

## Presentation

# The never-ending challenge: Exploring the renewed impact of digital technologies on journalism

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It's always the same story. While the journalism profession is finally learning how to harness digital and data technology, artificial intelligence (AI) has surged ahead, leaving journalism back at its starting point: needing to rethink, once again, how journalists can leverage disruptive technology like AI to ensure quality journalism without jeopardizing the social value and long-term sustainability of the news media.

Since the advent of online publishing in the 1990s, the recent history of journalism has been one of continuous technological challenges for the media industry, offering as many opportunities as uncertainties. In the fast-paced digital age, technology has become an integral part of news gathering and dissemination, and journalists have embraced innovative tools while steadily normalizing new professional routines. Now, in the 2020s, AI technologies suddenly pose a new, titanic challenge to journalism, heralding a profound impact on journalism and the media industry as a whole.

Over the last few years, the increasing abundance of digital data has paved the way for data-driven journalism. Journalists have learned to analyse vast volumes of information, identify patterns and extract relevant insights. This data-driven approach has enhanced storytelling by providing journalists with a deeper understanding of complex issues, and facilitating the creation of engaging and informative content. Additionally, digital tools have helped

journalists to fact-check information, minimizing the risk of spreading misinformation or fake news.

Digital technologies have also enabled media organizations to personalize content based on user preferences and behaviours. Through machine-learning algorithms, media platforms have learned to recommend tailored news articles, videos and various forms of multimedia content, enhancing the user experience and increasing engagement. This personalized and immersive approach has not only benefited consumers by delivering relevant content but has also allowed media outlets to cultivate loyal audiences and improve their revenue streams through targeted advertising.

AI has brought increased efficiency and automation to the media industry. Journalists can now employ AI-powered tools to gather and analyse vast amounts of data quickly and accurately. Machine-learning algorithms can comb through extensive databases and provide valuable insights, enabling journalists to make more informed decisions in their reporting. This efficiency allows journalists to focus on more critical tasks such as investigative reporting, while AI handles repetitive and time-consuming processes.

Moving forward, the impact of technology, particularly AI, promises to once again have a multifaceted and transformative effect on the media and journalism industry. AI has brought efficiency, data-driven insights and personalised content, enabling journalists to enhance their storytelling capabilities and engage audiences effectively. However, challenges related to biases in algorithms, ethical considerations and job security must be addressed. Striking the right balance between technology and human involvement is key to harnessing the benefits of AI while upholding the fundamental principles of journalism. As the media industry continues to evolve, it is vital for journalists to adapt and navigate the technological landscape to ensure the integrity and relevance of journalism in the digital age.

The technological advances of recent years, including the popularisation of AI through tools and generative platforms like ChatGPT or Midjourney, confirm that the pace of organisational changes in the present and near future will be highly determined by them. The ability to interpret and adapt a company's products or services to technological innovations should now be at the forefront of the hard skills required for anyone in managerial positions, as well as for any employees for whom technology also offers opportunities to do things differently and who risk being replaced by (more reliable) machines or algorithms. Change and innovation are here to stay, especially for media companies, which face profound changes because users and audiences are attracted to novelties and are interested in new ways to consume all kinds of content, or the same content in different ways. Just as digitalisation brought genuine disruption to the media sector, AI has once again come to shake its very foundations.

Despite these facts, there are reasons that could explain why the media sector, while seemingly different on the surface, will endure. The first reason is that its product and value chain, as Negroponte (1995) pointed out in

*Being Digital*, are fully divisible into bits, making it more prepared than others to embrace and leverage the digital world. However, this aspect has perhaps not been sufficiently emphasised in recent decades, as the sector grappled with the consequences of digitalisation and the implosion of the traditional advertising-based business model. Now is the time to re-evaluate the entire sector from a new perspective of opportunity and alignment with the digital realm. Moreover, and more importantly, the media's function, which fulfils society's right to be informed and helps interpret reality and facts, is more crucial than ever. Political polarisation, commercial interests and ideological movements pose real threats to our societies and way of life.

To succeed, news media companies need to reinvent themselves, embrace the opportunities offered by technology, and redefine their role in contemporary societies. This entails training professional staff, building multi-disciplinary teams to leverage digital possibilities, and re-establishing the ethical perspective that should always guide their daily work. Serving citizens requires upholding high-quality standards and maintaining strong commitment.

That was the ultimate goal of the JOLT project (<<http://joltetn.eu>>), a Marie-Sklodowska-Curie European Training Network funded by the European Commission dedicated to exploring the potential of digital and data technology for journalism. Developed from 2018 to 2022, this ambitious initiative comprised fourteen PhD projects and two research projects aimed at providing valuable theoretical insights, technical advancements and best-practice guidelines for the journalism and news industry. By bringing together researchers from diverse disciplines such as journalism, communication, data science, computer science and electronic engineering, JOLT collaborated with academic and industry partners across the European Union. Through its comprehensive approach, JOLT explored the transformative power of technology in journalism and drove innovation in the field.

This special issue of *Anàlisi* adds to our knowledge of the above topics by presenting a set of eight research papers selected from those presented at the JOLT-CICOM Conference "Harnessing Data and Technology for Journalism", held at the School of Communication of the University of Navarra (Pamplona, Spain) from 22 to 24 September 2021. These articles, mostly empirical and cross-national in perspective, look closely at issues such as perceptions of journalism and trust in different national contexts (Sierra, Serrano-Puche and Rodríguez-Virgili, 2023); collaborative journalism and normative journalism practices in Latin America (Mesquita, 2023); the challenges faced by news publishers as they adapt to the mobile and interpersonal nature of WhatsApp (Carpes and Moreu, 2023); the typology and trends of digital-native news media (Kaufmann-Argueta and Negredo, 2023; Negredo et al., 2023); transparency in news content, specifically analysing methods used in Spanish data journalism (Arias Robles et al., 2023); the political risks associated with agreements between online platforms and advertisers, investigating the potential dependency created by such agreements (Papaevangelou and Smyrniaos, 2023); and the relationship between immersive media and

social change, exploring how immersive media can foster emotional connections and drive social transformation (Baia Reis, 2023). This selection of research studies helps us better understand the keys to transforming journalism, which, far from being finished, promises new and exciting chapters in the years to come.

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