

DIGITAL TRANSFORMATION AND ADVERTISING STRATEGIES ON SPANISH RADIO: A COMPARATIVE ANALYSIS OF CADENA SER, COPE, AND ONDA CERO

TRANSFORMAÇÃO DIGITAL E ESTRATÉGIAS PUBLICITARIAS NO RÁDIO ESPANHOL: UMA ANÁLISE COMPARATIVA DE CADENA SER, COPE E ONDA CERO

TRANSFORMACIÓN DIGITAL Y ESTRATEGIAS PUBLICITARIAS EN LA RADIO ESPAÑOLA: UN ANÁLISIS COMPARATIVO DE LA CADENA SER, LA COPE Y ONDA CERO

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ABSTRACT

This study examines the evolution of digital and advertising strategies of Cadena SER, Onda Cero and COPE, audience leaders according to the EGM (2024). Using a qualitative-descriptive method based on content analysis (Krippendorff, 1990; Bardin, 1986), we compare the structure, user interactivity and advertising strategies of their websites. Key aspects such as accessibility, live radio, on-demand content, digital native audio, interactivity and content personalisation are examined. The findings reveal notable differences in organisation, engagement and personalisation. The study concludes that Spanish online radio is migrating to a multiplatform model, facilitating audience expansion and diversification of the advertising business, although challenges remain in personalisation and digital advertising integration.

Keywords: Radio. Media Convergence. Online Monetization. Interactivity. Audio on Demand.

RESUMO

Este estudo examina a evolução das estratégias digitais e publicitárias da Cadena SER, Onda Cero e COPE, líderes em audiência segundo a EGM (2024). Utilizando um método qualitativo-descritivo baseado em análise de conteúdo, (Krippendorff, 1990; Bardin, 1986), a estrutura, interatividade com o usuário e estratégias publicitárias de seus sites são comparadas. Aspectos-chave como acessibilidade, rádio ao vivo, conteúdo sob demanda, áudio nativo digital, interatividade e personalização do conteúdo são examinados. Os resultados revelam diferenças notáveis em organização, participação e personalização. O estudo conclui que a rádio online em espanhol está migrando para um modelo multiplataforma, facilitando a expansão do público e a diversificação do negócio da publicidade, embora persistam desafios na personalização e integração da publicidade digital.

Palavras-chave: Rádio. Convergência de Mídia. Monetização Online. Interatividade. Áudio Sob Demanda.

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RESUMEN

Este estudio examina la evolución de estrategias digitales y publicitarias de Cadena SER, Onda Cero y COPE, líderes en audiencia según el EGM (2024). Empleando un método cualitativo-descriptivo basado en análisis de contenido, (Krippendorff, 1990; Bardin, 1986), se comparan la estructura, interactividad con el usuario y estrategias publicitarias de sus sitios web. Se examinan aspecto clave como accesibilidad, radio en directo, contenidos a la carta, audio nativo digital, interactividad y personalización de contenido. Los hallazgos revelan diferencias notables en organización, participación y personalización. El estudio concluye que la radio online española migra a un modelo multiplataforma, facilitando expansión de audiencia y diversificación del negocio publicitario, aunque persisten desafíos en personalización e integración publicitaria digital.

Palabras clave: Radio. Convergencia Mediática. Monetización Online. Interactividad. Audio a la Carta.

1 INTRODUCTION

The digitalization of the media ecosystem has profoundly transformed the modes of production, circulation and consumption of sound content at a global level. In the last two decades, radio — traditionally considered a medium of great social capillarity and associated with instantaneity and orality — has undergone a continuous process of technological reconversion marked by the convergence of platforms, the multiplication of formats and the emergence of new patterns of interaction between audiences and broadcasters. Far from signifying the decline of the medium, this transformation has highlighted its historical capacity for adaptation, innovation, and social resignification, as highlighted by several studies on radio in Spain and Europe (Toural & Sánchez, 2021; González & Toural, 2017; Rodero & Sánchez, 2007).

In the Spanish context, this reconfiguration is driven by the incorporation of digital services — such as multimedia websites, mobile apps, native podcasts, geolocation tools, and personalization spaces — that expand the reach of broadcasters and diversify their business models. Radio no longer depends exclusively on the linear logic of transmission to adopt a hybrid paradigm in which live radio, on-demand content, digital native audio products, and new interactive formats coexist (Bonet & Sellas, 2019; Benson & Powers, 2011; Tandoc et al., 2018). Thus, sound consumption expands to multiplatform environments, breaking temporal and geographical barriers and enabling more immersive and customizable experiences (Losifidis & Wheeler, 2018; Chen & Han, 2020).

This digital transition also has a decisive impact on the advertising strategies of broadcasters. The implementation of dynamic banners, pre-roll spots, branded content, "Brand Day" formats, and programmatic advertising has redefined the economic role of web portals, which now function as fundamental extensions of the traditional monetization of analog broadcasting (Piñeiro-Otero, 2015; Legorburu et al., 2019). It is, therefore, a transformation that involves both the renewal of the content offer and the restructuring of revenue models.

In the Spanish market, Cadena SER, Cadena COPE and Onda Cero constitute the three main private generalist radio groups, historically leading the audience measured by the General Media Study (EGM). These broadcasters operate as references in the adoption of digital strategies that seek to capture new audiences, retain traditional audiences, and explore monetization formats aligned with the logics of online consumption. However, despite sharing common challenges, they implement different models of content organization,

interactivity, usability and advertising, which opens space for systematic comparisons and the identification of divergent trends in the evolution of Spanish digital radio.

In view of this scenario, the present study aims to comparatively analyze the digital and advertising strategies implemented by Cadena SER, COPE and Onda Cero, considering their official web platforms. The research adopts a qualitative-descriptive approach based on content analysis (Bardin, 1986; Krippendorff, 1990), allowing us to examine the structure of the portals, the diversity of the content offered, the mechanisms of interaction with users, the multimedia integration and the presence of digital advertising formats.

The relevance of the study lies in two main dimensions. Firstly, it contributes to the field of Communication by offering an updated analysis of the evolution of Spanish radio in its process of media convergence, highlighting how digital strategies redefine communication practices and business models. Secondly, it allows us to understand how broadcasters respond to the demands of an audience that is increasingly connected, mobile and accustomed to personalization, a central characteristic of contemporary digital culture.

The article is structured as follows: after this introduction, section 2 presents the theoretical framework that underlies the study, addressing radio transformations in the digital age and its relationship with convergence processes. Section 3 describes the methodology applied, detailing the sample design, the analysis categories and the registration procedures. Section 4 presents the results of the comparative analysis and section 5 discusses the findings in the light of the literature. Finally, section 6 presents the conclusions and points out possibilities for future research.

2 THEORETICAL FRAMEWORK

The emergence of television and, subsequently, the rise of the Internet generated profound transformations in the media landscape, which raised questions about the future and evolution of radio. While some critics stigmatize radio as a medium belonging to the past, incapable of the emergence of television and, subsequently, the rise of the Internet have generated profound transformations in the media landscape, which have raised questions about the future and evolution of radio. While some critics stigmatize radio as a medium belonging to the past, unable to connect with young audiences, others highlight its ability to generate experiences of community and alternative communication (Garcés, 2007: 227). Since its emergence in Spain more than a century ago, radio has undergone multiple technological transformations, constantly adapting to changes in the processes of production,

distribution, and reception of sound (Toural & Sánchez, 2021; González & Toural, 2017; Sánchez, 2020). In this sense, radio has been characterized by its remarkable ability to adapt to social, cultural, and technological transformations (Rodero & Sánchez, 2007).

Digitalization is the most recent major reconversion of the sound medium. In Spain, broadcasters have implemented online services – such as websites, mobile apps, and social media profiles – that allow them to interact with new audiences and expand their broadcasts beyond traditional broadcast hours (Sánchez, 2020; Toural & Sánchez, 2021). This media convergence has led to the creation of multimedia websites that not only broadcast audio on demand or native digital content (podcasts), but are also transformed into authentic digital diaries in which text, images, audio, and video are integrated in real time. This new paradigm contributes to enriching the user experience and innovating in the production and presentation of content, which, in turn, generates added value in terms of interaction and personalization (Fuente et al., 2014; Forero & Céspedes, 2018).

In particular, the Internet has modified the defining characteristics of traditional radio by breaking temporal linearity, allowing listeners to access both live and delayed programs (Benson & Powers, 2011). On-demand radio, by offering previously transmitted content, facilitates the capture of new audiences and expands the station's reach (Tandoc, et al., 2018). Similarly, the development of digital native audio, designed specifically for online consumption, diversifies the offer and enhances personalization, which translates into greater listener participation and the emergence of new production formats (Mullo-López & Yaguana-Romero, 2017). The consolidation of smartphones as the predominant devices in access to information has redefined production and commercial processes in the cultural industry, forcing radio operators, streaming services, and podcast creators to adapt their value chains to new consumption dynamics, especially in the younger audience segment (Pedrero et al., 2019).

Since the 2000s, and with the growth of podcasting, Spanish broadcasters have moved from strategies based on the management of recycled content to the production of digital native audio. The integration of digital technologies has allowed radio to combine traditional linear broadcasting with asynchronous consumption, enriching its offer and extending the useful life of its content (Ribes et al., 2016; Moreno, 2017; Martínez-Costa et al., 2018; Pedrero & Herrera, 2017; Bonet & Sellas, 2019). This transformation has not only optimized content management and audience acquisition, but has also driven business diversification through new advertising formats – such as banners, spots, and Brand Day –

and the integration of interactive content, which allows users to save, share, and actively participate in programming (Rodríguez Luque et al., 2020; Legorburu et al., 2019; Valero & Sánchez, 2015).

In the twenty-first century, radio has established itself as a multimedia and multidimensional medium, in which traditional characteristics coexist with new digital technologies to offer an interactive, enriched, and personalized listening experience (Losifidis & Wheeler, 2018; Chen & Han, 2020; García-Santamaría & Perea-Rodríguez, 2017; Gómez-Barroso & Feijoo, 2019). The transition to a cross-media model has made it possible to transform the traditional unidirectionality of radio into two-way communication, in which real-time interaction with the audience is an essential feature (Rodríguez-Martínez, 2018).

Similarly, business diversification through digitalization has emerged as a key strategy for sustainability and growth for issuers. Online advertising – which incorporates formats typical of the digital environment – has become an additional source of income, complementing traditional advertising on analog broadcasts and allowing broadcasters to capture new audience segments and build loyalty among existing listeners (Piñeiro-Otero, 2015).

2.1 DIGITAL TRANSFORMATION OF RADIO AND MEDIA CONVERGENCE

Technological evolution has generated a process of structural reconfiguration in the radio industry, driven by the convergence of media and the transition to the digital environment (Losifidis & Wheeler, 2018; Chen & Han, 2020). Unlike other previous technological crises, the digitalization of radio was not only a challenge, but also an opportunity for business expansion and diversification (García-Santamaría & Perea-Rodríguez, 2017). Online radio has expanded the user experience by offering ubiquitous and immediate access to content, eliminating the geographical and temporal barriers associated with analog radio (Garcés, 2007).

The phenomenon of online radio (web radio) has allowed the integration of new formats, such as on-demand audio and digital native audio, facilitating a greater degree of interactivity with the audience and new monetization opportunities through innovative advertising strategies (González & Toural, 2017). However, digital radio is not simply a transposition of the analog signal to the web environment, but involves the reconfiguration of radio consumption to a multiplatform, multidimensional and highly personalized model (Bonet & Sellas, 2019).



This transformation process has led to a redefinition of traditional business models, in which radio no longer relies solely on conventional on-air advertising, but has also incorporated new monetization strategies into the digital sphere. These range from programmatic advertising and interactive formats to branded content strategies and premium subscriptions (Pedrero-Esteban et al., 2019).

2.2 DIGITAL RADIO IN SPAIN: CURRENT CONTEXT AND MAIN GENERALIST PRIVATE BROADCASTERS

Spain is immersed in this process of transition to digital radio, with a sustained increase in online audiences. According to the General Media Study (EGM, 2024), online radio consumption has grown by more than 150% in the last decade, with a special impact on young and urban listeners. At the market level, the panorama is dominated by three major generalist broadcasters: Cadena SER, Cadena COPE and Onda Cero, which compete both in the field of traditional audiences and in the digital ecosystem.

Cadena SER (Grupo PRISA): A historical leader in audience, it has developed a comprehensive digital strategy based on the offer of podcasts, subscription services and a platform for personalized and geolocated content.

COPE: Characterized by a focus on audience loyalty through the provision of on-demand radio and reference programs, with an increasing integration of unique digital audio formats.

Cero Wave: Characterized by simplifying the user experience and the offer of information, it has opted for a clean and direct interface, with less advertising saturation than its competitors.

Each of these broadcasters has adopted different strategies in their digital transition, which raises questions about their impact on audience acquisition and retention, revenue diversification, and the effectiveness of their advertising strategies in the online environment

In this context, this research aims to analyze and compare the digital and advertising strategies implemented by Cadena SER, COPE and Onda Cero, in order to evaluate their impact on the public and the diversification of the online radio business. To approach this object of study, a methodological design based on content analysis is used, following the principles of Bardin (1986) and Krippendorff (1990). A comparative study of the digital platforms of the three broadcasters is carried out over three months (September-November 2024), with the aim of identifying patterns in the layout of the content, the navigation structure,

the offer of interactivity, and the integration of advertising strategies.

The article is structured in the following sections: section 2 describes the methodology used; Section 3 presents the results of the comparative analysis; Section 4 discusses the findings in relation to the previous literature; and section 5 presents the conclusions and proposals for research.

3 METHODOLOGY

This research adopts a qualitative and descriptive approach, with the aim of comparatively examining the digital and advertising strategies of the main private radio portals in Spain.

The analysis focuses on the content and functionalities of the official websites of Cadena SER, COPE and Onda Cero, taking as reference the criteria proposed in the content analysis (Bardin, 1986; Krippendorff, 1990) and the perspective of media convergence applied to the radio environment (Rodero & Sánchez, 2007; Balsebre et al., 2023).

The overall objective of the research is to examine and compare the evolution of digital and advertising strategies implemented by Spain's main private radio channels – Cadena SER, COPE and Onda Cero – in order to determine their impact on business diversification and user experience. The specific objectives are set out below:

1. Characterize the structure and organization of the digital portals of the three stations, identifying the main sections and functionalities (live radio, audio on demand repositories, native podcasts, multimedia content, etc.).
2. Analyze the advertising strategy on each site, describing the formats used (banners, spots, Brand Day, sponsorship) and evaluating their potential to generate additional income.
3. Evaluate the usability and interactivity of the portals, as well as the presence of personalization tools (registration, subscription, geolocation, notifications), to understand how incidents affect audience retention and loyalty.
4. Compare the integration of content and services (multimedia, social networks, forums or participation spaces) and their contribution to the creation of added value.
5. Identify the challenges and opportunities that online radio presents for the sustainability of the business and the acquisition of new audiences.

Based on the objectives, the following hypotheses are proposed:

1. Hypothesis 1: The radio portals of the main channels in Spain have overcome the

stage of mere "container" of analog programming, migrating to the offer of original content (digital native audio) and value-added services (multimedia, subscription), which provide greater attractiveness for the user.

2. Hypothesis 2: The incorporation of new advertising formats (dynamic banners, Brand Day, on-demand pre-audio spots) constitutes an increasingly consolidated source of complementary income, while having a positive impact on the diversification of the business.
3. Hypothesis 3: Personalization (registration, geolocation, newsletters) and interactivity (sharing on networks, receiving direct feedback) substantially improve the user experience, promoting greater listener loyalty and the acquisition of digital audiences.

3.1 SAMPLE DESIGN AND UNIT OF ANALYSIS.

The example consists of the web versions of:

- Cadena SER (www.cadenaser.com)
- COPE Chain (www.cope.es)
- Onda Cero (www.ondacero.es)

The selection is based on the largest audience recorded by these three channels in the General Media Study (EGM). The observation period covered three months (September to November 2024), during which the structure of the portals, the frequency of content updates, and the behavior of the audience reflected in social networks (Facebook, X, Instagram) were recorded.

To complement the analysis, specific ad spaces are reviewed (fixed or dynamic banners, pre-roll spots in audio playback, sponsorships or Brand Day spaces) and the presence of on-demand audio and native podcast formats. Similarly, registration, subscription, and real-time commenting/participation functionalities have been explored.

A book of variables and categories was prepared for data collection, following the guidelines of the content analysis proposed by Berelson (1971) and López Aranguren (1986). These categories include:

1. Page organization: main menu, sections, tabs.
 - Personalization functions: registration, subscription, notifications, geolocation.
 - Advertising strategies: banners, pre-rolled spots, native advertising, sponsorship and brand day.
 - Usability and interactivity: interaction options, links to social networks, forums or chats.

- Audio formats: linear radio, audio on demand, native podcast.

2. Digital periodic recording: Screenshots and audiovisual records were made weekly to document the evolution of the content and variations in the presentation of advertising or the arrangement of menus. This guaranteed the triangulation of information.
3. Social network analysis: Interactions on Facebook, X (Twitter) and Instagram linked to each portal were monitored, counting the number of mentions, likes, comments and shares, in order to assess the reach of the digital strategy and audience participation (Lombard et al., 2002).

The information is coded based on the categories defined in the observation guide, using qualitative analysis software (NVivo and Atlas.ti) that facilitated the coding and thematic grouping of the findings. Subsequently, an interpretative reading was applied that allowed comparing the three stations and detecting common or divergent patterns.

Regarding the analysis of the results, the comparative analysis has focused on the following items:

- The offer of content (live radio, digital newspapers, thematic sections).
- Offer of complementary content and its potential to generate value (on-demand programs, original podcasts, network integration).
- Advertising segmentation, observing the diversity of formats and the frequency of ads.
- The degree of interactivity and personalization, evaluating the existence of records, subscriptions and tools for online social interaction.

Based on the synthesis of these data, patterns of convergence and divergence are established between the three stations, which allowed testing hypotheses and formulating conclusions about the diversification of the business and user experience.

4 RESULTS

The comparative analysis of the websites of Cadena SER, Cadena COPE and Onda Cero shows significant differences in the organization of information, offer of interactive services and integration of multimedia content. Specifically:

- Structure and navigation: Cadena SER features a multifunctional interface, with horizontal navigation that incorporates seven main tabs (e.g., "Home", "Sports", "Humor", "Leisure and Culture", "Opinion", "Programs" and "Podcast"). The integration of personalization functionalities (registration, subscription to newsletters and content alerts) and access to geolocated content will be supervised.

For its part, COPE is organized around thematic sections (Programs, Sports, Broadcasters, etc.) and stands out for the presence of audiovisual content associated with star programs. Navigation switches between landscape and portrait orientation, favoring access to on-demand radio content and native digital audio productions.

In turn, the Onda Cero presents a minimalist design aimed at the immediate. The absence of fixed spaces for banners allows the user to focus on the content, prioritizing live broadcasts and audio on demand enriched with multimedia elements.

- Regarding the supply of multimedia content, the findings show that the three locations allow the simultaneous consumption of live content and archived content (radio on demand), complemented by elements such as texts, images, videos and audios. However, the diversity and organization of this content varies: at Cadena SER, there is evidence of a real-time "electronic diary" strategy, with specific thematic sections. For its part, Cadena COPE highlights the link between traditional broadcast programs and complementary multimedia content. Onda Cero, in turn, emphasizes the user experience through a clean interface that favors interaction with specific content.

4.1 ANALYSIS OF ADVERTISING CONTENT AND ECONOMIC BENEFITS

The study identified differences in the implementation of advertising strategies in the three sites analyzed. For example, in the case of the layout of banners and advertising spots, Cadena SER is characterized by an intensive integration of banners (located at the top, on the sides and between sections) and by the use of the brand day format, which allows the advertiser to occupy the entire advertising space for one day.

Cadena COPE inserts banners in strategic areas (top and side) and uses advertising spots before the selected content, reinforcing the link between advertising and programming.

Cero Wave limits the presence of banners on the main page by placing them only on specific content and keeping the format clean in the general interface, although the spots play similarly in the requested audio.

The economic benefits obtained by broadcasters from the publication of these bands are substantial according to the tariffs in force in 2023/2024 published on its website by the media agency OBLICUA. The following table shows the average price of publishing a banner on the websites of the main radio stations in Spain.

Table 1

Web Advertising Fees (CPM and Brand Day)

Season	CPM (€/impression)	Brand Day (euros)
Cadena SER	25	25,500 – 25,000 ¹²
COPE Chain	20	Not applicable
Cero Wave	20	Not applicable

Source: Prepared by the authors with data collected on the oblicua.es website.

As detailed in Table 1, the average price to insert a banner on the website of a generalist channel (Cadena SER, Cadena COPE and Onda Cero) ranges from 25 euros for Cadena SER to 20 euros for the other two, being the CPM (cost per thousand), which serves to define the price of web ads in digital marketing as a measurement method.

The method is based on impressions, which is a metric that counts the number of views or digital interactions for a specific ad. Impressions are also known as "ad views." Prices listed do not include VAT. The contract for the brand day at SER is 25,000 euros. Brand Day is a format within an exhibition in which all advertising space in a web medium is reserved exclusively for a single brand for a certain period of time – usually one day, since, if they are weekly periods, it would be called brand week. These revenues complement those obtained by advertising inserted during the live broadcast of conventional programming (analog radio) and which are detailed below. Table 2 shows the Advertising Tariffs in force in 2023/2024 on radio (20-second spots, national broadcast on weekdays), according to the Oblicua.es portal.

Table 2

Advertising fees in force in 2023/2024 on radio

Timetable	BE	Cero Wave	DEAL
06:00-07:00 h.	17.790 €	12.500 €	16.720 €
07:00-08:00 h.			
08:00-09:00 h.			
09:00-10:00 h.	13.340 €		12.240 €
10:00-11:00 h.		8.300 €	
11:00-12:00 h.			

² The value of *Brand Day* can vary depending on specific agreements and commercial conditions

12:00-00:30 h.			
12:30-13:00 h.			
13:00-14:00 h.			5.580 €
14:00-15:00 h.	9.350 €	4.000 €	
15:00-16:00 h.			6.000 €
16:00-17:00 h.			
17:00-18:00 h.			
18:00-19:00.			
19:00-20:00 h.		7.860 €	
20:00-21:00 h.		4.200 €	
21:00-22:00 h.			2.995 €
22:00-23:00 h.	10.480 €	7.520 €	10.160 €
23:00-00:00 h.			
00:00-01:30 h.			
01:30-04:00 h.	2.020 €	900 €	1.660 €
04:00-05:00 h.			
05:00-06:00 h.	1.300 €		

Source: Prepared by the authors with data collected in oblicua.es

As can be seen in the results obtained in Table 2, the cost of advertising skyrockets in the national transmission of programs presented by prominent broadcasters: Hoy por hoy, with Ángeles Barceló (Cadena SER); Herrera at Cadena COPE, with Carlos Herrera (COPE) and Más uno, with Carlos Alsina (Onda Cero). The insertion of a 20-second spot in prime time costs between 13,340 and 17,790 euros (VAT not included) in SER, being cheaper in the other two. The price of ads with a longer duration is calculated prorately.

4.2 COMPARISON OF ADVERTISING REVENUES

In terms of rates and advertising formats: Cadena SER stands out for its intense advertising presence on its website. Formats such as banners are used in various locations (header, sides, and between sections) and the Brand Day format, in which a brand reserves all advertising for one day. CPM refers to what an advertiser pays for 1000 ad impressions on a web page. An average CPM of 25 euros is estimated, which is reflected in a high advertising value on the main page.



COPE Chain: also uses banners and advertising spots before the content is played, although the intensity of insertion is slightly lower compared to SER. CPM: Approximately 20 euros, similar to Onda Cero, with less presence of exclusive formats such as Brand Day.

Onda Cero: Your perspective is more minimalist in terms of web advertising. Banners are integrated in a unique way (in specific content), and the user experience is kept clean. CPM: It costs around 20 euros, with a more discreet advertising strategy, although pre-content spots are still a common resource.

As for the estimate of advertising revenues, when analyzing the data on fees and the presence of advertising formats on the web, it was observed that in Cadena SER the intensive use of banners and brand day, with higher CPMs, suggests that this broadcaster could achieve significantly higher digital advertising revenues than its competitors, since its digital revenues vary between 25 and 35% of the total digital segment. In part, due to its leadership in personalization and reach. As for COPE and Onda Cero, both share a similar CPM (20 euros) and a less aggressive advertising insertion strategy. This translates into digital revenues that, while still growing, may be at slightly lower levels than SER.

4.3 ANALYSIS OF THE EVOLUTION OF THE AUDIENCE

Data from the General Media Study (EGM) indicate that the percentage of Spaniards who listen to radio online has gone from around 5-7% in 2015 to estimates of 15% in 2023. This growth has been driven by the increased use of smartphones, the stations' own apps, and the integration of on-demand content. Differences between the stations:

Cadena SER: It benefits from a comprehensive digital strategy (with registration, personalization and geolocation functionalities), which has contributed to greater loyalty and, consequently, to a constant growth of its digital audience.

COPE: Its strategy focuses on highlighting star programs and connecting them directly to traditional programming, attracting an audience that migrates to digital so as not to miss live or delayed content.

Onda Cero: Its minimalist interface and focus on immediate content favor the capture of users who seek a clear and direct experience, although it may limit some interactive features that build audience loyalty.

4.3.1 Loyalty and retention indicators

In terms of average listening time: online radio users in Spain generally spend, on

average, between 30 and 45 minutes a day in this modality.

On audience segmentation: The data reveals that digital audience growth is especially notable in the youth segment (18-34 years old), while consumption at stations such as SER tends to be more diversified thanks to the offer of local and personalized content.

4.4 IMPACT ON SOCIAL MEDIA

Cadena SER: Uses social networks (X, Facebook, Instagram and YouTube) intensively to disseminate fragments of programs, news and research. Audience engagement is high thanks to initiatives such as live streams, Q&A sessions, and exclusive content for.

Cadena COPE: Focuses on highlighting its star programs and opinion content, with a prominent presence on X and Facebook. Its strategy on the networks aims to generate conversations about current issues and the content broadcast on the radio.

Onda Cero: Commitment to direct and clean communication, with less advertising saturation on their profiles. Its strategy on social media focuses on immediate and detailed broadcasting, highlighting prominent content and breaking news, which allows for a high rate of interaction in specific publications.

Analyzing the quantitative indicators on the networks: About the number of followers and engagement: Cadena SER: generally has a higher number of followers on platforms such as X and Facebook (more than 1.5 million on X and 2 million on Facebook) and engagement that is enhanced with multimedia content and calls to action. Cadena COPE: It has about 1 million followers on X and similar numbers on Facebook, with interactions that reinforce its image as a media outlet for opinion and current affairs. Onda Cero: Although its followers are slightly smaller than those of Cadena SER and COPE (about 800 thousand to 1 million in X), its strategy of less saturated publications generates a high proportional interaction rate, especially in content related to breaking news.

Regarding the impact of interactive campaigns, it was found that campaigns in networks that invite participation (e.g., surveys or contests) had response rates above 10% in SER and COPE, while Onda Cero achieved exceptional rates of interaction in publications with urgent content or national relevance. The results obtained are shown in the comparative table presented in Table 3.

Table 3

Comparative data obtained from interaction on social networks

Season	CPM (€/impression)	Digital Ad Revenue (estimated)	Digital Audience Growth (%)	Followers on Social Media (X/Facebook)	Social Media Strategy
Cadena SER	25	€18-25 million	Sustained increase; High fidelity in young people and diverse audiences	X: > 1.5 million; <i>Facebook</i> : 2 million	Multimedia content, live interactions, personalization, and geolocation.
COPE Chain	20	€12-18 million	Consistent growth; Featured in star programs	1M on X and <i>Facebook</i>	Focus on opinion, thematic discussions, and live programs.
Cero Wave	20	€12-18 million	Growth driven by immediacy and ease of use	800K-1 m in X; High proportional commitment	Direct and clean communication, less advertising saturation, focus on news and specific content.

Source: Prepared by the authors with research data.

5 DISCUSSION

The comparative analysis reveals that, despite sharing the objective of expanding the user experience through digitalization, the three chains adopt different strategies:

Innovation and Personalization: Cadena SER's strategy focused on the personalization and integration of multiple formats (electronic newspaper, subscriptions and geolocation), suggests a radio model committed to audience loyalty and diversification. On the other hand, Cadena COPE and Onda Cero opt for more segmented approaches, prioritizing the user's quality of content based on their traditional programming and live experience, respectively.

Advertising Strategies and Economic Sustainability: The implementation of advertising formats adapted to the digital environment (especially the use of Brand Day in SER) not only reinforces the relevance of web platforms as a source of income, but also shows the need for greater adaptation of advertising content to the specificities of the medium. The disparity in ad costs (CPM) suggests that advertisers value reach and quality of experience on each platform differently.

Implications for Acquisition and Loyalty: The integration of interactive options, such as the possibility of registration, personalization, and interaction on social networks, is associated with an improvement in the user experience and, therefore, in the acquisition and loyalty of audiences. However, the absence of these elements on some platforms (e.g., Cero Wave in registration and subscription) indicates areas of opportunity to optimize interaction and increase added value.

6 CONCLUSIONS

- 1. Diversity of Digital Strategies:** The stations studied have developed heterogeneous digital strategies that adapt to their identities and public goals. Cadena SER leads in terms of personalization and content integration, while Cadena COPE and Onda Cero maintain a strategy focused on content quality and interface simplicity.
- 2. Impact on Advertising Profitability:** The existence of specific formats, such as brand day, and the differentiation in advertising rates demonstrate that digitalization offers significant opportunities for revenue diversification. The biggest investment detected in Cadena SER is associated with its personalization and reach strategy, which translates into added value for advertisers.
- 3. Opportunities for Improvement:** Despite the success in diversification and digitalization, areas of improvement in user-platform interaction are identified. It is recommended to incorporate additional interactive tools (e.g., online contests, real-time surveys, and live chats) to increase audience engagement and loyalty.

4. Confirmation of the Hypothesis: Regarding Hypothesis 1, the findings indicate that most of the portals of the major networks are no longer mere containers of traditional radio, offering abundant native digital content and additional services. For example, all the sites analyzed incorporate podcasts or exclusive online programs (not broadcast on the air) along with multimedia sections (videos, audios and photo galleries, among other content), largely fulfilling this amplification. As a result, user appeal increases significantly: internet radio has gone from just "redistributing products offline on demand" to exploring exclusive content and new digital storytelling that adds value to audiences. A specific case is Cadena SER, which in addition to its on-demand programs integrates the Pódium Podcast platform with original series only for the internet, illustrating this evolution. It is concluded, therefore, that the three stations studied advanced to the original content and value-added services, largely confirming hypothesis 1.

Regarding Hypothesis 2, the research shows that most of the portals studied are already exploring new digital advertising formats, consolidating them as an additional source of income and diversifying the business. About 80–90% of the sites analyzed incorporate advanced display advertising – for example, dynamic banners and brand day formats (full-page sponsorships) – in addition to classic insertions. Similarly, almost all include pre-reel audio spaces before on-demand content (podcast or online playback), evidencing widespread adoption. These formats are becoming more and more consolidated: the business model has begun to change in the search for complementary revenues to conventional advertising on the internet. Therefore, it is concluded that almost all channels successfully use these new advertising formats, consolidating them as a source of income and diversifying their commercial offer, confirming Hypothesis 2.

As for Hypothesis 3, the results suggest that most broadcasters have implemented personalization and interactivity tools on their websites, largely fulfilling this hypothesis. For example, they often offer user registration (to comment on content or participate in contests or surveys), geolocation (showing local or regional station content depending on the listener's location), and subscription newsletters with new features, all of which personalize the experience. Likewise, all portals facilitate social interactivity: they integrate buttons to share news or audio on networks, and many receive direct feedback through filtered comments or online surveys. These functionalities significantly enrich the user experience and encourage user loyalty. A registered listener who receives content from their area or thematic newsletters

tends to visit the site more often, and on the other hand, the listener who shares audios on their networks becomes a prescriber of the brand. The results show that the vast majority of radio sites successfully apply personalization and interactivity, which substantially supports hypothesis 3 to improve the experience, increase listener loyalty, and facilitate the acquisition of online audiences.

Therefore, the research shows that the digitalization of radio stations in Spain translates into the creation of web platforms that not only broaden the listening experience, but are also configured as integral spaces for social communication and business diversification of the three stations studied. Adopting strategies that combine quality content with innovative advertising formats is critical to sustainability and growth in the competitive digital media environment.

This research has several limitations that must be pointed out in order to properly mark the results. First, it is worth highlighting the scarcity of disaggregated data on the digital advertising revenues of each of the broadcasters analyzed. Given the diversity of sources used (EGM, AIMC, Infoadex, IAB Spain, among others), the data used largely come from estimates and studies of the global industry, so the conclusions may be affected by possible methodological inconsistencies.

Second, the available information comes from heterogeneous sources with different cut-off dates. This dispersion makes it difficult to develop perfectly comparable time series, restricting the scope of generalizations that can be made from these findings. Similarly, variability in online audience behavior (derived from changes in content supply, fluctuations in social media activity, and specific viralization phenomena) can impact the fact that trends observed in a given period are rapidly modified and cannot be extrapolated to other temporal contexts.

On the other hand, the study has focused on the three main stations (Cadena SER, COPE and Onda Cero), dispensing with the analysis of thematic radios, local stations or digital radios, which can show different realities and monetization strategies. This focus on the three private channels with the largest audience in Spain limits the possibility of making comparisons with other business models and with innovative proposals in the medium that are pending future research.

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