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JOURNALISM ECOSYSTEMS:

actors, characteristics and socio-
technological environments



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ABSTRACT – This paper explores the delimitation of the characteristics of a journalistic ecosystem in a scenario of confluence of institutional and market crises and the rise of digital technologies as infrastructures for the operation and technological mediation of political, economic and sociocultural relations. The analysis was conducted in two stages: a survey of 38 reports with diagnoses of contemporary transformations in journalism produced by three international journalism research institutes: Reuters Institute for the Study of Journalism, Tow Center for Digital Journalism and Pew Research Center. The period covers 20 years of diagnoses on journalism (2004 to 2023). The second stage of the analysis compared the indicators of transformations in the media and journalism with reference literature on social phenomena such as the formation of social networks and the structuring of social fields. The results present characteristics that express the contemporary forms of configuration and functioning of journalistic ecosystems.

Key words: Journalistic ecosystem. Socio-technological ecosystem. Field of journalism. Journalistic institution. Hybrid media system.

ECOSSISTEMAS JORNALÍSTICOS: atores, características e ambientes socio-tecnológicos

RESUMO – Este trabalho explora a delimitação das características de um ecossistema em jornalismo em um cenário de confluência de crises institucionais e mercadológicas e ascensão das tecnologias digitais como infraestruturas de operação e mediação tecnológica das relações políticas, econômicas e socioculturais. O percurso de análise teve dois momentos: uma pesquisa de 38 relatórios com diagnósticos sobre de transformações contemporâneas do jornalismo produzidas por três institutos internacionais de pesquisa em jornalismo: Reuters Institute for the Study of Journalism, Tow Center for Digital Journalism e Pew Research Center. O período abrange 20 anos de diagnósticos sobre o jornalismo (2004 a 2023). O segundo momento da análise confrontou os indicadores das transformações na mídia e no jornalismo com literaturas de referência sobre fenômenos sociais como a formação de redes sociais e a estruturação de campos sociais. Como resultados, são apresentadas características que expressam as formas contemporâneas de configuração e funcionamento dos ecossistemas jornalísticos.

Palavras-chave: Ecossistema jornalístico. Ecossistema socio-tecnológico. Campo do jornalismo. Instituição jornalística. Sistema de mídia híbrido.

ECOSISTEMA PERIODISTA: atores, características y entornos sociotecnológicos

RESUMEN – Este trabajo explora la delimitación de las características de un ecosistema periodístico en un escenario de confluencia de crisis institucionales y de mercado y el auge de las tecnologías digitales como infraestructuras operativas y mediadoras tecnológicas de las relaciones políticas, económicas y socioculturales. El camino de análisis tuvo dos momentos: una encuesta de 38 informes con diagnósticos sobre las transformaciones contemporáneas en el periodismo producidos por tres institutos internacionales de investigación en periodismo: Reuters Institute for the Study of Journalism, Tow Center for Digital Journalism y Pew Research Center. El período abarca 20 años de diagnósticos sobre el periodismo (2004 a 2023). El segundo momento del análisis comparó los indicadores de transformaciones en los medios y el periodismo con literatura de referencia sobre fenómenos sociales como la formación de redes sociales y la estructuración de campos sociales. Como resultados, se presentan características que expresan las formas contemporáneas de configuración y funcionamiento de los ecosistemas periodísticos.

Palabras clave: Ecosistema periodístico. Ecosistema sociotecnológico. Campo del periodismo. Institución periodística. Sistema de medios híbrido.

1 Introduction

The recent changes that have occurred to journalism, as well as the organizations that helped define it and the journalists who gave it a professional identity, have seriously affected journalistic activity. There are technological processes underway here, such as the shift from traditional journalistic supports to platform environments based on the logic of digital social networks and the data society (Boyd, 2010; Couldry, 2020; Couldry & Hepp, 2020; Van Dijck et al., 2018), the crisis in the market and business model of journalism, with a

reduced number of large media conglomerates and the dispersal of autonomous initiatives (Briggs, 2012; Meyer, 2004), and the loss of credibility, authority and social legitimacy of journalism, together with the precariousness and deprofessionalization of the profession (Deuze & Witschge, 2016; Kovach & Rosenstiel, 2004; Rottwilm, 2014).

These three factors have cross effects on journalism and pose challenges for reorientation and repositioning in the face of demands from society and markets. Consolidated in the 20th century as medium and large-sized industries (media conglomerates), these organizations seek to adapt their business models to the profile of Industry 4.0, with their production and circulation environments adopting informational and digital technologies such as the Internet of Things, big data, cloud computing, advanced robotics, artificial intelligence, and new materials, equipment and devices (CNI, 2016; Graglia & Lazzareschi, 2018).

The wide range of journalistic and non-journalistic actors that produce news content and services (professionals and non-specialist users, traditional or new media, structured organizations, or small, dispersed media) has been pushing the boundaries of professional specificities and identities. Our research for this paper focuses on the technological, industrial, market, sociocultural, and professional scenarios of journalism.

This paper was conceived on a perceived change to the design of the social space of actors and interactions that traditionally shaped the “field of journalism” as a relational field of forces and struggles—from the perspective of Pierre Bourdieu (1997, 2005) – in which professional journalists and their organizations are actors with social capital of legitimacy and authority. The emergence and penetrability of digital technologies (Castells, 2001) have made this space accessible to all types of new actors who compete for the symbolic power to act in journalism. The initial concept of the “field of journalism” has therefore become problematic, and no longer adapts to the contemporary scenario. Researchers in the theory of social fields have sought to update this approach by redesigning a “digital media field” (Gracia, 2021) or a “hybrid media system” (Chadwick, 2013; Perusko, 2021) in which a diversity of actors influence each other when acting within this media space. Their research has brought about a second problem: they call into question the prominence of journalistic actors in their area of expertise (Reese, 2022).

The objective of this paper is to understand the makeup and dynamics of these new social environments of journalism and the

growing use of the term “ecosystem” to characterize the formation of a new institutionality of journalistic relations, with an emphasis on digitalized infrastructures and interactions. This is a bibliographic and documentary research based on secondary data. This data was obtained from 38 empirical reports on contemporary changes in journalism, produced by the following three internationally recognized institutes in journalism research: the Reuters Institute for the Study of Journalism (University of Oxford), the Tow Center for Digital Journalism (Columbia University), and the Pew Research Center. Our analysis covered 20 years of studies on journalism (2004 to 2023).

We shall first present a preliminary formulation of an understanding of the journalism ecosystem based on recent studies. We then go on to detail the empirical research methodology, explain the collection and systematization of data, and develop the inferences and analytical efforts to seek the intended results.

2 Perceptions about the journalism ecosystem

The notion of ecosystem, as it has been frequently used in studies on the functioning of contemporary society, essentially approximates the concepts of ecology (biology) and system (informational and computational). It expresses two ideas: a) the diversity and complementarity of beings that live together in a common space, and b) an environment with a strong relationship of interdependence between these beings. It is normally adopted to define a specific type of environment and its actors and interactions: media ecosystem, journalism ecosystem, educational ecosystem, business ecosystem, innovation, etc.

Christopher Anderson (2016) analyzes news ecosystems, indicating the origins of the debate from 2001 onwards along the lines of “media ecosystem” in a brief indication by Henry Jenkins (2001). He identifies two analysis perspectives on the media ecosystem, which he calls the “environmental” and “rhizomatic” approaches. The former focuses mainly on the structuring of environmental elements and factors (particularly technological) of human beings and expands their perceptive and communicative capacities, while the latter perceives (a biological metaphor for “rhizome”) the power of expanding connections spread across networks outside of structural determinations.

From a journalistic perspective, Wiard's differentiation (2019) in the *Oxford Research Encyclopedia of Communication* refined the difference between "news ecology" and "news ecosystems". While the notion of "news ecology" derives from the media ecology perspective, the "use of the 'news ecosystem' metaphor in journalism studies is more recent and focuses on the diversity of actors involved in the production and dissemination of news" (Wiard, 2019, p. 1). Wiard's first definition is more of an operational one to understand how online news ecosystems are shaped, the diversity of actors involved in news production and their relationships, as well as how news circulates across different technologies. His second definition leads researchers to consider news as a complex social practice in which a diversity of actors compete with each other and ultimately influence the news narrative through mediated and unmediated actions.

In their well-known study *Post-Industrial Journalism: Adapting to the Present*, Anderson et al. (2012) use the term "journalism ecosystem" to describe an interdependence and mutual influence between the main actors involved in the production and circulation of journalistic information. In terms of news organizations, they are affected by changes to other parts of the ecosystem and must develop the ability to establish partnerships (formal and informal) with other organizations and operate on digital social networks, ultimately seeking to reduce operating costs.

Salaverria (2021, p. 23) believes that the new digital journalism ecosystem is no longer built on the polarization between analog and digital media, as both are dominant in the new environment; the disputes today are between two models of digital media: the digital natives and the non-natives. Digital native media are trained for this environment as they learned the logic, structure, and procedures of the internet, as well as understanding the hierarchies between these media in this new ecosystem.

This theme is also explored in Portuguese-speaking scientific communities. Canavilhas (2011) considers the "new media ecosystem" based on a connection between biology and media studies to recognize the opening of this ecosystem to new audiences who, with increased interactivity, can also produce content, ultimately involving users in the entire process. Saad (2021) adds to this by stating that the ecosystemic nature of contemporary journalism is a sociotechnical system characterized by a "system of technical mediation by human and non-human actors" (p. 60). It is from this perspective that Cabral (2022)

applies the term “automated journalism” to observe the constitution of new journalism ecosystems and to map Brazilian journalistic initiatives that use robots and artificial intelligence technologies.

Kalsing (2021) prefers the term “post-industrial journalism” to describe this scenario and indicates that journalistic transformations occur due to external and structural factors, such as platformization, datafication, and convergence, and affect the activity and function of journalists. Fontoura's thesis (2020) seeks to understand the expansion of the frontiers of post-industrial journalism, recognizing it as “an increasingly complex ecosystem of actors and practices” (p. 8), with its accentuated complexity and networking, in which collaboration between increasingly diverse actors stimulates the emergence of increasingly transversal initiatives (p. 246).

Quintanilha (2021) considers that the profound transformations in the media ecosystem were caused by both incremental innovations and radical breaks, having a strong impact on journalism, which had already been affected by an intense crisis in the sector. This approach is rooted in discussions about the perspectives of journalism in a post-industrial era where the activity contemplates both a “rigid” and “soft” definition in which a range of practices is carried out by a multitude of actors in different ways (Deuze & Witschge, 2018).

3 Research procedures

The objective of this research stage was to analyze and extract, from hypotheses on international journalistic performance, clues about the makeup of journalism ecosystems, their main actors, and their characteristics. We investigated 38 reports with empirical data prepared by three internationally recognized institutes in journalism research: the Reuters Institute for the Study of Journalism (University of Oxford), the Tow Center for Digital Journalism (Columbia University), and the Pew Research Center. These institutes shall be referenced in this paper by their respective initials (RISJ, TCDJ, and PRC).

The period covers 20 years of studies on journalism (2004 to 2023), which sufficiently cover the possible expansion of the use of the term ecosystem brought about by the association between computer systems and environmental notions in the infrastructure of networked digital technologies. These studies are particularly useful for

this research because they prioritized capturing perspectives that are very close to the actual reality of the changes to journalism in several countries. The quantitative details of this material are shown in table 1:

Table 1
Research reports between 2004-2023

Institute	Period	Editions
Reuters Institute for the Study of Journalism		
- "Digital News Report" annual report	2012 to 2023	12
- "Journalism, Media, and Technology Trends and Predictions" annual report	2016 to 2023	8
Tow Center for Digital Journalism		
"Platforms and Publishers" annual report	2017 to 2019	3
Pew Research Center		
"State of the News Media" annual report	2004 to 2018	15
Total	2004 to 2023	38

An inductive content analysis (Bardin, 2003) was applied from a constructive interpretive perspective to form a categorical framework throughout the research and also to perceive possible trends in the development of notions and their characterizations. The Inductive content analysis was considered suitable to understand the objects in an interpretative way, that is, to extract terms directly linked to the objectives of the work and to perceive the meanings attributed to them in the text, in the recognition of what is perceived, and in the identification of their variations in meaning.

As these reports present a strongly descriptive focus on situations and changes in journalism at different times and in different contexts, the research was based on the expectation that these reports would reveal inaccurate and unstable understandings of the journalism ecosystem and content analysis was chosen as a tool capable of guiding the investigation. After analyzing the materials obtained from the searches, inferences were generated (Bardin, 2003, p. 38) related to the proposed theoretical framework.

The reports were referred to as units of analysis and the recording units (the elements to be studied) were then defined. The

purpose of searching through the texts in the reports was to find the term “ecosystem” (in English) and related words (such as “news ecosystem”). All reports were saved in PDF format and the Adobe Acrobat Reader search tool was used to locate the term “ecosystem” and related words. We searched through all 38 reports.

Once having located the term(s), we looked at the usage. After confirming the relevance of the term, the paragraph in which it appears was separated and analyzed to show the context of use and reveal the meanings, characteristics, and notions applied to it. If the paragraph was insufficient (if it did not reveal basic elements of how the expression was used) surrounding paragraphs were then analyzed. Data analysis was performed using Excel software.

The reports were downloaded between June and September 2023 from the following websites:

<https://reutersinstitute.politics.ox.ac.uk/>

<https://towcenter.columbia.edu/>

<https://www.pewresearch.org/>

4 Research into situational reports on journalism

With the application of inductive content analysis, the next step was to classify the expanded ecosystem terms according to groups of related meanings (media ecosystem, journalism ecosystem, etc.). The notions, characteristics, and uses of these expressions were then verified both in the collected materials and in the theoretical literature, observing the proposal, the conceptual density, and the possible groupings and interrelations.

As this is a descriptive mapping, we chose to collect elements in the ecosystem according to the reports we investigated, without necessarily questioning mismatches or incompatibilities with the realities of these organizations and their activities. We will first describe the characteristics of these ecosystems and then point out specific traits, which we refer to as attributes.

4.1 Uses for the term journalism ecosystem

We conducted an initial reading of the 38 reports from the research institutes to locate and select uses of the term “ecosystem”.

Cataloging rules were applied by counting the terms registered that indicate the variety of formulations applied in the reports and the frequency of them, where “the importance of a registered unit increases with the frequency of appearance” (Bardin, 2003, pp. 108-109).

The count reached 104 appearances for the term “ecosystem”. After this, we sought to identify the meanings attributed to the term in the reports. The results are shown in table 1.

Table 1

Uses of the term “ecosystem” in reports (2004-2023)

Meaning of term	Description	Terms Used	Units Registered
Journalism Ecosystem	Explicit mention of the journalistic and editorial role	- ecosystem of print and broadcast - ecosystem of public interest journalism - ecosystem of news delivery - editorial ecosystem - journalism ecosystem - local news ecosystem - multi-platform news ecosystem - new ecosystem journalism - news and information ecosystem - news ecosystem - news media ecosystem - publishing ecosystem	46
Ecosystem	Use of the term without any specific characterization	ecosystem	19
Information Ecosystem	Can be interpreted as a journalism ecosystem or with widely circulated information	- information ecosystem - online information ecosystem	11

Media Ecosystem	The term media has typically been applied in a more open sense	media ecosystem	10
Digital Ecosystem	Emphasis on the digital characteristics of the ecosystem	• ad tech ecosystem • alternative software ecosystem • app ecosystems • Blogosphere Ecosystem • digital ecosystem • digital media ecosystem • home digital ecosystems • online ecosystem	8
Platform Ecosystem	Defining the prominent role of large digital platforms	• Facebook's ecosystem • platform ecosystem • platform ecosystem for news • social media ecosystem	6
Others	Highlight specific elements of the digital environment	• ecosystem of social network-based advertising • local TV ecosystem • NPR ecosystem • ad ecosystem	4
Total			104

Source: RISJ, TCDJ and PRC reports (2004-2023)

We can see in the table above that the most applied use of the term “ecosystem” was news ecosystem (44.2%). This expression almost always appeared in studies related to digital media environments, the themes of which focused more on journalism issues. Researchers used “information ecosystem” broadly, encompassing both the news media and the wider dissemination of information. Also of note is that a significant portion of the studies (10%) applied the term “ecosystem” to digital experiences, using expressions such as “digital ecosystem” or “platform ecosystem”. The more open term (“ecosystem”), without any qualifier, was used 18.2% of the time.

There have been few attempts to define these ecosystems beyond just naming them. The meaning of the journalism ecosystem was affirmed by adding conventional expressions to the term “ecosystem” that characterize traditional journalism such as “print and

broadcast”, “news delivery”, “local news”, “news media”, “publishing”, “journalism”, and others.

As expected, the reports provided inaccurate and unreliable information about the journalism ecosystem and lacked sufficient definitions. Instead, the aforementioned resource was used repeatedly, associating the term “ecosystem” with certain attributes that specified the type of media operation involved and provided readers with an understanding of the type of environments, actors, interactions, and journalism practices involved.

We then moved on to the second stage in which we identified the actors in these environments and identified the predominant characteristics of these journalism ecosystems. The actors were then identified and classified, and the ideas and expressions (of the terms) in the paragraphs were established to systematize the characteristics of journalism ecosystems. The actors and characteristics of the ecosystems are laid out in the following items.

4.2 Identification of ecosystem actors

In order to recognize the actors in journalism ecosystems, we chose to apply the inductive content analysis (Bardin, 2003) to find (in the 38 reports) indications of actors that dealt with ecosystems in situations analyzed by studies. By systematizing and typifying these mentions, we were able to classify the actor profiles in a table (table 2).

Table 2

Actors in the journalism ecosystem

Type of actors	Units registered	
	Nº	%
Traditional media (isolated or conglomerated)	71	31.9
Digital native media	63	28.3
Digital Platforms	35	15.7
Digital technology developers	19	8.5
Audience and amateur producers	8	3.6
Journalist community	3	1.3
Fact-checking agencies	3	1.3

State, regulatory, and supervisory organizations	2	0.9
Advertising Revenue Managers	2	0.9
Academic institutions (teaching and research)	1	0.4
Others	15	6.7
Total	222	99.5

Source: RISJ, TCDJ and PRC reports (2004-2023)

The classification of actors in the journalism ecosystem from the 38 reports does come with a caveat: the eventual presence or absence of subjects (as well as other elements) may be affected by the biases of the researcher teams who conducted these studies, their problems, and their research interests; however, we were unable to measure the level of this type of bias. Regardless, we recognize the validity and representativeness of these studies for this research due to the accuracy and density with which the data from the reports were collected, systematized, and analyzed, as well as the rich panorama offered on the state of journalism in different places and situations over the last 20 years.

Table 2 shows how the journalism ecosystem has a diverse field of actors with complementary roles and functions within an ecosystem. This is evident in the first five most cited actors (traditional media, native digital media, digital platforms, digital technology developers, and amateur audience and producers). Each one occupies a position and role within the ecosystem, and each one is complementary to the other.

This diversity is something that Mineiro et al. (2021) refer to as an “arena with multiple actors” (p. 294), where the structure of a social space and its interactional dynamics help to build and stabilize the environment. The mapping of actors does not indicate that they interact with one another or that there is quality interaction, which we shall discuss later.

A further cause for concern is that only five types of actors account for 88% of the mentions, which could cast doubt on the extensiveness of this diversity of actor profiles. Perhaps a methodological or interpretative bias in reports that mostly observe established actors made it hard to perceive the emergence of new actors with different roles.

Of interest is that the first two types of actors (traditional media and digital native media) are similar to an ecosystem

polarization mentioned in Salaverría (2021) between native and non-native media. Together, these two profiles account for 60% of mentions in the reports, and journalism ecosystems appear to be structured around them (in the way the 38 research reports were able to capture them). However, these documents do not contain further specific data on the types of relationships (interactions, disputes, etc.) that could provide a better view of these ecosystems, such as positions or hierarchies of power, as suggested by Salaverría.

4.3 Characteristics of journalism ecosystems

Our research then explored some of the most salient aspects of these ecosystems in digital environments. Expressions, ideas, descriptions, and analyses were extracted from the 38 reports and systematized into topics with greater explanatory power, which act as descriptive elements of journalism ecosystems. Below, we present the elements that had the greatest frequency, variety, or wealth of information in this characterization. Literal citations have been added to give a more accurate representation of the ideas in the reports, and are identified by the acronym and year of publication of each report: RISJ (Reuters Institute for the Study of Journalism), TCDJ (Tow Center for Digital Journalism), and PRC (Pew Research Center).

a) An ecosystem supports a diversity of actors and media and journalism models

The studies identified a variety of journalistic and non-journalistic forms, models, and actors (including professionals and amateurs) that move and act in these virtualized social spaces. It is a place that welcomes different economic models of journalism, whether commercial, non-profit, or public. “This new ecosystem will include different “styles” of journalism, a mix of professional and amateur approaches, and different economic models¹” (PRC, 2010).

The possibility of coexistence and collaboration between traditional and emerging media outlets is repeatedly highlighted, but the progressive loss of resources by these older news outlets and the increase in new journalistic ventures are also recognized (PRC, 2011). The Pew Center also described this scenario as a “digital community still in transition” in which “a vibrant new media scene is emerging.

But it may not yet consolidate” (PRC, 2011).

A traditional brand can also serve as a foundation for a new native digital brand. “Traditional brands tend to act as anchors or starting points; native digital brands tend to act as supplemental sources or can help entertain in downtime” (RISJ, 2016). They are actors who play different journalistic roles concerning the types of news produced on different platforms and the “stages of news evolution” (RISJ, 2016).

In this environment of diversity, news organizations are capable of reacting to the loss of space by adopting strategies to maintain part of their autonomy and control over journalism. A 2017 report from the Tow Center expressed a hope that traditional journalism values, such as civic journalism and freedom of the press, can be transformed into sustainable financial models in digital environments: “a hope that a new digital ecosystem could be built based on the traditional values and methods of journalism” (TCDJ, 2017).

b) Technological mediations make up the infrastructure of ecosystems

Devices, tools, software, and applications in digital technologies are fundamental components for the structure and operation of these environments. There are resources related to the organization and use of data and content such as search engines and news aggregators, as well as interaction such as digital social networks: “Aggregators, while they do not create content, continue to be a critical element of the online ecosystem, helping news consumers navigate and organize an ever-increasing volume of news content” (PRC, 2010); “...search engines and social networks become more important to the news ecosystem” (RISJ, 2018).

The extent of this impact of technological mediation increased with the rapid adoption of the smartphone as a multifunctional work and entertainment device, affecting media production and consumption, “...transforming technology companies and their applications and operating systems into the new guardians of information” (TCDJ, 2017). The Tow Center studies have noted that newspaper editors and executives “...are struggling to understand how to work with these powerful new forces in the industry” (TCDJ, 2017). These platforms have developed tools “...for news publishers to find audiences and monetize readers within their own ecosystems”

(TCDJ, 2018).

These technological mediators of social experience reshape news, making it more interactive, ubiquitous, personalized, and mediated by platforms, with a greater variety of content and formats, all of which are constantly being updated. They also allow publishers to develop products to find and segment audiences and measure the receptivity of content.

c) A strong structural presence of digital platforms

The reports recognize that large digital platforms hold the leading role in these technological mediations in the journalism ecosystem. This is controlled by a small number of platform companies that have a tremendous influence on content and interactions in digital environments. They are labeled as “guardians” or “giants of the new information ecosystem” (PRC, 2011) and have “very strict control” over the information ecosystem, being considered “the guardians of the online information ecosystem” (TCDJ, 2019).

Platforms are therefore seen as “key players” in the news ecosystem: “The distribution and presentation of information, the monetization of the publication, and the relationship with the public are dominated by a handful of platforms” (TCDJ, 2017). Its oligopolistic business power clashes with the aspirations of freedom that guided expectations about the beginnings of this digital infrastructure and, consequently, the existence and performance of a free press. “The internet we see today, largely controlled by two or three companies, is a far cry from Tim Berners-Lee’s open web” (TCDJ, 2017). Making news organizations dependent on the infrastructure that platforms control ends up reducing journalism’s role as a societal intermediary.

This prominence of platforms is highly noticeable not only by their dominance over digital technology but also over the advertising world with regard to conducting research and data analysis on audiences for monetization purposes. “Today, it is clear that few news monetization strategies will be complete without platforms” (TCDJ, 2018). Platforms also interfere in news processes by taking on part of the informative functions of news organizations, having an increasing say over the distribution and presentation of information and relationships with audiences.

d) Interaction, visibility, and engagement are social

and monetization logic

The interactive characteristics of digital social networks also encourage practices in digital ecosystems, such as sharing, influence, involvement, and engagement in circulated content. There are indications of environments that have a “commitment and a sense of community” (PRC, 2011) with larger-scale interactions.

They create technological possibilities for exchanging ideas, passions, and information, and for showing support and encouragement, as if they were a “public space”. One can see that the types of attractive content in interactive environments are what stimulate circulation: “The audience likes the mix of facts and opinions, authenticity and interaction; this makes it possible and seems destined to remain an essential part of the news ecosystem for the foreseeable future” (RISJ, 2014).

These interactive dynamics have a strong economic component, as they are linked (through financial technology) to advertising and monetization mechanisms. It is a business model that disrupts the media organizations’ model of distribution and revenue by selling content and advertising. What we find here is that, similar to the logic of digital social networks, this journalism ecosystem “... promotes range and shareability” (TCDJ, 2019).

The Pew Research Center report highlights this new value of the digital environment, “shareability”, by enhancing interaction processes on the internet: “Shared content equals influence. And influence in the news ecosystem equals engagement. And engagement equals value” (PRC, 2012).

The interactional dimension of journalism ecosystems could also be researched in a qualitative study using data from content analysis. We identified expressions for the ecosystem interaction types and classified them as follows:

d.1) Partnerships for market interests in the ecosystem: we found several expressions that show increased relations of economic interest between actors, both in the form of partnerships and strategic alliances and in payment methods for viewing news.

d.2) We found further expressions that denote relationships between actors who dispute capital and positions of power, as well as processes of exercising power, domination, and polarization in the ecosystem. Polarization and the formation of social bubbles (“echo

chamber” and “filter bubble”) are two examples.

d.3) Defending the foundations and values of ecosystem operations. We also found mentions of actors who aimed to build civic values, trust, literacy, and non-profit action models in the ecosystem.

d.4) Various exchanges within the ecosystem. Simple, specific, and temporary forms of interacting with the environment (such as exchanging emails) were also occasionally mentioned.

e) Ecosystems are changing and growing

Several reports have claimed that the digital ecosystem is a phenomenon in transition. This transition is presented in different ways, such as the idea that the traditional media system was limited and now the digital environment offers more openness: “the ecosystem is changing, and some things are growing. But if a new model is found, it is hardly clear what it will be” (PRC, 2010). This “increasingly complex ecosystem” (PRC, 2012) demands that journalism actors be able to interact with complex organizations, such as platforms. It has the potential to offer a richer user experience but is also subject to more vulnerability. “A more diffuse news and information ecosystem is more complex and more difficult to imagine. It is also still vulnerable” (PRC, 2011).

f) Ecosystem problems and vulnerabilities are concerning

The studies also brought a critical approach to these environments. Some claim that these processes can have “destructive side effects” or be “confusing” – “validity has little weight in an ecosystem determined by confusion” (TCDJ 2017). They also accentuate the fragmented media and public attention. Reuters reports explore the fragmented state of the Greek journalism ecosystem (2023). Security flaws jeopardized the communication within these systems.

When reflecting on the journalistic aspect of these ecosystems, there was also concern that news consumption is “more casual and incidental” (RISJ, 2023). Managing news flows through algorithms was considered “unsustainable”.

5 Journalism ecosystems as socio-technological

environments

This last item of the article explored the descriptive elements of journalism ecosystems presented and systematized in this paper. We used them to reflect on these environments as theoretical constructs, both from the disciplinary perspective of sociology (networks of social relations, structures of social fields, organizational and institutional aspects, the social dimension of technologies, and the cooperative/collaborative vocations of social actors) and an interdisciplinary perspective (a transversal phenomenon built from a biological ecosystems perspective, but accentuated by its social and technological nature).

From this premise, we delimit a first characterization of the journalistic ecosystem as a socio-technological ecosystem, a human construction resulting from structures created to make it viable. In this operation, we still recognize the validity of Bourdieu's theory of social fields as endowed with a structural and relational reading of actors, fields, positions, capitals, and also symbolic and power disputes in journalism. We also look to Chadwick's (2013) thoughts on the hybrid nature of contemporary media systems and their repercussions for thinking about the institutionality of journalism (Reese, 2022).

One feature that stands out from the characteristics described above is that the journalistic ecosystem presents a structural dimension of the social relations that are established within it. This aspect can be understood in approaches that study "networks of social relations" which are structured, dense, stable, and penetrate social life (Granovetter, 2014, pp. 44-56). There were aspects of stability and also examples of risks of instability: the lack of density, structuring, or stability of these networks can have a significant impact on the fragility of socio-technological ecosystems, which could be a threat to the journalism ecosystem.

A second characteristic of journalism ecosystems is the diversity of actors and media models, which indicates both a potential for participation and a risk to its stability. This variety of actors also revealed unequal positions in the media or journalism field, and this may signal the risk of weakening social ties between those involved or disputes for visibility and authority without rules defined by the field. One challenge seems to be to articulate diversity and complementarity with social ties that guarantee a minimum of stability to the journalism ecosystem. The journalism ecosystem also has conflicting dynamics

and vulnerabilities that present risks to its integrity.

A third aspect to be considered is that a socio-technological ecosystem is also an expression of human intentionality, socially configured. In other words, ecosystems were a consequence of the social interests of groups that contribute to their existence. Smelser and Swedberg (2005, p. 18) draw on Bourdieu's studies on the notion of interest when explaining that interest shows a commitment to the rules of operation of a social field, the commitment to "giving importance to a social game".

It is in this effort to recognize the contours of a journalism ecosystem that additional ideas of knowledge, technology, innovation, market, business model, etc. are added. In this regard, the extracts from the reports on the performance of components aimed at ecosystem participation (such as a commitment to a sense of community, social gatherings, and creating public spaces for conversation and debate) provide clues about intentions based on the desire to interact and engage, a "mix" that operates social or economic logics.

This leads us to a fourth element in the journalism ecosystem: its organicity depends on the economic interests of production processes and market operations. Thus, it is necessary to articulate the contemporary configurations of journalism ecosystems to a scenario of crisis in global capitalism linked to uneven and combined development (Corsi, 2013).

This also affects the understanding that the journalism ecosystem is a social space for the exercise of journalism as a profession that, in addition to internal conflicts within the ecosystem, coexists with substantial changes in labor relations. The tensions of journalistic work, which is directed towards less legal-formal ties in organizations, the precariousness of work relations in multimodal digital environments, and the growth of non-professional journalism then shaped the journalism ecosystem.

Socio-technological ecosystems are made up of networks of social relations that guarantee, from an economic point of view, the survival of companies (Granovetter, 2014). Thus, journalism ecosystems must be seen as interconnections between social, economic, and technological conditions.

A fifth aspect that shapes the journalism ecosystem is its institutional dimension. As per Ramella (2020), institutions are analyzed here in a broad sense, expressing habits, routines, rules,

norms, and laws that organize and regulate social actions and relations and organize the cognitive process. A “strong interdependence between economic structure and institutional context” is visible (Ramella, 2020, p. 236). As historical constructions, institutions are the result of interactions and negotiations in the form of formal and informal procedures, protocols, norms and conventions, symbols, worldviews, moral models, and cognitive frameworks that provide meaning to the actions of a particular group. A journalism institution can also be seen as a collective body that gives identity and social form to the activity by rationalizing actions, norms, and values.

Reese (2022) provides an interesting view when revisiting the concept of journalism institutions in the contemporary digital environment, dialoguing with the notion of a “hybrid media system” based on Chadwick (2013). He recognizes the cohesion of Chadwick’s thesis that we observe media systems considering more dynamic and fluid boundaries between old and new logics, which are continually in processes of integration and fragmentation, expressing overlaps, intertwining, and co-evolution (Reese, 2022, p. 256). This hybrid dimension, however, is not enough to delegitimize the institutional nature of journalism as a mode of stability over time and resistance to threats to its survival.

6 Final considerations

The research presented in this article describes and analyzes the possibilities of defining a journalism ecosystem. The empirical basis of the work (research on the notions and uses of the term “ecosystem” in 38 reports from three international journalism research institutes over the last 20 years) provided elements for three objectives.

The first was to systematize the characteristics of these ecosystems, taking into account the strong presence of technological (digitalization) and economic (transitions in production and work patterns) conditions. This perspective allowed for an outline closer to the contemporary situation of media systems.

We were also able to conduct a more interpretative reading of the data from the 38 reports, and then map out a set of characteristics of the journalism ecosystem of intense digitalization. We identified six characteristics: the diversity of actors and media and journalism models, the strength of technological mediations, the structural

presence of digital platforms, the logic of engagement, the condition of growth and transition, and the vulnerability of ecosystems. The instability of these characteristics prevents the formation of a fixed structure; they are shaped by events such as hybridization, social fragmentation, rapidly evolving social processes, datafication, and the pervasive influence of artificial intelligence.

The third objective of this paper was to define journalism ecosystems as socio-technological ecosystems: a human construction resulting from technological structures and social interactions, bringing a socially configured intentionality that is defined by technologies, interests, and relations of dispute and power. In this aspect, an ecosystem also presents a logic of a “field of forces and struggles” similar to the notion of a journalistic field, but conceptually surpasses it by incorporating the diversity of new elements, situations, and dynamics described in the research. A journalism ecosystem depends on structural, systemic, and cognitive conditions to exist, but it is the intentionality of journalism that justifies its creation.

REFERENCES

- Anderson, C. W., Bell, E., & Shirky, C. (2012). *Post-Industrial Journalism: adapting to the Present*. Tow Center for Digital Journalism.
- Anderson, C. W. (2016). News ecosystems. In T. Witschge, C. W. Anderson, D. Domingo & A. Hermida (Eds.), *The SAGE handbook of digital journalism* (pp. 410-423). Sage.
- Bardin, L. (2003). *Análise de conteúdo*. Edições 70.
- Bourdieu, P. (1997). *Sobre a Televisão*. Jorge Zahar.
- Bourdieu, P. (2005). The political field, the science field, and the journalistic field. In R. Benson & E. Neveu (Eds.), *Bourdieu and the Journalistic Field* (pp. 29-47). Polity Press.
- Boyd, D. (2010). Social Network Sites as Networked Publics: Affordances, Dynamics, and Implications. In Z. Papacharissi (Ed.), *A networked self: identity, community and culture on social network sites* (pp. 39-58). Routledge.
- Briggs, M. (2012). *Entrepreneurial journalism. How to build what's next for news*. Sage.
- Cabral, L. R. de A. (2022). *Jornalismo automatizado: Inteligência*

artificial e robôs nas redações das organizações jornalísticas [master thesis, Universidade Federal da Paraíba]. Repositório Institucional da UFPB.

Canavilhas, J. (2011). El nuevo ecosistema mediático. *index. comunicación*, 1(1), 13–24. Retrieved from <https://journals.sfu.ca/indexcomunicacion/index.php/indexcomunicacion/article/view/4>

Castells, M. (2001). *A Sociedade em Rede - A Era da Informação: Economia, Sociedade e Cultura* (vol. 1). Paz e Terra.

Chadwick, A. (2013). *The hybrid media system: politics and power*. Oxford University Press.

CNI - Confederação Nacional da Indústria. (2016). *Desafios para a indústria 4.0 no Brasil*. Brasília: CNI.

Corsi, F. L. (2013). A crise do capitalismo global em perspectiva histórica. In A. Santos, F. L. Corsi, J. M. Camargo & R. L. Vieira (Eds.), *Crise do capitalismo global no mundo e no Brasil* (pp. 51-70). Canal6.

Couldry, N. (2020). *Colonialismo de dados e esvaziamento da vida social*. XIX Simpósio Internacional Instituto Humanitas Unisinos – Homo Digitalis: A escalada da digitalização da vida em tempos de pandemia, Porto Alegre, RS, Brasil. Retrieved from www.ihu.unisinos.br/images/ihu/2020/eventos/simposio_homo_digitalis/conferencias_pdf/Nick-Couldry.pdf

Couldry, N., & Hepp, A. (2020). *A construção mediada da realidade*. Ed. UNISINOS.

Deuze, M., & Witschge, T. (2016). O que o jornalismo está se tornando. *Parágrafo*, 4(2), 7-21. Retrieved from <https://revistaseletronicas.fiamfaam.br/index.php/recicofi/article/view/478>

Deuze, M., & Witschge, T. (2018). Beyond journalism: Theorizing the transformation of journalism. *Journalism*, 19(2), 165–181. DOI: 10.1177/1464884916688550

Fontoura, M. C. da. (2020). *O que o jornalismo pode ser: a expansão das fronteiras do jornalismo pós-industrial* [doctoral dissertation, Pontifícia Universidade Católica do Rio Grande do Sul]. Biblioteca Digital de Teses e Dissertações – PUCRS.

Gracia, J. P. (2021). El campo mediático-digital y la diferenciación social. *Política y Sociedad*, 58(1), 1-11. DOI: 10.5209/poso.60788

Graglia, M. A. V., & Lazzareschi, N. (2018). A indústria 4.0 e o futuro do trabalho. *Revista Brasileira de Sociologia*, 6(14), 109–151. DOI: 10.20336/rbs.414

Granovetter, M. (2014). Ação econômica e estrutura social: o problema da imersão. In A. C. B. Martes (Ed.), *Redes e sociologia econômica* (pp. 31-68). EdUFSCar. DOI: 10.1093/acrefore/9780190228613.013.847

Jenkins, H. (2001). *Cultura da Convergência*. Aleph.

Kalsing, J. (2021). *Jornalistas metrificados e a plataformação do jornalismo* [doctoral dissertation, Universidade Federal do Rio Grande do Sul]. Repositório Digital – UFRGS.

Kovach, B., & Rosenstiel, T. (2004). *Os Elementos do Jornalismo – O que os jornalistas devem saber e o público exigir*. Geração Editorial.

Meyer, P. (2004). *The Vanishing Newspaper: Saving Journalism in the Information Age*. University of Missouri Press.

Mineiro, A., Souza, T. A., & Castro, C. (2021). The quadruple and quintuple helix in innovation environments. *Innovation & Management Review*, 18(3), 292-307. DOI: 10.1108/INMR-08-2019-0098

Perusko, Z. (2021). Public sphere in hybrid media systems in Central and Eastern Europe. *Javnost - The Public*, 28(1), 36-52. DOI: 10.1080/13183222.2021.1861405

Quintanilha, T. L. (2021). Journalists' professional self-representations: A Portuguese perspective based on the contribution made by the sociology of professions. *Journalism*, 22(7), 1587-1603. DOI: 10.1177/1464884919828246

Ramella, F. (2020). *Sociologia da Inovação Econômica*. Ed. UFRGS.

Reese, S. D. (2022). The institution of journalism: Conceptualizing the press in a hybrid media system. *Digital Journalism*, 10(2), 253-266. DOI: 10.1080/21670811.2021.1977669

Rottwilm, P. (2014). *The future of journalistic work: Its changing nature and implications* (Report). Reuters Institute for the Study of Journalism.

Saad, E. (2021). Reflexões sobre ontologias jornalísticas no contexto de desinformação e crises sistêmicas. *Fronteiras – estudos midiáticos*, 23(2), 58-72. DOI: 10.4013/fem.2021.232.05

Salaverría, R. (2021). Veinticinco años de evolución del ecosistema periodístico digital en España. In R. Salaverría & M. P. Martínez-Costa (Eds.), *Medios nativos digitales en España: caracterización y tendencias* (pp. 21-35). Comunicación Social Ediciones y Publicaciones.

Smelser, N., & Swedberg, R. (2005). Introducing economic sociology. In N. Smelser & R. Swedberg (Eds.), *The handbook of economic sociology* (pp. 3-25). Princeton University Press.

Van Dijck, J., Poell, T., & de Waal, M. (2018). *The platform society*. Oxford University Press.

Wiard, V. (2019). News ecology and news ecosystems. *Oxford Research Encyclopedia of Communication*., 0(0), 1 – 19. DOI: 10.1093/acrefore/9780190228613.013.847

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