4. Assessment by media managers in Spain and Portugal of trends in the media ecosystem (2025-2030)

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4.1. Methodology

The methodology used in this part of the research is based on a closed-response online survey in which 101 Spanish and Portuguese media managers took part.

4.1.1. Sample

In the case of Spain, to obtain the responses, a list of previous contacts, recommendations from other contacts, media directories, corporate email addresses, etc. was compiled, and they were invited to take part in the questionnaire via email. Two general mailings were sent: a first batch between 20th June and 1st July and a second between 11th September and 2nd October 2023, with the questionnaire being resent to managers who did not reply to the first mailing.

In the case of Portugal, a list of the main national, regional, and local media companies was compiled, and invitations were sent to previously obtained email contacts. In addition, to ensure regional representation, the Portuguese Press Association (API) was contacted, and they sent the survey to API members nationwide. A first batch of invitations to take part was sent between 29th June and 5th July. In a second phase, between 18-20th September, a new request to take part was sent to the same contacts in order to ensure as many responses as possible. Together with the request to take part, a note was added asking them to promote the project. The sampling methodology is, therefore, mixed, combining direct contact with a snowball sampling method.

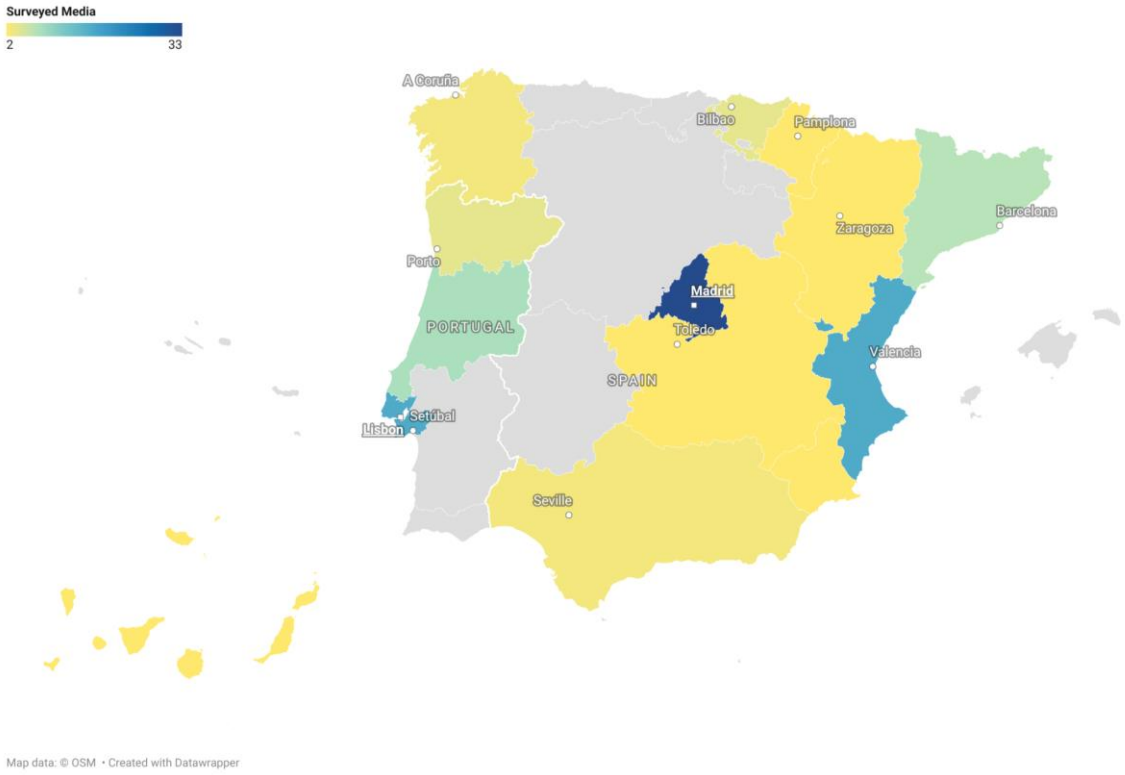
Table 1: *Socio-demographic data of the sample. Source: authors.*

N		Percent		N	Percent
Sex			*Age*		
Male	63	62.38%	18-35	17	16.83%
Female	38	37.62%	36-45	29	28.71%
Country			46-55	36	35.64%
Spain	71	70.30%	55-65	14	13.86%
Portugal	30	29.70%	65+	4	3.96%
Total	101	100%	Total	101	100%

The necessary condition for answering the questionnaire was to be a “manager” of a media company. The definition of a manager includes all those people with positions of responsibility within a media company, whether in the editorial or finance, management or technological departments. Thus, the respondents included directors and deputy directors, section heads, territorial delegates, editors, editors-in-chief, and technology marketing or business managers.

After the deadline for starting the analysis of the form, two additional responses were received, which were not considered in the results, but which were added to the list and map of the media companies that took part in the survey.

Figure 1: *Location of the media companies surveyed. Source: authors (https://datawrapper.dwcdn.net/WsAOu/3/)*



The sample contains a wide variety of media companies that use different formats and initiatives: press, radio, television, digital natives, podcasts, and newsletters. It also combines general and specialised media (sports, cultural, data journalism, fact-checkers…), segmenting between organisations that operate at national, regional, and local level, both public and private (see Annex 1).

We tried to make the sample as representative as possible of all Iberian territories. Most of the media companies are concentrated in the Community of Madrid, which includes both the Spanish capital and the towns within its metropolitan area. In Portugal, the same is true: the highest concentration is in the capital, Lisbon, and its surrounding area.

In the rest of Spain, the distribution between cities is much more equitable, except in the case of Catalonia, where media companies are concentrated in Barcelona. In the survey, although media companies from at least eleven autonomous communities are included, we find that Catalonia and Andalusia, the second and third communities with the most media companies according to the IBERIFIER map, are under-represented, while the Valencian Community (fourth in terms of the number of media companies) is in second place. This is due to the fact that, because of the way the contacts were made for the Spanish team, it was easier to access media companies from the Valencian Community, who are closer to the researchers, than from other parts of the country.

In Portugal, the scope of the survey reflects the geographical and demographic dynamics related to the territorial distribution of the population and media companies. There is a higher concentration on the coast, especially in the urban areas of Lisbon and Oporto, and a significant proportion of media companies in the centre, especially in Coimbra. The geographical distribution of the responses to the survey therefore follows the patterns recorded on the media map prepared by the IBERIFIER consortium in 2022 and 2023.

Table 2: *Regional location of the media companies surveyed.* Source: prepared by the authors.

Region	N	Region	N
Andalusia	3	Lisbon (M.A.)	17
Aragón	1	Centre	8
Canary Islands	1	Madeira	1
Castilla-La Mancha	1	North	4
Catalonia	7		
Community of Madrid	33		
Valencian Community	17		
Basque Country	4		
Galicia	3		
Navarra	2		
Murcia Region	1		
Total Spain	73	Total Portugal	30

4.1.2. Questionnaire

The questionnaire consisted of 32 questions divided into 16 topic categories related to the most important trend areas previously identified: Audiences; Big Data; Scientific Communication; Journalistic Culture; Companies; Training; Formats and New Narratives; Artificial Intelligence; Marketing and Advertising; Business; Work Organisation; Virtual Reality, Augmented Reality and the Metaverse; Social Networks; Sustainability; Fact-Checking and Disinformation; and Web3, Blockchain, NFTs and Cryptocurrencies. The full questions can be found in the Results section.

In the week prior to the first mailing, a pre-test was performed and answered by four managers close to the researchers, who provided comments on the form of the questionnaire, the clarity of the questions and the time it took them. Their feedback was taken into account in the development of the final form. In addition, the text of the questionnaire was shared with three journalists and people with editorial experience to clarify some aspects of the wording and comprehension.

The respondents answered the questions on a Likert scale consisting of five items ordered from lowest to highest according to the degree of agreement with each sentence proposed (from strongly disagree to strongly agree). In addition, a “don’t know/no answer” option was added. All the affirmations were drafted by the researchers responsible for the chapters on each trend, as reflected in the preceding section of this report. Once they had been shared, some of the affirmations were reworded for clarity and to maintain a similar style throughout

the form. Once the affirmations had been corrected, the research team produced the same form in each of the languages using the Google Forms tool.

4.1.3. Responses

101 valid responses were obtained, 71 from Spanish managers and 30 from Portugal, thus achieving the initial objective and trying to maintain a similar proportion to the number of media companies and population in both countries[3]. The responses were recorded on a spreadsheet for processing. On the one hand, variables related to the socio-demographic data of the participants were extracted: gender and age of the respondent, country and region of the media company where he/she works. The data from the survey were then ranked to facilitate their analysis as a whole. Each Likert scale rating was assigned a numerical value (-2, -1, 0, 1 and 2) according to the degree of agreement with each affirmation. A list was thus drawn up whereby affirmations with a higher value are those with a greater degree of affinity. In addition to this analysis, the gender and country data were cross-referenced with the responses.

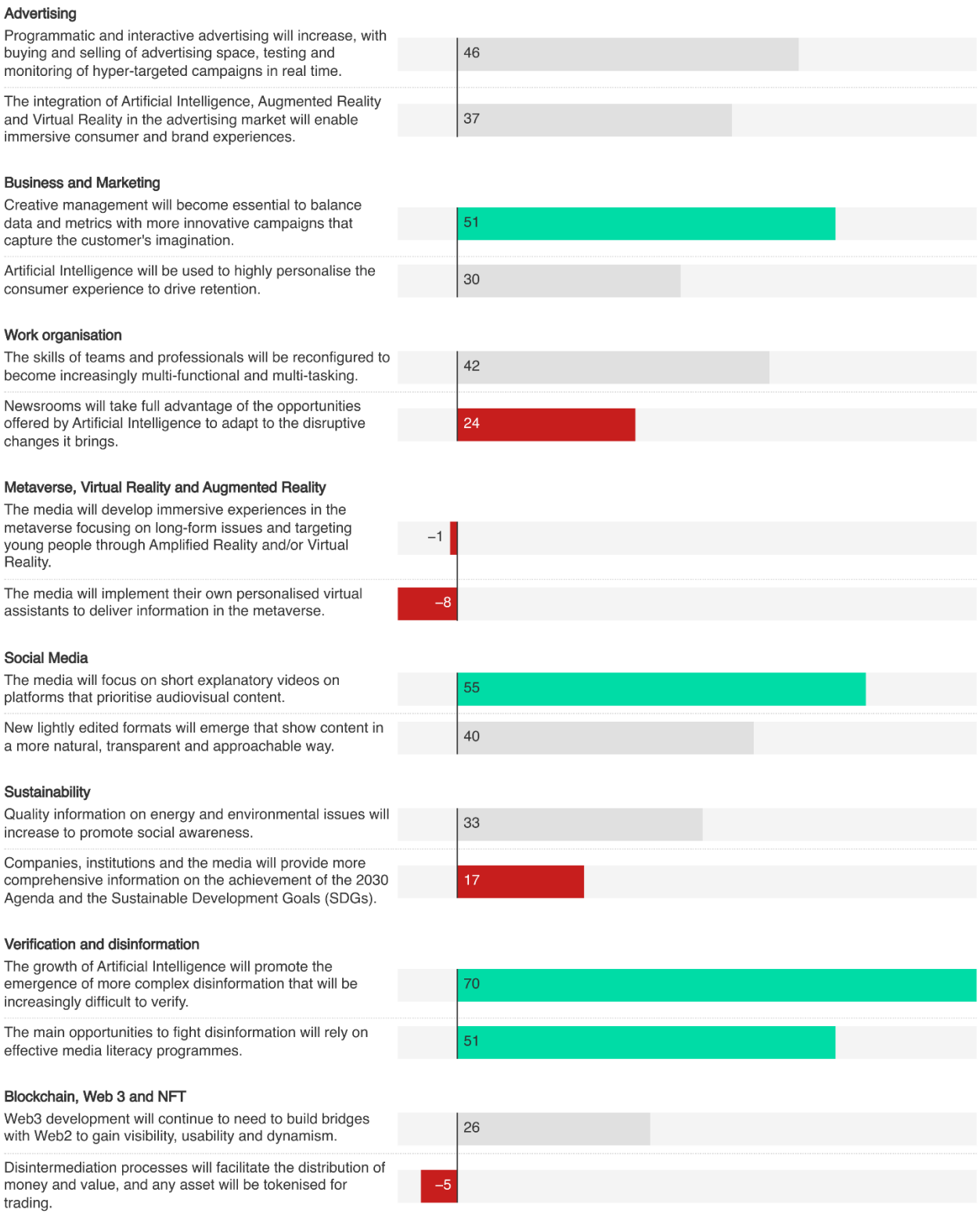
4.1.4. Limitations

There are several limitations to this survey. Firstly, it is an exploratory study, so the results are not conclusive. The research was conducted in only two countries so the results cannot be generalised to the rest. The sample is limited in terms of the number of responses and its representativeness is conditioned by access to managers partly through professional networks. The trends in each area are represented by only two affirmations to make the survey feasible, which leaves out many possibilities. It is important to underline that the data collected within the framework of this survey should be read and interpreted in a complementary way to the results obtained through the qualitative expert interviews analysed in the first part of this report.

[3] Source: https://map.iberifier.eu/. According to the IBERIFIER team's study on digital and hybrid media in the Iberian Peninsula, in February 2023, 5,177 media companies were identified, of which 1,229 are Portuguese (24%) and 3,948 Spanish (76%). In this study, we try to replicate these proportions, with 70% of the media companies located in Spain and 30% in Portugal.

4.2. General graphic

***Figure 2**: Answers to the survey on media trends. Source: prepared by the authors.*


Advertising
Programmatic and interactive advertising will increase, with buying and selling of advertising space, testing and monitoring of hyper-targeted campaigns in real time.
46
The integration of Artificial Intelligence, Augmented Reality and Virtual Reality in the advertising market will enable immersive consumer and brand experiences.
37
Business and Marketing
Creative management will become essential to balance data and metrics with more innovative campaigns that capture the customer's imagination.
51
Artificial Intelligence will be used to highly personalise the consumer experience to drive retention.
30
Work organisation
The skills of teams and professionals will be reconfigured to become increasingly multi-functional and multi-tasking.
42
Newsrooms will take full advantage of the opportunities offered by Artificial Intelligence to adapt to the disruptive changes it brings.
24
Metaverse, Virtual Reality and Augmented Reality
The media will develop immersive experiences in the metaverse focusing on long-form issues and targeting young people through Amplified Reality and/or Virtual Reality.
−1
The media will implement their own personalised virtual assistants to deliver information in the metaverse.
−8
Social Media
The media will focus on short explanatory videos on platforms that prioritise audiovisual content.
55
New lightly edited formats will emerge that show content in a more natural, transparent and approachable way.
40
Sustainability
Quality information on energy and environmental issues will increase to promote social awareness.
33
Companies, institutions and the media will provide more comprehensive information on the achievement of the 2030 Agenda and the Sustainable Development Goals (SDGs).
17
Verification and disinformation
The growth of Artificial Intelligence will promote the emergence of more complex disinformation that will be increasingly difficult to verify.
70
The main opportunities to fight disinformation will rely on effective media literacy programmes.
51
Blockchain, Web 3 and NFT
Web3 development will continue to need to build bridges with Web2 to gain visibility, usability and dynamism.
26
Disintermediation processes will facilitate the distribution of money and value, and any asset will be tokenised for trading.
−5
Creado con Datawrapper

The analysis of the affirmations on the trends by managers in Spain and Portugal allows the following observations to be made:

- Most of the trends (29 out of 32, 90.1%) derived from the qualitative report based on the expert interviews yield a positive result, that is, they agree with the opinion of the managers consulted. This shows the concordance between the predictions recorded beforehand and the views of the managers.
- 2 of the 3 affirmations with a discordant opinion refer to the Metaverse, Virtual Reality and Augmented trend. This highlights current hesitation in developing innovations based on these technologies, such as the implementation of virtual assistants and immersive experiences.
- The third affirmation with the highest percentage of discordant responses is the one dealing with Web3, Blockchain, NFTs and cryptocurrencies, which refers to the advantages of disintermediation and tokenisation for obtaining economic benefits.
- The affirmation that gets the most favourable consensus is the one linking the areas of Fact-Checking and Disinformation with Artificial Intelligence, specifically, about the rise of fake content as a result of using this technology. The other affirmation regarding the Fact-Checking trend, relating to the need to raise media literacy as a way of countering disinformation, is among the six affirmations with the highest consensus.
- Among the affirmations with the highest consensus, two related to the training of professionals both in the creation of simple, highly impactful audiovisual content (Training) and in the acquisition of technical knowledge about AI (Artificial Intelligence) stand out.
- Despite widespread agreement with the statements related to the use of AI, there is little consensus that new organisations can adapt and make the most of these tools (Work Organisation).
- Among the most highly rated affirmations is the one referring to the use of short, explanatory videos in social networks that prioritise audiovisual content (Social Networks). As seen in other affirmations, there is a broad consensus on the growing use of simple, visual formats by the media, suitable for social networks.
- The managers surveyed agree that creative management will be essential to attract customers (Business) in marketing campaigns that will need to integrate both data analysis and advanced metrics as well as innovative and imaginative pieces that connect with users.
- The low assessment of affirmations regarding Sustainability is evidence of a lack of consensus among managers on trends related to environmental reporting, energy issues and, above all, Agenda 2030 and the Sustainable Development Goals.

4.3. Artificial Intelligence

***Tables 3 and 4**: Responses on Artificial Intelligence trends. Affirmation 1: "AI will be applied mainly to the intermediate processes of journalistic production (transcription, categorisation, summary…) and not so much to the final generation of content." Affirmation 2: "Journalists will need more technical and specific training to understand and collaborate with multidisciplinary teams."*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree	1	2%	4	14%	5	7%	1	5%			1	3%	6	6%
Disagree	6	14%	4	14%	10	14%	3	14%			3	10%	13	13%
Neither agree nor disagree	4	10%	7	24%	11	15%	2	10%	4	44%	6	20%	17	17%
Agree	21	50%	13	45%	34	48%	13	62%	5	56%	18	60%	52	51%
Strongly agree	10	24%	1	3%	11	15%	1	5%			1	3%	12	12%
No Response							1	5%			1	3%	1	1%
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree			1	3%	1	1%							1	1%
Neither agree nor disagree	1	2%	3	10%	4	6%	2	10%			2	7%	6	6%
Agree	21	50%	15	52%	36	51%	12	57%	5	56%	17	57%	53	52%
Strongly agree	20	48%	10	34%	30	42%	7	33%	4	44%	11	37%	41	41%
No Response														
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

The majority of respondents subscribe in some way to the two affirmations concerning AI, albeit with important nuances. The managers seem to be clearer about the importance of training than about the stages of the journalistic process that will be affected by this technology.

The responses to the first question, regarding the greater influence of this technology on the intermediate stages of the profession, reflect the diversity of opinions. Half of the respondents (51%) "agree," but only 12% "strongly agree" and 19% disagree to varying degrees. The cross-tabulation with the geographical variable does not show major differences, although, in Portugal, the degree of consensus is slightly higher. There does seem to be a greater influence when taking into account the gender of the respondents: none of the 9 women surveyed in this country disagrees. In Spain, on the one hand, men seem to be more convinced: almost three out of four (74%) agree to some extent.

The second affirmation on the need for training of professionals, on the other hand, is among those with the most consensus of the whole questionnaire. 93% of respondents agree to a greater or lesser degree. This figure hardly varies when taking into account the gender and location of the respondents, although male managers in Spain "strongly agree" most frequently: 48%.

4.4. Big Data

***Tables 5 and 6**: Responses on Big Data trends. Affirmation 1: "Institutions, companies and the media will collaborate more closely together to exploit large databases." Affirmation 2: "Data journalism will be integrated into the newsroom as a whole." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree	1	2%	3	10%	4	6%							4	4%
Disagree	6	14%	5	17%	11	15%	2	10%	1	11%	3	10%	14	14%
Neither agree nor disagree	10	24%	7	24%	17	24%	1	5%	2	22%	3	10%	20	20%
Agree	18	43%	10	34%	28	39%	11	55%	3	33%	14	48%	42	42%
Strongly agree	7	17%	3	10%	10	14%	5	25%	2	22%	7	24%	17	17%
No Response			1	3%	1	1%	1	5%	1	11%	2	7%	3	3%
Total	42	100%	29	100%	71	100%	20	100%	9	100%	29	100%	100	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	2	5%	3	11%	5	7%							5	5%
Neither agree nor disagree	10	24%	6	21%	16	23%	2	10%	2	22%	4	13%	20	20%
Agree	19	46%	10	36%	29	42%	8	38%	6	67%	14	47%	43	43%
Strongly agree	10	24%	9	32%	19	28%	11	52%	1	11%	12	40%	31	31%
No Response														
Total	41	100%	28	100%	69	100%	21	100%	9	100%	30	100%	99	100%

In the Big Data trend, there is broad agreement among respondents on both trends. The second affirmation, on the integration of data journalism into the newsroom as a whole, had a much more positive response, with nearly 75% of managers agreeing or strongly agreeing with it. The affirmation on collaboration between companies, institutions and the media to exploit databases is viewed negatively by 20% of managers, although the majority agree.

Both affirmations coincide in that 20% neither agree nor disagree and the most repeated degree of agreement is "Agree" with a similar percentage of 42-43%.

The most significant difference between men and women is that the degree of agreement on the first affirmation is lower among female managers. The cross-country comparison shows that Portuguese managers have a more positive view of the two affirmations on Big Data than the Spanish. In both cases, the degree of consensus is almost 20% higher among Portuguese professionals than the Spanish.

4.5. Blockchain, Web 3 and NFT

***Tables 7 and 8**: Responses on Blockchain, Web 3 and NFT. Affirmation 1: "Disintermediation processes will facilitate the transfer of money and value, and any asset can be tokenised for trading." Affirmation 2: "The development of Web3 will still need to build bridges with Web2 to gain visibility, usability and dynamism." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree	1	2%	1	3%	2	3%	2	10%			2	7%	4	4%
Disagree	15	36%	8	28%	23	32%	1	5%	1	11%	2	7%	25	25%
Neither agree nor disagree	16	38%	8	28%	24	34%	7	33%	3	33%	10	33%	34	34%
Agree	6	14%	3	10%	9	13%	6	29%	3	33%	9	30%	18	18%
Strongly agree	1	2%	1	3%	2	3%							2	2%
No Response	3	7%	8	28%	11	15%	5	24%	2	22%	7	23%	18	18%
Total	42	100%	29	100%	71	100%	20	100%	9	100%	29	100%	100%	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	1	2%	1	4%	2	3%	1	5%			1	3%	3	3%
Neither agree nor disagree	13	31%	8	29%	21	30%	6	29%	2	22%	8	27%	29	29%
Agree	17	40%	9	32%	26	37%	10	48%	3	33%	13	43%	39	39%
Strongly agree	5	12%	4	14%	9	13%							9	9%
No Response	6	14%	6	21%	12	17%	4	19%	4	44%	8	27%	20	20%
Total	42	100%	28	100%	70	100%	21	100%	9	100%	30	100%	100%	100%

The two trends on Blockchain, Web 3 and NFT also receive little support among the managers surveyed. But here the nuances are important. The second affirmation, regarding the need to build bridges between Web3 and Web2, scores at the average of the survey as a whole. The first, however, regarding how these technologies can facilitate the transfer of money and value, scores the most negative rating in the questionnaire. Only 1 out of 4 managers agrees, and only 2 out 100 respondents in total strongly agree.

On this question, the highest degree of scepticism is found among female managers in Spain: only 13% agree to some degree. The highest percentage of "strongly disagree" responses, however, is found among managers in Portugal.

Regarding the second affirmation, variations depend more on geography than gender. None of the respondents from Portugal strongly agreed with the need for these technologies to interact with the old ones. As many as 44% of women from this country state that they are not clear about their response, which indicates the degree of complexity of, or lack of knowledge about, this phenomenon.

4.6. Fact-Checking and Disinformation

***Tables 9 and 10**: Responses on Fact-Checking and Disinformation trends. Affirmation 1: "growth of Artificial Intelligence will promote the emergence of more complex disinformation, which is increasingly difficult to verify." Affirmation 2: "The main opportunities to combat disinformation will lie in the development of effective media literacy programmes." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree			3	10%	3	4%							3	3%
Neither agree nor disagree	2	5%	1	3%	3	4%							3	3%
Agree	19	45%	8	28%	27	38%	12	57%	4	44%	16	53%	43	43%
Strongly agree	21	50%	17	59%	38	54%	9	43%	5	56%	14	47%	52	51%
No Response														
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	1	2%	1	3%	2	3%	2	10%			2	7%	4	4%
Neither agree nor disagree	9	21%	4	14%	13	18%	3	14%			3	10%	16	16%
Agree	22	52%	10	34%	32	45%	11	52%	8	89%	19	63%	51	50%
Strongly agree	10	24%	14	48%	24	34%	4	19%	1	11%	5	17%	29	29%
No Response							1	5%			1	3%	1	1%
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

The Fact-Checking and Disinformation trend records positive responses for both affirmations, but with different levels of intensity: 94% of all respondents agree or strongly agree with affirmation 1 (the development of AI will lead to the emergence of more complex and difficult to verify disinformation) and 79% agree or strongly agree that media literacy is the main tool to combat disinformation. However, the proportion of respondents who strongly agree with affirmation 1 is higher than for affirmation 2 (51% versus 29%). With regard to the Iberian Peninsula as a whole, there is greater consensus on the threat of AI in terms of disinformation than on the opportunities afforded by media literacy to combat it.

By country, the values of agreement are practically the same for affirmation 2, but in the case of the threats posed by AI, there is total agreement in Portugal, versus 92% in Spain. In Spain, agreement with affirmation 1 is also higher among men (95%) than women (87%) and, regarding affirmation 2, there is more agreement among women than men: in the case of Portugal, 100% of women versus 71% of men and, in the case of Spain, 82% of women versus 76% of men.

4.7. Companies

***Tables 11 and 12**: Responses on Company trends. Affirmation 1: "Company strategies will become predictive by cross-referencing data on consumer behaviour and trends." Affirmation 2: "There will be an increasing combination of technological knowledge and human mediation, essential to adapt products, formats and languages to the market." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	1	2%	2	7%	3	4%	2	10%			2	7%	5	5%
Neither agree nor disagree	9	22%	5	17%	14	20%	4	19%	1	11%	5	17%	19	19%
Agree	17	41%	15	52%	32	46%	10	48%	7	78%	17	57%	49	49%
Strongly agree	11	27%	7	24%	18	26%	4	19%	1	11%	5	17%	23	23%
No Response	3	7%			3	4%	1	5%			1	3%	4	4%
Total	41	100%	29	100%	70	100%	21	100%	9	100%	30	100%	100	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree			1	3%	1	1%	2	10%			2	7%	3	3%
Neither agree nor disagree	6	15%	8	28%	14	20%	4	20%			4	14%	18	18%
Agree	23	56%	11	38%	34	49%	13	65%	9	100%	22	76%	56	57%
Strongly agree	12	29%	9	31%	21	30%							21	21%
No Response							1	5%			1	3%	1	1%
Total	41	100%	29	100%	70	100%	20	100%	9	100%	29	100%	99	100%

In the Company trend, 72% of respondents agree or strongly agree (49% and 23% respectively) with affirmation 1, which states that companies will adopt predictive approaches, cross-referencing data on consumer behaviour with changing trends. Regarding affirmation 2, and the adaptation of products and formats, combining technology, creativity and human mediation, 78% of respondents agree (57% agree and 21% strongly agree).

The differences in the responses are not significant if the two countries are considered in isolation, but they are in terms of gender. In both Spain and Portugal, more women than men agree with affirmation 1: 76% versus 68% in Spain and 89% versus 67% in Portugal (respondents who agree or strongly agree).

However, in the case of affirmation 2, different situations are identified: in Spain, men tend to agree more than women (85% versus 69%) and in Portugal, the situation is reversed, with the entire female sub-sample agreeing with the affirmation compared to only 65% of men.

4.8. Business and marketing

***Tables 13 and 14**: Responses on Business trends. Affirmation 1: "Artificial Intelligence will serve to personalise the consumer experience with great precision and thus favour retention." Affirmation 2: "Creative management will become essential to balance data and metrics with more innovative campaigns that catch customers' attention." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree			2	7%	2	3%							2	2%
Disagree	7	17%	2	7%	9	13%	3	15%			3	10%	12	12%
Neither agree nor disagree	8	19%	8	28%	16	23%	5	25%	2	22%	7	24%	23	23%
Agree	18	43%	10	34%	28	39%	9	45%	7	78%	16	55%	44	44%
Strongly agree	9	21%	5	17%	14	20%	2	10%			2	7%	16	16%
No Response			2	7%	2	3%	1	5%			1	3%	3	3%
Total	42	100%	29	100%	71	100%	20	100%	9	100%	29	100%	100	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree														
Neither agree nor disagree	5	12%	6	21%	11	15%	3	14%			3	10%	14	14%
Agree	24	57%	13	45%	37	52%	15	71%	8	89%	23	77%	60	59%
Strongly agree	12	29%	7	24%	19	27%	3	14%	1	11%	4	13%	23	23%
No Response	1	2%	3	10%	4	6%							4	4%
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

The Business trends yield positive but asymmetric responses: the first affirmation achieves a lower-than-average degree of consensus while the second affirmation is among the most subscribed to.

60% of managers agree that AI will serve to personalise consumers' experience and there is virtually no difference between the two countries; except that Spaniards agree to a greater degree.

The second affirmation is among the most highly rated in the survey and is supported by more than 80% of respondents, among whom, 23% strongly agree. None of the responses is negative and only 14% are neutral. The level of agreement in Portugal (90%) is several points higher than the level in Spain, thanks in part to the fact that all the women from the Portuguese sample agreed.

4.9. New Narratives and Formats

***Tables 15 and 16**: Responses on New narratives and formats. Affirmation 1: "Virtual environments will be created that offer information in a more immersive and experiential way." Affirmation 2: "The personalisation of content adjusted to each user will grow through the use of algorithms." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree									1	11%	1	3%	1	1%
Disagree	5	12%	4	14%	9	13%	1	5%			1	3%	10	10%
Neither agree nor disagree	13	32%	4	14%	17	24%	6	29%	4	44%	10	33%	27	27%
Agree	12	29%	17	59%	29	41%	10	48%	3	33%	13	43%	42	42%
Strongly agree	10	24%	3	10%	13	19%	3	14%	1	11%	4	13%	17	17%
No Response	1	2%	1	3%	2	3%	1	5%			1	3%	3	3%
Total	41	100%	29	100%	70	100%	21	100%	9	100%	30	100%	100	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree			1	3%	1	1%							1	1%
Disagree	1	2%	1	3%	2	3%							2	2%
Neither agree nor disagree	10	24%	6	21%	16	23%	5	24%	2	22%	7	23%	23	23%
Agree	15	36%	12	41%	27	38%	11	52%	6	67%	17	57%	44	44%
Strongly agree	16	38%	8	28%	24	34%	4	19%	1	11%	5	17%	29	29%
No Response			1	3%	1	1%	1	5%			1	3%	2	2%
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

In the trend on New Formats and Narratives, there is broad consensus among the respondents regarding the two dimensions analysed: the emergence of immersive information experiences and the growing personalisation of content using algorithms. In the case of the possible immersion of news experiences, 59% of respondents agree or strongly agree with the affirmation. Regarding greater personalisation of content, the percentage of positive responses reaches 73%.

It is worth noting, however, the significant proportion of respondents who take a neutral stance on the affirmations: more than a quarter of the sample (27%) neither agree nor disagree with the affirmation on the emergence of more immersive information experiences, and 23%, also around a quarter, take a neutral stance on the growth of experience personalisation through algorithms.

When comparing the two countries, the levels of agreement are similar, 72% in Spain and 74% in Portugal (agree and strongly agree). Regarding gender, there are no significant differences, except in the case of women interviewed in the Portuguese sample, where the percentage of those who agree reaches 78%.

4.10. Training

***Tables 17 and 18**: Responses on Training trends. Affirmation 1: "Skills that can make AI a key element in the daily work of journalists, encouraging its integration into training plans and clearly identifying the potential of the new tools." Affirmation 2: "Learning how to produce journalism through image and video-based formats that are easy to perceive and more impactful." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	2	5%	3	10%	5	7%							5	5%
Neither agree nor disagree	9	23%	8	28%	17	25%	3	14%	2	22%	5	17%	22	22%
Agree	21	53%	16	55%	37	54%	16	76%	6	67%	22	73%	59	60%
Strongly agree	8	20%	1	3%	9	13%	2	10%			2	7%	11	11%
No Response			1	3%	1	1%			1	11%	1	3%	2	2%
Total	40	100%	29	100%	69	100%	21	100%	9	100%	30	100%	99	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	1	2%	1	3%	2	3%	1	5%			1	3%	3	3%
Neither agree nor disagree	6	15%	4	14%	10	14%	2	10%	1	11%	3	10%	13	13%
Agree	17	41%	16	55%	33	47%	14	67%	8	89%	22	73%	55	55%
Strongly agree	17	41%	8	28%	25	36%	4	19%			4	13%	29	29%
No Response														
Total	41	100%	29	100%	70	100%	21	100%	9	100%	30	100%	100	100%

In the trend on Training, affirmation 2 regarding the need to produce journalism in audiovisual formats that are easier to understand and more impactful, is agreed on by 84% of total respondents. Regarding the integration of AI into the daily work of journalists to develop new tools (affirmation 1), agreement levels reach 71% in both countries. It is worth noting, however, that in the case of affirmation 1, the proportion of respondents who strongly agree is significantly lower than for affirmation 2: 11% versus 29%.

When comparing the two countries, a greater similarity in the responses is evident in affirmation 2: 83% of Spanish respondents and 86% of the Portuguese answer in the affirmative. In the case of affirmation 1, there are substantially lower proportions of agreement in Spain than in Portugal, 67% versus 80%, respectively. With regard to gender, there are similar levels of agreement between men and women in both Portugal and Spain, while for affirmation 1, there are higher levels of agreement among men than women, a trend that is identified in both countries.

4.11. Advertising

***Tables 19 and 20**: Responses on Advertising trends. Affirmation 1: "Programmatic and interactive advertising will increase, with the sale and purchase of advertising space, testing and monitoring of hyper-segmented campaigns in real time." Affirmation 2: "The integration of Artificial Intelligence, Augmented Reality and Virtual Reality in the advertising market will enable immersive consumer experiences and relationships with brands to be offered." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	2	5%	1	3%	3	4%	1	5%			1	3%	4	4%
Neither agree nor disagree	6	15%	2	7%	8	11%	2	10%	1	11%	3	10%	11	11%
Agree	20	49%	13	45%	33	47%	11	52%	5	56%	16	53%	49	49%
Strongly agree	12	29%	6	21%	18	26%	4	19%	3	33%	7	23%	25	25%
No Response	1	2%	7	24%	8	11%	3	14%			3	10%	11	11%
Total	41	100%	29	100%	70	100%	21	100%	9	100%	30	100%	100	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree									1	11%	1	3%	1	1%
Disagree	3	7%	1	4%	4	6%	2	10%			2	7%	6	6%
Neither agree nor disagree	10	24%	3	11%	13	19%	5	24%	3	33%	8	27%	21	21%
Agree	18	44%	16	57%	34	49%	12	57%	1	11%	13	43%	47	47%
Strongly agree	10	24%	4	14%	14	20%	1	5%	3	33%	4	13%	18	18%
No Response			4	14%	4	6%	1	5%	1	11%	2	7%	6	6%
Total	41	100%	28	100%	69	100%	21	100%	9	100%	30	100%	99	100%

In the Advertising trend, two different dimensions have been explored: the growth of hyper-segmentation and personalisation of advertising (affirmation 1) and the growing role of technology (AI, AR and VR) in the creation of immersive experiences (affirmation 2). 74% of respondents agree with affirmation 1. In the case of affirmation 2, there is less agreement (65%). The proportion of respondents who agree is substantially higher than those who totally agree (49% versus 25% for affirmation 1 and 47% versus 18% for affirmation 2). Analysing the responses by country, the Portuguese and Spanish interviewees respond in a similar direction and proportion in the case of affirmation 1 (76% and 73% respectively), but in the case of affirmation 2, there are more positive responses in Spain (69% versus 65% in Portugal).

Discrepant response patterns are also evident in terms of gender. In affirmation 1, men in Spain tend to agree more than women (78% versus 66%, respectively). In Portugal, the opposite is true: 89% of women agree, compared to 71% of men. In affirmation 2, there is a balanced scenario in terms of gender in Spain, but, in Portugal, there is greater agreement among the male respondents than among the women (62% versus 44%).

4.12. Metaverse, Virtual Reality and Augmented Reality

***Tables 21 and 22**: Responses on Metaverse, VR, AR trends. Affirmation 1: "The media will implement their own personalised virtual assistants to provide information in the metaverse." Affirmation 2: "Media will develop immersive experiences in the metaverse focusing on long-range issues and targeting young people through Amplified Reality and/or Virtual Reality." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree	4	10%	6	21%	10	14%			1	11%	1	3%	11	11%
Disagree	14	33%	5	17%	19	27%	2	10%			2	7%	21	21%
Neither agree nor disagree	15	36%	11	38%	26	37%	8	40%	4	44%	12	41%	38	38%
Agree	8	19%	5	17%	13	18%	8	40%	4	44%	12	41%	25	25%
Strongly agree	1	2%			1	1%							1	1%
No Response			2	7%	2	3%	2	10%			2	7%	4	4%
Total	42	100%	29	100%	71	100%	20	100%	9	100%	29	100%	100	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree	4	10%	4	14%	8	11%			1	11%	1	3%	9	9%
Disagree	9	22%	8	28%	17	24%	3	15%	1	11%	4	14%	21	21%
Neither agree nor disagree	14	34%	10	34%	24	34%	4	20%	4	44%	8	28%	32	32%
Agree	12	29%	4	14%	16	23%	10	50%	3	33%	13	45%	29	29%
Strongly agree	2	5%	1	3%	3	4%	1	5%			1	3%	4	4%
No Response			2	7%	2	3%	2	10%			2	7%	4	4%
Total	42	100%	29	100%	71	100%	20	100%	9	100%	29	100%	100	100%

Managers' responses on Metaverse, Virtual Reality and Augmented Reality reflect a wide degree of scepticism and disparity of opinion on how the media will develop these trends. On both statements, concerning the integration of the media into the Metaverse, 38% and 32% respectively of respondents acknowledged neither agreeing or disagreeing.

On the first question, Portuguese managers were more likely to agree than Spanish managers. 41% of Portuguese media managers believe that these companies will implement virtual assistants in the metaverse, compared to only 18% of Spaniards, who disagreed with the statement in 41% of cases. There are no notable differences between genders on this question, except that female managers in both countries are more likely to strongly disagree.

Regarding the second statement, on the development of immersive experiences within the metaverse, specifically targeted at young people and designed for long-term engagement, the degree of agreement of Portuguese managers is again higher (48%) than that of their Spanish counterparts (27%). In both countries, moreover, men agree much more with the question than women. In Spain, 34% of men agree with the question compared to 17% of women. In Portugal, the percentage is 55% versus 33%.

4.13. Scientific Communication

***Tables 23 and 24**: Responses on Scientific Communication trends. Affirmation 1: "A team specialised in dissemination, health and/or the environment will be established in each newsroom." Affirmation 2: "The media will embrace new, more informative formats to reach audiences distant from scientific matters." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree	2	5%			2	3%	1	5%			1	3%	3	3%
Disagree	9	22%	4	14%	13	19%	3	14%	1	11%	4	13%	17	17%
Neither agree nor disagree	9	22%	3	10%	12	17%	6	29%	3	33%	9	30%	21	21%
Agree	13	32%	14	48%	27	39%	7	33%	4	44%	11	37%	38	38%
Strongly agree	8	20%	8	28%	16	23%	2	10%			2	7%	18	18%
No Response							2	10%	1	11%	3	10%	3	3%
Total	41	100%	29	100%	70	100%	21	100%	9	100%	30	100%	100	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree	1	2%			1	1%	1	5%			1	3%	2	2%
Disagree	2	5%	4	14%	6	8%	1	5%	1	11%	2	7%	8	8%
Neither agree nor disagree	13	31%	4	14%	17	24%	6	29%			6	20%	23	23%
Agree	21	50%	15	52%	36	51%	11	52%	8	89%	19	63%	55	54%
Strongly agree	5	12%	6	21%	11	15%	1	5%			1	3%	12	12%
No Response							1	5%			1	3%	1	1%
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

The affirmations regarding Scientific Communication have a positive degree of agreement, although both are below the average for the rest of the trends. Managers, for their part, subscribe to the second affirmation to a greater extent than to the first.

56% of respondents believe that a team specialised in scientific issues will be established in each newsroom versus 20% who do not see it this way. The second affirmation, referring to the media embracing informative formats to reach new audiences, is supported by two thirds of respondents, with only 10% negative responses.

Many Spanish women (one in four) agree or strongly agree with the first affirmation while the number of Portuguese men and women barely reaches or exceeds 50%.

In the second affirmation, the agreement data between countries only differs in degree (more Spaniards "strongly agree" but more Portuguese "agree") and the only noteworthy data is the large percentage of female Portuguese managers who subscribe to the affirmation: almost 90%.

4.14. Work Organisation

***Tables 25 and 26**: Responses on Work Organisation trends. Affirmation 1: "The skills of teams and professionals will be reconfigured so that they become increasingly multi-functional and operate in a multi-tasking regime." Affirmation 2: "Newsrooms will make the most of the opportunities offered by Artificial Intelligence to adapt to the disruptive changes it brings." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree									1	11%	1	3%	1	1%
Disagree	3	8%	4	14%	7	10%	2	10%			2	7%	9	9%
Neither agree nor disagree	5	13%	2	7%	7	10%	3	14%			3	10%	10	10%
Agree	22	55%	17	59%	39	57%	14	67%	5	56%	19	63%	58	59%
Strongly agree	10	25%	5	17%	15	22%	2	10%	2	22%	4	13%	19	19%
No Response			1	3%	1	1%			1	11%	1	3%	2	2%
Total	40	100%	29	100%	69	100%	21	100%	9	100%	30	100%	99	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree	1	2%	2	7%	3	4%							3	3%
Disagree	4	10%	8	28%	12	17%	2	10%			2	7%	14	14%
Neither agree nor disagree	12	29%	5	17%	17	24%	5	24%	4	44%	9	30%	26	26%
Agree	20	48%	12	41%	32	45%	13	62%	3	33%	16	53%	48	48%
Strongly agree	5	12%	2	7%	7	10%	1	5%	2	22%	3	10%	10	10%
No Response														
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

With respect to Work Organisation, the general levels of agreement are different across the Iberian Peninsula. In affirmation 1 (reconfiguration of team skills with a view to multi-functionality and multi-tasking), 78% of respondents agree with this evolution. In affirmation 2 (use of AI to mitigate disruption caused by this technology), there are lower levels of agreement in the two countries: 58% of respondents agree and a quarter of the Iberian Peninsula sample is undecided (26%).

Comparing the two countries, in the case of affirmation 1, there are higher levels of agreement in Spain, with a difference of three percentage points between the two countries (79% of Spanish respondents versus 76% Portuguese). In the case of affirmation 2, agreement is higher among the Portuguese respondents (63%) than among those interviewed in Spain (55%) (a difference of 8 points).

In terms of gender, in the case of affirmation 1, there are similar patterns between men and women in both countries. In the case of affirmation 2, there are substantially higher percentages of affirmative responses among men than women: 60% versus 48% in Spain and 67% versus 55% in Portugal.

4.15. Journalistic Culture

***Tables 27 and 28**: Responses on Journalistic Culture trends. Affirmation 1: "Journalists will take advantage of the potential of AI to create more creative work environments." Affirmation 2: "The media will increasingly embrace journalistic value to differentiate themselves from hybrid content and disinformation." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	4	10%	5	17%	9	13%	2	10%	1	11%	3	10%	12	12%
Neither agree nor disagree	5	12%	6	21%	11	15%	5	24%	1	11%	6	20%	17	17%
Agree	27	64%	15	52%	42	59%	14	67%	7	78%	21	70%	63	62%
Strongly agree	6	14%	1	3%	7	10%							7	7%
No Response			2	7%	2	3%							2	2%
Total	42	100%	29	100%	71	100%	21	100%	9	100%	30	100%	101	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree							1	5%			1	3%	1	1%
Disagree	4	10%	6	21%	10	14%	1	5%			1	3%	11	11%
Neither agree nor disagree	6	15%	5	17%	11	16%	4	19%			4	13%	15	15%
Agree	10	24%	12	41%	22	31%	10	48%	6	67%	16	53%	38	38%
Strongly agree	21	51%	6	21%	27	39%	5	24%	3	33%	8	27%	35	35%
No Response														
Total	41	100%	29	100%	70	100%	21	100%	9	100%	30	100%	100	100%

The majority of respondents agree with the journalistic culture trends. 69% agree or strongly agree with the potential of AI to raise creativity and 73% respond positively to embracing journalistic values to improve information. In affirmation 1, there is a higher concentration of "agree" than "strongly agree" responses (62% and 7%) and in affirmation 2, the responses are divided between the two (38% and 35%, respectively).

When comparing both countries, the percentages are similar for affirmation 1: 69% affirmative responses in Spain and 70% in Portugal. In affirmation 2, agreement is higher in Portugal than in Spain: 80% versus 70%.

In terms of gender, and by country, there are significant differences between the subsamples. In affirmation 1, in Spain, there are higher percentages of agreement among men (78%) than among women (55%). In Portugal, in women the pattern is reversed, with more women agreeing than (78% versus 67%). In affirmation 2, there are different situations: in Spain, men to agree more (75% versus 62%) and in Portugal the responses are reversed: 100% of women versus 72% of men.

4.16. Audiences

***Tables 29 and 30**: Responses on Audience trends. Affirmation 1: "Growing investment in cross-media measurement systems will enable us to understand consumption habits across different devices, formats, media, etc." Affirmation 2: "New technical and data processing skills will be promoted, at analysis and management level, integrating big data into organisational strategy." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree							1	5%	1	11%	2	7%	2	2%
Neither agree nor disagree	7	18%	5	17%	12	17%	1	5%	2	22%	3	10%	15	15%
Agree	21	53%	13	45%	34	49%	15	71%	6	67%	21	70%	55	56%
Strongly agree	11	28%	10	34%	21	30%	3	14%			3	10%	24	24%
No Response	1	3%	1	3%	2	3%	1	5%			1	3%	3	3%
Total	40	100%	29	100%	69	100%	21	100%	9	100%	30	100%	99	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	1	3%			1	1%	2	10%			2	7%	3	3%
Neither agree nor disagree	9	23%	6	21%	15	22%	3	15%			3	10%	18	19%
Agree	21	53%	14	50%	35	51%	10	50%	8	89%	18	62%	53	55%
Strongly agree	8	20%	6	21%	14	21%	4	20%			4	14%	18	19%
No Response	1	3%	2	7%	3	4%	1	5%	1	11%	2	7%	5	5%
Total	40	100%	28	100%	68	100%	20	100%	9	100%	29	100%	97	100%

In terms of the Audience trend, high levels of agreement were recorded for both affirmations. In affirmation 1, regarding the growth of cross-media measurement systems that include consumption habits in different formats, media and devices, 80% of total respondents respond positively, with similar percentages for Spain (79%) and Portugal (80%). In affirmation 2, regarding the implementation of analytical and Big Data solutions in organisation, agreement is lower, at around 74% (72% in Spain and 76% in Portugal).

By gender, in Spain there is a similarity between men and women in terms of levels of agreement, but in Portugal there is a significant variation: 85% of men agree with affirmation 1 compared to 67% of women, and affirmation 2 is correct for 89% of women and 70% of men.

4.17. Social Media

***Tables 31 and 32**: Responses on Social Media trends. Affirmation 1: "The media will embrace short, explanatory videos on platforms that prioritise audiovisual content." Affirmation 2: "New formats with little editing will emerge that show content in a more natural, transparent and relatable way." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	1	3%	1	3%	2	3%			1	11%	1	3%	3	3%
Neither agree nor disagree	8	20%	1	3%	9	13%	4	19%			4	13%	13	13%
Agree	14	35%	14	48%	28	41%	15	71%	6	67%	21	70%	49	49%
Strongly agree	17	43%	13	45%	30	43%	2	10%	2	22%	4	13%	34	34%
No Response														
Total	40	100%	29	100%	69	100%	21	100%	9	100%	30	100%	99	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	4	10%	3	10%	7	10%	2	10%			2	7%	9	9%
Neither agree nor disagree	8	20%	7	24%	15	21%	9	43%	1	11%	10	33%	25	25%
Agree	14	34%	11	38%	25	36%	8	38%	7	78%	15	50%	40	40%
Strongly agree	15	37%	8	28%	23	33%	2	10%	1	11%	3	10%	26	26%
No Response														
Total	41	100%	29	100%	70	100%	21	100%	9	100%	30	100%	100	100%

In the Social Media trend, a commitment to audiovisual content, especially short videos, on social networks (affirmation 1) and the promotion of more original, unedited formats, which present content in a more relatable and transparent way (affirmation 2) are assessed. With regard to the Iberian Peninsula as a whole, the first affirmation receives more support than the second, with 83% agreeing or strongly agreeing versus 66%. Analysing the two countries separately, there is more agreement with affirmation 1 (84% in Spain and 83% in Portugal) than with affirmation 2 (69% and 60% respectively).

When the responses are cross-referenced by gender, different patterns emerge that are worth noting. In the case of affirmation 1, regarding a growing commitment to online audiovisual formats, there is greater agreement among women than men, both in Spain (93% versus 78%) and Portugal (89% versus 81%). Portugal and Spain only differ in the context of the analysis of this trend, in the patterns of response to affirmation 2 in relation to gender: in the case of Spain, there is greater agreement among men than women (71% versus 66%, a difference of 5 percentage points) and in the case of Portugal, women tend to be more significantly in agreement with the idea of the emergence of new, more natural and less edited formats (89% versus 48%).

4.18. Sustainability

***Tables 33 and 34**: Responses on Sustainability trends. Affirmation 1: "Companies, institutions and media companies will provide more comprehensive information on the achievement of Agenda 2030 and the Sustainable Development Goals (SDGs)." Affirmation 2: "Quality information on energy and environmental issues will be increased to promote social awareness." Source: prepared by the authors.*

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree														
Disagree	6	15%	9	31%	15	21%	4	19%	1	11%	5	17%	20	20%
Neither agree nor disagree	12	29%	9	31%	21	30%	5	24%	2	22%	7	23%	28	28%
Agree	18	44%	5	17%	23	33%	11	52%	4	44%	15	50%	38	38%
Strongly agree	4	10%	4	14%	8	11%	1	5%			1	3%	9	9%
No Response	1	2%	2	7%	3	4%			2	22%	2	7%	5	5%
Total	41	100%	29	100%	70	100%	21	100%	9	100%	30	100%	100	100%

	Spain						Portugal						Iberian Peninsula	
	Male		Female		Total		Male		Female		Total			
Strongly disagree							1	5%			1	4%	1	1%
Disagree	5	12%	4	14%	9	13%	2	10%			2	7%	11	11%
Neither agree nor disagree	6	15%	8	28%	14	20%	3	15%	1	13%	4	14%	18	18%
Agree	24	59%	12	41%	36	51%	12	60%	6	75%	18	64%	54	55%
Strongly agree	6	15%	5	17%	11	16%	2	10%			2	7%	13	13%
No Response									1	13%	1	4%	1	1%
Total	41	100%	29	100%	70	100%	20	100%	8	100%	28	100%	98	100%

The responses to the Sustainability trends reflect important differences. 55% of respondents agree with affirmation 2 regarding a rise in information on energy and the environment. However, this consensus drops considerably when coverage of Agenda 2030 and the SDGs is specified.

On this first question, 4 out of 5 managers from Portugal agree. In Spain, women are more sceptical: as many as 14% disagree with this affirmation regarding thematic coverage of climate change.

In the second affirmation, female Spanish managers are again the most sceptical. Almost a third of respondents (31%) disagree with the idea that businesses and the media should provide comprehensive coverage of the aforementioned international social agendas. By contrast, more than half the male managers in Portugal agree (52%) or strongly agree (5%).

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5. Conclusions of the report

1. The popularisation of AI-based tools among citizenship will encourage the emergence of more complex disinformation that is increasingly difficult to verify, according to 94% of respondents. The response to this challenge lies in the development of effective training programmes, which, on the one hand, enable journalists and fact-checkers to acquire more specific knowledge to understand the technology and, on the other hand, promote media literacy.

2. In the journalistic sphere, AI will be mainly applied to the intermediate processes of news production (transcription, categorisation, summaries…), but not so much to the final generation of content. Training will tend towards the promotion of skills that will make AI a key element in the daily work of journalists, according to 73% of managers. Notwithstanding, 43% of the sample do not agree that newsrooms will be able to make the most of the opportunities offered by AI and adapt to disruptive changes.

3. AI and algorithms will enable highly personalised content and a consumer experience that will favour user retention. In addition, increasing investment in cross-media measurement systems will enable a better understanding of consumption habits across different devices, formats and media. For 72% of managers, business strategies will be predictive through the cross-referencing of data on consumer behaviour and trends.

4. Journalistic companies will increasingly combine technological know-how, creativity and human mediation, which will be essential to adapt products, formats and languages to the market. The skills of teams and professionals will be reconfigured to become increasingly multi-functional and operate in a multi-tasking regime. Data processing will be one of the main areas of knowledge in which new technological skills will be promoted, both in terms of analysis and management, with the aim of integrating Big Data into organisational strategy and reaching audiences more effectively, according to 72% of respondents.

5. Attracting and retaining audiences will depend, to a large extent, on the media making a strong commitment to journalistic values. According to 73% of the sample, professionals will place increasing importance on what separates journalism from other hybrid content and disinformation. Data journalism will be increasingly integrated into newsrooms in response to this need.

6. With regard to scientific communication, the majority believe that the media will embrace new, more popular science formats to reach audiences distant from scientific matters, and that quality information on energy issues and the environment will be increased in order to promote greater social awareness. Many newsrooms will create teams specialised in this area. Experts do not reach a consensus, however, on whether companies, institutions and the media will provide more comprehensive information on the achievement of Agenda 2030 and the Sustainable Development Goals (SDGs).

7. In the sphere of social media, 83% of respondents agree that journalistic outlets will embrace short, explanatory videos on platforms that prioritise audiovisual content. Furthermore, new formats with little editing will emerge that show content in a more natural, transparent and relatable way. It will therefore be

crucial for professionals to learn to produce journalism in image and video-based formats that are easy to perceive and impactful.

8. Virtual environments will be created that offer information in a more immersive and experiential way. One of the avenues is the exploitation of the metaverse, where media outlets will be able to develop their own personalised virtual assistants for reporting and immersive VR and AR experiences focused on long-form topics, aimed at young people. Among managers, opinions are mixed on whether these proposals will eventually spread across the industry: 33% agree or strongly agree compared to 30% who disagree or strongly disagree.

9. The development of Web3 will continue to build bridges with Web2 to gain visibility, usability, and dynamism in order to be used by the media. This technology is still alien to a significant proportion of the managers surveyed. In any case, the results reflect the experts' lack of trust in the disintermediation processes derived from Web3 being able to facilitate the transfer of money and value in the information sector.

10. Programmatic and interactive advertising will increase, with the sale and purchase of advertising space, testing and monitoring of hyper-segmented campaigns in real time. The integration of AI, VR and AR into the advertising market will enable immersive consumer and relationships with brands to be offered, according to 65% of managers.

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7. Annexes

Annex 1. List of interviewed experts.

Agulló, Asunción María - Professor of agricultural policy and social economy, Miguel Hernández University

Andrino, Borja - Data journalist, El País

Arcila, Carlos - Professor of communication, Universidad de Salamanca

Ataide, Edson - FCB Publicidade

Boluda, Joan - Online marketing consultant and head of Boluda.com

Branco, Sofia - Coordinator of training, Agência Lusa

Brandão, Pedro - Claritel Group Country Manager

Cabo, David - Head, Fundación Civio

Castrillo, Guacimara - Head of Social Media, El Mundo

Cerezo Gilarranz, Pepe - Director, Evoca Media

Chaparro, Laura - Head of newsroom, Science Media Center Spain

Chaparro, María Ángeles - Professor of journalism, Universidad Complutense

Corral, David - Head of innovation, Televisión Española

Cucarella, Lluís - Director, Next Idea Media

de Lacalle, Lourdes - Senior venture builder, Igeneris

del Portillo, Luis Alfonso - Head, Máster en Investigación en Eficiencia Energética y Sostenibilidad en Industria, Transporte, Edificación y Urbanismo, University of the Basque Country

del Val, Patricia M. - CEO, Futura Space

Erviti, Mari Carmen - Researcher, Science Communication, University of Navarre

Escudero, Jesús - Data scientist, CSIC

Esteves, Fernando - CEO, Polígrafo

Expert who requested anonymity - O.D.M.

Falcão, Manuel - Journalist, EGEAC - LISBOA

Fernández Beltrán, Francisco - Professor, Universidad Jaume I

Fidalgo, Joaquim - Professor, Department of Communication Science, Universidade do Minho

Figueira, Alexandra - Journalism professor, Universidade Lusófona do Porto

Gallar, Ángeles - Head, Scientific Culture Unit, Miguel Hernández University

García Alonso, Urbano - Director of Innovation and Digital, RTVE

Girão, Licínia - President, Comissão da Carteira Profissional de Jornalista

Gómez Piñeiro, Marcos - Head of Social Media Analysis, RTVE

Hernández, Sergio - Head, EFE Verifica

Hernanz, Miriam - Head of Audiovisual Formats, Prisa Media

Jiménez Cruz, Clara - CEO, Maldita

Lázaro, Elena - President, Asociación Española de Comunicación Científica

Leite, Nuno - Retune

Lizárraga, Beatriz - Head of digital projects, ABC

Llop, Pau - Digital Product & Project Manager, Prodigioso Volcán

Llorente, David - CEO, Narrativa

Lopes Cardoso, Fátima - Coordinator, Licenciatura em Jornalismo, Assistant Professor, Escola Superior de Comunicação Social, Instituto Politécnico de Lisboa

López Learte, Pablo - Head of Product Design, El Confidencial

Lozano, Pedro - CEO, Imascono

Marín, Pedro - Manager, Metaverse Continuum Business Group, Accenture

Marques, Cláudia - Commercial Lead - Media Measurement, GFK Group

Marqués, Joaquín - Researcher, EAE Business School

Martín-Borregón, Eduard - COO, Datasketch

Martínez Mahugo, Sergio - Manager of digital services, Mediterránea

Martínez, Fátima - Director, Social Media FM

Martínez, Silvia - Director, Máster Universitario Social Media: Gestión y Estrategia, Universitat Oberta de Catalunya

Merodio, Juan - Consultant

Midões, Miguel - Assistant Professor, Escola Superior de Educação do Instituto Superior de Educação do Instituto Politécnico de Viseu e Universidade de Coimbra

Molero, Íñigo - Advisor in communication and blockchain, EthicHub

Moreno, José - Researcher CIES- ISCTE, Trainer in Cenjor

Muñoz van den Eynde, Ana - Head, Unidad de Investigación en Ciencia, Tecnología y Sociedad, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)

Nesme, Yoann - PPL

Olcina, Jorge - Professor of climatology, University of Alicante, Evaluator of IV IPCC

Pachano, Alberto - Managing director, We are social (Spain)

Paniagua, Esther - Director, Center for the Governance of Change, Instituto de Empresa

Peña, César - Laboratorio de Innovación y Nuevas Narrativas, RTVE

Peña, Oscar - CIO, Wunderman Thompson Spain

Pinheiro, Luís - Head of products and projects, elDiario.es

Preukschat, Álex - GTM Product Strategy, Chainlink Labs

Quevedo, Luis - Director of strategic projects, Fecyt

Rodrigues, Nuno - Lupi

Rodríguez Parrondo, Jaime - Director, Comfix

Román, Miguel Ángel - Co-founder, Instituto de Inteligencia Artificial

Ruiz del Cerro, Adrián - CEO, Futura Space

Salvador, António - President Board of Directors, GFK Group

Sangiao, Sergio - Data journalist, Público

Santos, Luís António - Joint-director, Centro de Estudos de Comunicação e Sociedade, Universidade do Minho

Silva, Nelson - President, Comissão de Trabalhadores, RTP

Simões, Luís - President, Sindicato dos Jornalistas

Tomé, Ricardo Jorge - Head of digital, Media Capital

Torres da Silva, Marisa - Associate Professor, Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa

Torrijos, Carmen - Head of IA, Prodigioso Volcán

Vaca, Ricardo - CEO, Barlovento Comunicación

Ventura, Patricia - Universitat Autònoma de Barcelona

Vivas, Eli - Cofounder, StoryData

Annex 2. List of the Spanish media that have participated in the survey.

Media	Number of responses
3DVEGABAJA	1
A Punt Mèdia	1
ABC	1
África Mundi	1
Alicante Plaza	2
Antena 3	1
AQUÍ Medios de Comunicación	1
ARA	1
Aramultimedia	1
ATRESMEDIA	1
Cadena SER	1
Canal Sur	1
Civio	1
CMM (Radiotelevisión Pública de Castilla-La Mancha)	1
Consultora freelance	1
COPE Elche	1
Corporació Catalana de Mitjans Audiovisuals	1
DATADISTA	1
DIARIO Bahía de Cádiz	1
Diario Digital de Castellón S.L.	1
Economía Digital	1
EITB	1
El Confidencial	1
El Debate	2
El País	3
El Periódico	1
El Salto Diario	1
Europa Press	1
Expansión	1
Gigantes del Basket	1
Grupo Joly	1
Heraldo de Aragón	1
InfoLibre	1
Información	2
Kloshletter	1
La Marea	1

La Región	1
La Vanguardia	1
Las Provincias	1
La Sexta	2
Maldita.es	1
Marca	2
MUNDIARIO	1
Navarra Capital	1
Newtral	1
Onda Cero Radio Castellón	1
Onda Regional de Murcia	1
Pikara Magazine	1
Planeta Mauna Loa	1
PodiumPodcast	1
Prensa Ibérica	1
Radio Elche Cadena SER / Elche7 TV	1
Relevo	1
Revista 5W	1
Revista Nuestro Tiempo	1
RTVE	3
Science Media Centre	1
SINC	1
TeleElx	1
TELEVISIÓN COSTA BLANCA SL	1
TVPC (RTVC)	1
Valencia Plaza	1
Vocento	2
Total	73

Annex 3. List of the Portuguese media that have participated in the survey.

Media	Number of responses
Agência Lusa	1
Alto Minho	1
Aveiro Media Competence Center	1
Coimbra Coolectiva	2
Diário de Notícias da Madeira	1
Espiral do Tempo	1
Expresso e SIC	1
Fumaça	1
Gerador	1
Grupo Cofina	1
Grupo Impresa	4
Grupo Media Centro	1
Jornal A Verdade	1
Jornal de Leiria	1
Jornal de Negócios	1
Jornal local semanal	1
Jornal O Regional	1
Jornal Reconquista	2
Poligrafo	1
Publico	1
M80, Cidade FM e Smooth FM	1
RTP	1
Setenta e Quatro	1
Trevim	1
Visão	1
Total	30

Vacant page

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IBERIFIER – Iberia Media Research & Fact-Checking

IBERIFIER is a digital media observatory in Spain and Portugal funded by the European Commission, linked to the European Digital Media Observatory (EDMO). It is made up of thirteen universities, five fact-checking organizations and news agencies, and five multidisciplinary research centres.

Its main mission is to analyse the Iberian digital media ecosystem and tackle the problem of misinformation. To do this, it focuses its research on five lines of work:

1. Research on the characteristics and trends of the Iberian digital media ecosystem.

2. Development of computational technologies for the early detection of misinformation.

3. Fact-checking of misinformation in the Iberian territory.

4. Strategic reports on threats of disinformation, both for public knowledge and for the authorities of Spain and Portugal.

5. Promotion of media literacy initiatives, aimed at journalists and informants, young people, and society as a whole.

For more information look for the project website iberifier.eu and the Twitter account @iberifier.

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IBERIFIER
Iberian Media Research & Fact-Checking

www.iberifier.eu

Coordinator

Universidad de Navarra

Partners

ISCTE Instituto Universitário de Lisboa
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Universitat Politècnica de València
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Universidad de Granada
Politécnica Universidad Politécnica de Madrid
MALDITA.ES Periodismo para que no te la cuelen
efeverifica
verificat
LUSA Agência de Notícias de Portugal, S.A.
Polígrafo Em nome da verdade.
Real Instituto Elcano Royal Institute
Gobierno de España Ministerio de Ciencia e Innovación
FECYT Innovación
OberCom Investigação e Saber em Comunicação
Cenjor
Associação Literacia para os media e Jornalismo

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