

Article

Regulation and Business in the Origins and Development of the Mass Media: Radio Broadcasting in Spain

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Abstract: Wireless telegraphy ranks as the third groundbreaking 19th-century contribution to modern telecommunications, after the electric telegraph and the telephone. Initially of little interest, it gained widespread acceptance and became a commercial communication system that was fiercely fought for by the world's major powers. One feature of radiotelegraphy is broadcasting, which has developed with great impetus among the economic powers. In Western Europe, state control over broadcasting predominated from the first regulation in the 1920s until the 1980s. This was the case in Spain, where the State imposed a system of concession for the construction and operation of the network of stations by public tender. Finally, the development of broadcasting was inferior to that of the major powers but superior to that of other Mediterranean nations, as indicated by the sixth position it occupied in a selected list of countries. This study is performed to analyze broadcasting penetration from a dual perspective of supply/demand and the economic and business angle, mainly from primary sources.

Keywords: Radio broadcasting, Regulation, Business, Wireless telegraphy

1. Introduction

The use of the electromagnetic spectrum allowed the genesis of new technology (Lyll 2011). Wireless telegraphy constitutes the third ground-breaking 19th-century contribution to modern telecommunications after the electric telegraph and the telephone. Initially met with little interest (Marconi 1899), it became both a commercial communication system and the means of mass communication par excellence with a trait shared by the telephone¹.

An important step forward occurred when G. Marconi and Marconi Wireless Telegraph Co. Ltd., owners of the Marconi patents, together with Marconi International Marine Communication Co. agreed to assign to the Italian Government the free use of the then and future patents they might hold on radiotelegraph and radiotelephone apparatus. The agreement applied equally to Marconi's patented apparatus used by other companies. The signatories holding the patents undertook to inform the Government of the improvements made to the apparatus and the Government undertook to keep confidential all Marconi apparatus installed (Convenzione fra il Governo italiano e Guglielmo Marconi per l'impiego della radiotelegrafia e radiotelefonía in Italia e nelle colonie, 1915, Senato italiano).

Over the years, it conquered the sea communications, and the great world countries—the US, UK, Germany, and France—competed fiercely to become the powers that controlled global radio communication (the United States. Congress 1945; Balbi 2012; Shoup 1929)². Guglielmo Marconi's first patent registration in Spain dates back to 1896 and refers to number 20,041 for "improvements in the transmission of electrical impulses and signals using the apparatus described". Many others followed, registered in the name of the inventor, Marconi's Wireless Telegraph Company, Ltd, the company he created (Balbi, 2012), or both (Spanish Patent and Trademark Office).

Spain made its debut in the field of radiotelegraphy with tests and experiments carried out by eminent personalities, including Julio Cervera. This career military officer as well as scientist formed in 1902 the Sociedad Anónima Española Telegrafía y Telefonía sin Hilos, an ephemeral small company to manufacture devices and accessories of his system. Cervera placed it at the service of his

¹ Marconi summarised his first experiments, performed in his father's house, and the subsequent ones, and pointed out the apparatus used. See the developments in Cavina (2013). Remember the dreadful lament of Bell "I am sick of the telephone": Letter from Alexander Graham Bell to Mabel Hubbard Bell, September 9, 1878.

² Cavina (2013, pp. 125 and 131) spoke of the enthusiasm and perplexity of the Regia Marina, which then appeals to Marconi.

scientific projects, but it was liquidated after a few years (La Época 1902; Gaceta de Madrid [Madrid Gazette] 1906)³. Certainly, Spain was interested in the "knowledge and elucidation" of questions related to radiotelegraphy, which the country ascribed to the "inexcusable competence of the Telegraph Corps" (Madrid Gazette 1904).

The radiotelegraphic service in Spain started in 1908 as a state monopoly. Firstly, a specific Ordinance regulated the creation of a network, consisting of twenty-four stations—two first-class, five-second class, and seventeen third-class—with variable ranges (1,600, 400, and 200 km, respectively). Auctions for the private construction and operation of the radiotelegraph service were soon announced and the budgets were approved⁴.

I discuss broadcasting in Spain, which the New World Encyclopedia defines as the distribution of audio and/or video signals (programs) to a group of receivers ("listeners" or "viewers"), which can range from the general public to a relatively large audience. The problem of the new mass media has attracted the attention of international specialists, who have devoted numerous studies to it from different points of view and in various fields⁵. In Spain, the former covers technology and regulation, while the latter comprises the national, regional, and local, along with the business⁶. From a comparative point of view, it should be emphasized that the interest in mass communication exceeds that in other telecommunication systems, including the telephone. The article provides a view from a bilateral approach—supply and demand with a special focus—and the double perspective of economic and business history. It focuses on the initial stage into which the historical-legal process of Spanish broadcasting has been divided⁷. This article has into three main sections, covering broadcasting in the world, the beginnings and first implementation of broadcasting in Spain, and its role in times of war. The research is based on archive documents, secondary bibliography, and newspaper libraries.

2. Materials and Methods

Broadcasting is an important component of mass media in most countries of the world. Generally, a country's media systems reflect the economic, social, political, and even geographical conditions of the country⁸. The beginnings of broadcasting in its familiar sense such as the sending of signals to inform and entertain large numbers of people, go back to the early 20th century⁹. A leading role in the expansion was played by the United States as a pioneer (US Department of Commerce, 1929 pp. 7–8), Great Britain, Germany, and Sri Lanka. The discovery of shortwaves and the subsequent development of so-called super transmitters some five decades later provided an impressive potential for radio to eclipse all other forms of mass media (Wood 1992).

³ On the origins of radio, studied above all in its scientific aspects, see, among others, Balsebre (2001), Sánchez Miñana 2004 pp. 137–184; Sánchez Miñana (2004a) and the elaborate review by Lusa 2006, pp. 265–274; among the monographs of restricted territorial scope: Pérez 2020. Cervera contributed 30 % of the half million pesetas of capital; its smallness is reflected in the amount of assets (506,829 pesetas), in which the laboratory and the machinery and tools represented around 4 %. The secretary was Luis Figuerola Ferretty: Madrid Gazette, 162, 11/6/1903, p. 951. Marconi confessed to knowing Cervera but not the latter's system: Diario de Cádiz, 2/10/1902.

⁴ Royal Decree approving the attached Bases and Regulations for the establishment of the radiotelegraph service, GM, 25/1/1908, pp. 333–335.

⁵ Paoloni, Monteleone and Iannello 1995; Méadel 1994; Street (2002); Aitkin 1985); Lichty and Topping, eds. 1975; Méadel 1994. On the origins: Briggs, 1961; Maclaurin, 1949; Scannell and Cardiff 1991; Sterling and Kittross, 1978.

⁶ The literature ranges from Soria's classic work (1935) to the present day: Ezcurra (1974); Munsó 1980; Salillas, 1989; Guillamet 1994; Franquet 1994; Borràs (1996); Martí 1996; Vallés (coord.) (2000); Franquet (2001); Gil and Minobis (2003); Fernández (2005); Checa (2007), pp. 12–15; Orozco 2009; Morales 2010; Crespo (2016); Afuera 2019; Pérez 2020); Afuera, 2021.

⁷ Montes (2012, p. 713) considers five fundamental stages, marked by the following milestones: Regulation of 14 June 1924; Broadcasting Act of 26 June 1934; Decree of 14 November 1952; 1964 Medium Wave Transitional Plan; 1978 National Plan and the new FM stations.

⁸ Wells 1996, p. 1.

⁹ It was Reginald Fessenden who led the way in making a broadcast of signals transmitting voice and music on Christmas Eve 1906 to ships at sea. Charles Herrold of California sent transmissions in April 1909 and then a variety of different "call signs" when the Department of Commerce began regulating radio. Herrold coined the terms "broadcasting" and "narrowcasting", based on the ideas of spreading crop seeds far and wide, learned at home.

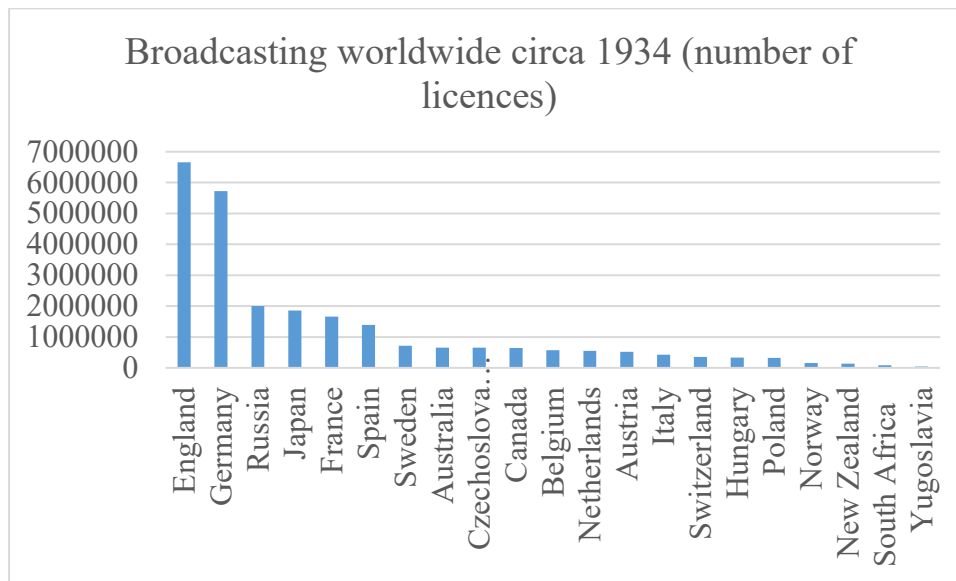


Fig. 1. Broadcasting worldwide circa 1934 (the number of licenses) (Soria 1935).

By 1934, the most advanced countries in broadcasting coincided largely with the economic powers. Apart from the USA, England and Germany were in the lead, followed at a distance by Russia, Japan, and France (Fig. 1). Smaller countries, including Latin America, were relatively pioneering. In Argentina, for example, the first radio broadcasting took place in 1920 and the architects were the same people who were responsible for the launch of radiotelegraphy, namely Enrique Telémaco Susini and a group of collaborators¹⁰. A matter to be considered due to the historic ties with Spain, the North American multinationals established an extensive private telegraph and telephone system in Latin America since 1903, which became a pioneer in radiotelegraphy, since in 1904. It built the first wireless station in Latin America with De Forest technology in Panama. In 1908, the company built a repeater station in Cuba, which was not only the island's first radiotelephone station but a key part of the world's first commercial point-to-point radio network. Five years later, United Fruit incorporated the Tropical Radio Telegraph Company as a wholly-owned subsidiary. Strongly supported by the US government, which feared possible European control of telecommunications in Latin America, it rapidly expanded its network and long dominated point-to-point radio communications in Central America and the Caribbean¹¹.

Precisely by anticipating the former metropolis, as so often with new technologies, Cuba was ahead in the field of broadcasting. Two different factors were combined to make this possible and shed light on the importance of certain key institutional and market drivers: the strength of the US electrical consortiums and the public entertainment complex in Havana. In the so-called artisanal stage, which lasted from 1922 to 1929, the amateur radio plant (1920) and the first radio station (1922) appeared. In this year, the Behn brothers' Cuban Telephone Company, a subsidiary of IT&T, inaugurated the station, equipped with state-of-the-art facilities and equipment, comparable to those in New York. It was a powerful but still experimental transmission until 1925 when it became a regular station¹². In the global arena, when measured by the number of inhabitants, the Nordic countries were at the top of the list of countries with the highest rate of broadcasting equipment (sets/1000 people) by 1934. It is striking that this was a common feature with fixed voice telephony, historically dominated by the Nordic countries (Fig. 2).

¹⁰ Merayo, 2007, p. 26.

¹¹ Eli (ed.), 1998, pp. 18–19; Drale (2010), pp. 195–21; Wilson 1947. pp. 153–167.

¹² Merayo, 2007, pp. 175-176. Altshuler (1997, 443–463) notes the use of spark-gap emitters.

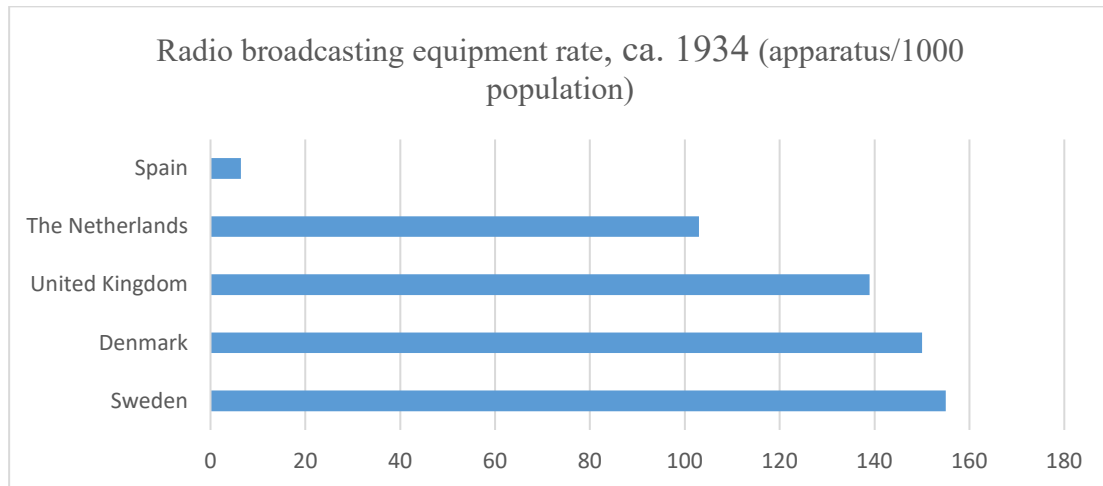


Fig. 2. Radio broadcasting equipment rate (apparatus/1000 population, ca. 1934) (Soria 1935).

3. Broadcasting in Spain: Regulation and Implementation

If the specialized international institutions agree on standards, in general, the exploitation patterns of the systems differ from each other. In the Western European nation-state, control over broadcasting predominated from the first regulation in the 1920s until the 1980s (Wells 1996)¹³. In Spain, as in general, broadcasting was initially in the hands of radio amateurs who communicated with homemade galena sets and, very rarely, with long-range spark plug stations, reserved for a select few¹⁴. The Government's specific intervention in radio broadcasting dates back to 1924, using a Royal Order approving the Regulations for the establishment and system of private radio stations, presented by the National Conference on Wireless Telegraphy. The provision of 14 June 1924 organized radio broadcasting under a regime of freedom, using regulated concessions. In any case, in the event of failure of this system, it provided for the possibility of replacing it with another system of exclusive concession or monopoly¹⁵.

Three years later, the ineffectiveness of the system led to the reorganization of the constitution of the Technical and Inspection Board for Radiocommunication, which, in addition to the powers entrusted to it by the legislation in force, added others of a special nature, referring to the organization, establishment, and operation of radiocommunication services in their generic aspect and the more specific issue of broadcasting services.

The Technical and Inspection Board reached a series of conclusions. First, it thanked private initiative for the work carried out to provide Spain with broadcasting facilities in a hard stage. Secondly, it acknowledged the need to replace the current system with one that would bring together greater efficiency and modernity in the facilities along with greater public and social convenience. Thirdly, the fourfold function of broadcasting as a means of communication, an instrument of public security, an organization for the promotion of culture, and an auxiliary of the country's economic interests imposed a change of path. More specifically, broadcasting had to be established as a public service, and its exercise proclaimed as a public function, being reserved to all intents and purposes to the State. Fourthly, if it were found to be impossible for the State to carry out and fulfill the broadcasting services in practice, the Board recommended a system of delegation in favor of a purely Spanish institution, company, or society with sufficient guarantees and under the active supervision of the State.

In the absence of the circumstances envisaged in Article 47 of the regulations, the Government could renounce the consortium envisaged and choose freely between the regime of direct State exclusivity or that of delegated exclusivity. Broadcasting stations should guarantee a universal and indiscriminate service—available to the whole nation and the greatest number of owners of modest receiving sets—as well as a technically advanced service. In short, the Radiocommunication Technical and Inspection Board proposed the organization, establishment, and operation of broadcasting services. The Royal Order of 4 March 1927 advocated a

¹³ For the European context, see the outstanding work of Fickers (2016).

¹⁴ *La Libertad*, 1.249, 27 March 1924. The crystal detector, used by generations of radio amateurs as well as by commercial communication companies, consisted of a small galena crystal that is touched with a thin wire or "cat's whisker": Inglis, 1990, p. 44. As time went by, radio amateurs were able to have guides, such as the *New Illustrated Catalogue of Radiotelephony*, which, together with magazines - *Antenna*, for example - helped them to assemble apparatus: *Antena*, April 1931.

¹⁵ *Madrid Gazette*, 167, 15/6/1924, pp. 1,325–1,328. See also, among others, Peinado (1998), pp. 173–192.

new formula for the organization of radio broadcasting and public service that the State should govern and direct¹⁶. The gap between the government's verbal positions and its achievements is more than evident. The authorities were in line with the widespread recognition of the importance of broadcasting in modern life, its role as an instrument for the dissemination of culture, and its consequent influence on the formation of the national spirit. The reorganization of the sector led to a reversal of previous decisions and a call for private investment. On the one hand, it was declared null and void the provisional concession granted to the S. A. Radio Ibérica in October 1924 to operate a station in Madrid, which had been inactive for months¹⁷. The same treatment was given to the concession granted to Vicente de Goyeneche Garamendi towards the end of July 1925 to set up a radio broadcasting station in Madrid, with the call sign EAJ-12 and the name Radio Madrileña. The station obtained the administrative concession with the call sign EAJ-6, after Radio Barcelona, Radio España of Madrid, Radio Grao Valencia, Radio Castilla, and Radio Sevilla (Table 1). It then reorganized and improved its programming with the inclusion of a theatre criticism section and a musical program for children¹⁸.

On the other hand, administrative action gave birth to the National Broadcasting Service, consisting of the infrastructure - a network of broadcasting stations in eighteen cities - and the entities involved - the Economic Administration of the Service, the Technical and Inspection Board of Radiocommunication (Junta Técnica e Inspectoría de Radiocomunicación), and a Welfare Commission under the Board¹⁹. Authorization for the Minister of the Interior, through the Directorate General of Telecommunications, followed the creation of the body - the National Broadcasting Service - to put out to tender the supply and installation of the radio stations of the State's national broadcasting network. This was an acknowledgment of the financial inability to “bring to the budget” the amounts required to set up the planned national network of stations²⁰. In a different approach, and keeping the differences of size in mind, the Post Office and the major companies - Marconi, Metropolitan-Vickers, General Electric Company, Radio Communication Company, Western Electric Company, and British Thomson-Houston Company—agreed on a single service, which materialized in 1922 with the creation of the British Broadcasting Company (BBC), the undisputed leader in the sector²¹. It is clear to no one that this was a gigantic vertical integration movement between industry and service or an extension of the value chain, one of the essential characteristics of the Bell system in the case of the telephone.

The sequence continued with the provision for the tendering of the installation and operation of the stations of the broadcasting service network and, later on, the tendering of the supply and installation of the infrastructures and the leasing of the regular and daily broadcasting of artistic programs and radio advertising²². A first postponement appeared to give the prospective bidders time to study the scope and characteristics of the plans submitted. Shortly after the expiry of this postponement, the competition was

¹⁶ Madrid Gazette, 195, 14/7/1927, pp. 267 and 278–279.

¹⁷ A capital increase backed by the four big banks -Hispano Americano, Bilbao, Español de Crédito and Central- and the consequent organisational restructuring did not produce the expected results. Faced with the difficulties, a rapprochement between the Compañía Ibérica de Telecomunicación and the Sociedad de Radiotelefonía Española led to the creation of the new entity Radio Ibérica S.A. The De la Riva brothers designed, built and installed for Radio Ibérica the 500-watt station with a counter-antenna radiating system and plate modulation, which was tested in mid-1923. It could be tuned both in Madrid and in the surrounding towns, even with a galena set. Tests with valve sets succeeded in transmitting over long distances, i.e., to Spanish cities and foreign centres (Europe and Latin America): Salillas, 1989, pp. 27, 29 y 33.

¹⁸ Madrid Gazette, 291, 18/10/1927, p. 358; see also the journalistic work of Salillas 1989, p. 68. The initial EAJ-12 designation for Radio Madrileña was due to its status as heir to Radio Asturias: Faus (2007), p. 331; with a wavelength of 294 meters, Radio Madrileña carried out the first tests with a concert of music and singing: *El Liberal*, 26/11/1926, p. 4; *La Libertad*, 26/11/1926, p. 7. The provision obliged the complete dismantling of the antenna of this installation within fifteen days. On 6 October 1924, the Directorate of Communications authorized Radio Castilla to set up radio station EAJ4, which was built by Antonio Castilla himself and inaugurated towards the end of that month: *Correo de la mañana*, 3,624, 20 October 1925; Ezcurra, 1974, p. 178.

¹⁹ Madrid Gazette, 208, 27/7/1929, pp. 691–693; 291, 18/10/1927, p. 358. Stations in Madrid, Barcelona, San Sebastian, Coruña or Vigo (Galicia), Zaragoza, Valencia, Seville, Oviedo, Salamanca, Cadiz, Cartagena, Almeria, Valladolid, Malaga, Bilbao, Ciudad Real, Palma de Mallorca and Tenerife or Las Palmas; in addition to the above Network, a transmitting station will operate in Madrid.

²⁰ Insistence on the conviction that Broadcasting is an indispensable element of civilization, embracing all aspects of human life: Madrid Gazette, 106, 15/4/1932, p. 346.

²¹ Street (2002), pp. 27–28.

²² Madrid Gazette, 211, 30/7/1929, pp. 786–789; 106, 15/4/1932, pp. 349–351; the deadline set for the Technical and Inspection Board of Radiocommunication to rule on the resolution of the Tender for the National Broadcasting Service was extended for a while: Madrid Gazette, 127, 7/5/1930, pp. 837–838. In the significant case of Norway, the government included in 1933 broadcasting into the activities run by the public administration. The infrastructures of private entities were taken into public ownership and a national company - the Norwegian State Broadcasting System - was created as a monopoly: Ezcurra (1974), p. 120.

suspended until the Technical and Inspection Board had studied the proposals in greater detail. Finally, on 10 March 1930, the four proposals for the tender were presented and opened by the Technical Board, which was empowered to deliver its opinion in sixty days.

The first proposal was formulated by Empresas Radioeléctricas, which committed a capital of twenty million pesetas and offered a foreign technical guarantee—Marconi, General Telegraph, Thompson and R.C.A.—together with the financial backing of Spanish large banks—Banco de Vizcaya, Bilbao—and an industrial company—Industrias Eléctricas. The second was presented by the Sociedad Anónima Española Fomento Nacional de Radiocomunicaciones, technically supported by a Dutch company selling receiving equipment—N.V. Philips Radio—and with the financial backing of a group of banks—the Banco Español de Crédito, Banco de Cataluña, Banco Hispano and Banco Colonial. The third in the race, Pablo Quero Sánchez, proposed a capital of some ten million pesetas. Unión Radio, for its part, increased the commitment to fifteen million pesetas and the technical guarantee of Telefunken, Standard, Marconi, Société Française Radioélectrique, associated of Compagnie Générale de Télégraphie sans Fil, Acumuladores Tudor and Compañía Telefónica Nacional de España. The competition centered on the proposals of Fomento Nacional de Radiocomunicaciones and Unión Radio, undoubtedly the most elaborate one²³. In 1932, an order postponed the tender for the supply and installation of the state broadcasting network without precise deadlines, and the project was finally buried²⁴.

Spain had failed to satisfy the demand of a potential middle-class clientele with the capacity to consume leisure and culture²⁵. The performance of the private enterprise, represented in a pre-eminent way by Unión Radio, came to replace the action of the authorities and became the emblem of the media. Unión Radio sought to replicate on a national scale the consortium of companies that promoted the Asociación Nacional de Radiodifusión (National Broadcasting Association) and the Cooperativa Radio Barcelona. What was at stake was nothing more or less than dominance in the incipient radio sector. From mid-1924, the Compañía Nacional de Telegrafía sin Hilos, the leader in the sector, joined forces with the other manufacturers of radio equipment—AEG, Telefunken, Radiola (Omnium Ibérico Industrial), General Electric through SICE, IT&T and Teléfonos Bell Western Electric. A few months later, this core group gave Unión Radio definitive backing. There were four hardware companies—Sociedad Española de Acumulador Tudor, Compañía General Española de Electricidad (Lámparas Metal), Electrodo, and the brand new private monopoly of the telephone service - Compañía Telefónica Nacional de España, a creature of IT&T. Its director was Valentín Ruiz Senén, one of the supporters of radio broadcasting.

The inspiring principle was the provision of the service on a monopoly basis, which, in the end, came up against two major stumbling blocks. The first was the repeated refusal of the state to grant the company the national broadcasting service, and the second was the constant problems that plagued some of the promoters -Urgoiti- in the management of Radio Barcelona and the control of the Catalan radio market²⁶. For its part, the meager financial resources at its disposal and the lack of official financial support did not allow it to have technical resources on a par with other countries. At the same time, the scarcity of personal contributions to support the program. Despite the efforts made to raise funds, the limited advertising possibilities aggravated the

²³ Ventín (1986); *El Heraldo de Madrid*, 27/3/1930, p. 12. Unión Radio planned two initial stations in Madrid, one of 18 kilowatts medium wave and another of 90 kilowatts long wave, which could be heard with galena in almost all of Spain; very powerful stations of 10 to 20 kilowatts in three large cities -Barcelona, Valencia and Seville- and another in Bilbao; a high-power station between Vigo and Orense and local stations of 1/2 to 2 kilowatts in eleven cities in the North -La Coruña, Oviedo and San Sebastián-, the centre -Valladolid-, the logistic and communications hub of Zaragoza, the Mediterranean coast -Murcia-, Andalusia -Málaga, Granada and Córdoba- and two islanders -Santa Cruz de Tenerife and Las Palmas. Antonio López Roberts acted on behalf of Fomento Nacional de Radiocomunicaciones whose representative was the engineer Luis Bosch y Labrús, related to the French branch of the Bourbons and president of Fomento del Trabajo Nacional, the main Catalan employers' association: *Servicio nacional de radiodifusión* (1930); *La Libertad*, 11/3/1930, p. 11; *La Voz*, 10/3/1930, p. 3; *El Imparcial*, 11/3/1930, p. 3; *El Sol*, 11/3/1930, p. 4; *Ondas*, 15/3/1930, p. 3; *La Gaceta literaria*, 1/9/1930, 89, p. 16; Faus (2007), p. 358.

²⁴ *Madrid Gazette*, 161, 9/6/1932, p. 1,780

²⁵ Afuera, 2019, pp. 74–75.

²⁶ Deed of incorporation of Unión Radio, 16/12/1924, notary Anastasio Herrero Muro; Ruiz Golluri Joaquín, *Historia verídica de la radiodifusión en España desde su iniciación hasta hoy*, typed document, personal archive Ricardo Urgoiti, Residencia de estudiantes, RU/7/33, quoted in Fernández 2020 pp. 59, 62-63. Faus (2007, p. 262) dates the first meeting in July 1924, sponsored with an international approach by two engineers from the Compañía Nacional de Telegrafía sin Hilos who were involved in the commercialization of equipment and material with the armed forces. The agreements included the formation of a company to operate the broadcasting service in Spain, the subscription of 50,000 pesetas from each partner together with the commitment to contribute to the company a monthly minimum of 1,000 pesetas in the event of a deficit for a period of not less than 2 years and the use of a special Marconi transmitting station for 6 Kw broadcasting services. Telefunken was represented by its Spanish subsidiary Omnium Ibérico Industrial; SICE was the delegate in Spain of the American company RCA: Afuera, 2019, pp. 74–75 y 2021. IT&T appointed Antonio Fontán as a delegate in Unión Radio, which gave him control of Radio Sevilla: Cebrián 2016 [sp].

weakness of broadcasting in Spain. In contrast, not a few European countries had already solved their problems in the second half of the decade.

The development of radio broadcasting in Spain was lower than that of the major powers but higher than that of other Mediterranean countries, as indicated by its sixth position in the list (Fig. 1). Between 1931 and 1933, the number of radio receiver licenses and the net amount of fees more than tripled²⁷. Within Spain, there were notable inequalities in the extent of broadcasting. Official data, possibly downwards, allow us to establish up to six major groups of provinces according to the equipment rate, expressed by the number of licenses/1000 inhabitants. Five provinces exceeded the national average with rates between 18/1000 and 7.4 (Madrid, Barcelona, Valencia, Menorca, and Zaragoza). Four other territories exceeded 5/1000 inhabitants (Ceuta, Mallorca and two Catalan provinces - Gerona and Lérida), nine were between 3 and 5/1000 and 13 between 2 and 3/1000, and twenty between 1 and 2/1000 inhabitants. The list with a rate of less than 1/1000 comprised eight territories, half of which were in Galicia, which thus lagged behind the Spanish regions in broadcasting²⁸.

Broadcasting, originally restricted to the elite of electrical entrepreneurs, engineers, and technicians, became a mass medium in the 1930s, including celebrities²⁹. The Second Republic turned the media into a powerful instrument of information, propaganda, and education. For this reason, it intervened in an ambitious and revisionist way in its regulation. It set out to fill the gap of radio broadcasting in its infancy—as the directors of the Telegraph Corps defined it—in Spain in the shortest time. To this end, he entrusted a commission with the definitive project for the establishment of a national broadcasting network, before submitting it to the Cortes, the Spanish Parliament. The project envisaged a powerful national station in Madrid, probably longwave, to cover the whole of Spain. This central station and six regional stations, each of about 20 kW power and the latest generation, would form the general network. To unify the programs throughout Spain, the possibility of linking these stations using telegraph cables, with special circuits for radiotelephony, was studied. The operation of these services would be the responsibility of the State through the Telegraph Corps. Although the artistic services would be leased, three revenue-raising concepts would be established, namely advertising, licenses or listener fees, and a tax on the price of radio-receiver equipment. Requests by seven Spanish and foreign companies to extend by one month the deadline to bid for the tender for the supply but installation of the State broadcasting network were rejected. The Administration considered the deadline to be sufficient since the world's most important broadcasting station construction companies had already studied the technical aspects in their laboratories. There was the precedent of a similar tender held in Spain at the end of 1929, which, although declared void, allowed the companies to accumulate the knowledge needed to prepare a good project of this type³⁰.

Finally, the tender for the supply and installation of state broadcasting stations and the leasing of the regular broadcasting of artistic programs and radio advertising was canceled³¹. Upon completion of its mission, the Commission for the Study of Broadcasting was dissolved and another was appointed to make up of chiefs and officials with the mission of drawing up the plan for the stations of the national network. Their location, power, frequency, and other technical circumstances corresponded to each station and drew up the Regulation for the application of the projected Law and the proposal for the tender for the supply and assembly of the stations³².

²⁷ Soria (1935), p. 76.

²⁸ Soria (1935), pp. 55–59. The scarcity of data in Spain contrasts sharply with the case of the USA, which had exhaustive lists of amateur radio stations, with details of owners, location and power: United States. Dept. of Commerce. Radio Division, 1924 and 1930.

²⁹ Franquet (2001). Among the idols, the transformer and ventriloquist Josep Torres i Vilalta (Toresky), buried in the smell of crowds: AFB4-212, Arxiu Fotogràfic de Barcelona, AFB4-212, 1/1/1941.

³⁰ Applicant companies: Standard Eléctrica, S.A.; A. E. G.; Ibérica de Electricidad; Sociedad Ibérica de Construcciones Eléctricas; Telefunken; Unión Radio, S. A. and Sociedad Española Radio-Eléctrica: Madrid Gazette, 143, of 22/5/1932, p. 1.373. Telefunken advertised itself as "the non plus ultra of radio", holder of the "greatest experience. The most modern construction": Antena, 1/1/1930; 1/3/1930. Sectors of the press, between gratitude to the government and dismay at the bad situation, demanded solutions: Antena, 28, September 1930.

³¹ Advertising was to disappear when the capital invested in the installation was amortized; the tax on the price of radio-receiver equipment was to be around 5 per cent: Interview with the Director General of Telecommunications, Miguel Sastre, Orbe, 1 October 1932, p. 24.

³² The chiefs were to draft the regulations and the administrative part of the competition and the officials were to draw up the general plan for the establishment of stations and the optional conditions of the competition: Madrid Gazette, 25, 25/1/1934, p. 646.

Table 1. Broadcasting stations in Spain, 1934 (Soria 1935).

Station	Location	Broadcaster
EAJ-1	Barcelona	Unión Radio
EAJ-2	Madrid	Radio España
EAJ-3	Valencia	Estado-Unión Radio
EAJ-4	Santiago de Compostela	Unión Radio
EAJ-5	Sevilla	Unión Radio
EAJ-6	Pamplona	Ismael Palacio
EAJ-7	Madrid	Unión Radio
EAJ-8	San Sebastián	Unión Radio
EAJ-9	Málaga	Ricardo Puente
EAJ-10	Zaragoza	Radio Aragón
EAJ-11	Reus (Tarragona)	Juan Díaz
EAJ-12	Alcoy (Alicante)	Ayuntamiento
EAJ-13	Palma de Mallorca	José Fuster
EAJ-14	Castellón	Ismael Palacio
EAJ-15	Barcelona	Radio Asociación Cataluña
EAJ-16	Granada	Eduardo Montero
EAJ-17	Murcia	Arsenio Sánchez
EAJ-18	Logroño	Ismael Palacio ³³
EAJ-19	Oviedo	Arturo Cima
EAJ-20	Sabadell (Barcelona)	José Corbella
EAJ-21	Melilla	Francisco Lima
EAJ-22	Huesca [Aragon]	Ismael Palacio
EAJ-23	Gandía (Valencia)	Enrique Peralta
EAJ-24	Córdoba	Federico Algarra
EAJ-25	Terrassa (Barcelona)	Radio Club Terrassa
EAJ-26	Antequera (Málaga)	Joaquín Ruiz
EAJ-27	Burgos [Castile]	Juan Mata
EAJ-28	Bilbao	Daniel Urquijo
EAJ-29	Alcalá Henares (Madrid)	Juan M. A. Lorenzana
EAJ-30	Onteniente (Valencia)	Salvador M. Lluch
EAJ-31	Alicante	Juan Valero
EAJ-32	Santander	Luis Pérez Vicente
EAJ-33	Tarragona	Timoteo Zunuy
EAJ-34	Gijón (Asturias)	Ramón M. Fernández
EAJ-35	Villanueva-Geltrú (Barcelona)	José M ^a Cucurella
EAJ-36	Játiva (Valencia)	José Carrascosa

³³ Radio Rioja, owned by Ismael Palacio, was inaugurated on 27 August 1933: Antena 64, 9/1933.

Table 1. Cont.

Station	Location	Broadcaster
EAJ-37	Linares (Jaén)	Alfonso Quiles
EAJ-38	Gerona	Ramón Pérez
EAJ-39	Badalona (Barcelona)	Juan Vidal
EAJ-40	Pontevedra [Galicia]	Enrique Vázquez
EAJ-41	La Coruña [Galicia]	Francisco Hervada
EAJ-42	Lérida	Jaime Rosquelles
EAJ-43	Santa Cruz de Tenerife	J. Luis Camps
EAJ-44	Albacete	Antonio Cuevas
EAJ-45	Denia (Valencia)	José Marsal
EAJ-46	Ceuta	Mas, Bernaola y Cía.
EAJ-47	Valladolid	Manuel Mata
EAJ-48	Vigo	Santiago Montenegro
EAJ-49	Toledo	Pedro Pastor
EAJ-50	Las Palmas	Pedro Pastor
EAJ-51	Manresa (Barcelona)	Fernando Boixadós
EAJ-52	Badajoz	Mariano Ramallo
EAJ-53	Elche (Alicante)	José Garrigós
EAJ-54	Alcira (Valencia)	Enrique Peralta
EAJ-55	Algeciras	José Laffarga
EAJ-56	Salamanca	Manuel Martín
EAJ-57	Orense	Ramón Puga
EAJ-58	Jerez de la Frontera (Cádiz)	Guillermo Ruiz
EAJ-60	Almería	Miguel Soto
EAJ-61	Jaén	Juan Delgado
EAJ-62	Vitoria	Francisco Hernández
EAJ-63	León	Ramón Beberido
Station	Location	Broadcaster
EAJ-64	Segovia	Aurelio Hernández
EAJ-65	Ciudad Real	Empresas Radioeléctricas
EAJ-66	Tudela (Navarra)	Aurelio Hernández
EAJ-67	Talavera de la Reina (Toledo)	Empresas Radioeléctricas
EAJ-68	Lugo [Galicia]	Empresas Radioeléctricas

By 1925, there were seven broadcasting stations in Spain. Most of them named after the city in which they were located—Barcelona, Valencia, Seville, and San Sebastián - and by the operating company—Unión Radio, Radio España, and Radio Ibérica³⁴.

³⁴ Ondas, 28/6/1925. Radio Ibérica was one of the potential participants in the call for the national wireless telegraphy conference: La Correspondencia de España, 27/11/1923, 23,768, p. 5; La Industria nacional, 30/11/1923, p. 14; Salillas, 1989. Newspapers reported simultaneously the abundance of radio amateurs - the "fishermen of waves" - in Madrid and the disorientation about programming: La Libertad, 4/3/1924, p. 2; Electra, 10/5/1924, p. 8. The origin of Radio Catalana goes back to the entrepreneurial activity of the Heusch family, which had

As the main one, Radio Barcelona was created in 1924 by the Asociación Nacional de Radiodifusión from the nucleus of a press, the journal Radiosola—founded by a scientist—Josep M. Guillén García, a science graduate from the Sorbonne University in Paris—and a printer and radio enthusiast, Eduard Solà. Five leading electrical devices and equipment companies took part in the National Broadcasting Association—Sociedad Anglo Española de Electricidad (Royston St. Noble), Sociedad Ibérica de Construcciones Eléctricas, Viuda y Sobrinos de Prado, representative of the Swedish company Ericsson, Teléfonos Bell SA and Industrias Radioeléctricas, together with individuals and houses from the sector—J. Ganzer, J. López Aznar, Albiñana, Esteva Marata, Rifà Anglada, Exclusivas Lot, Hellensense, Luis Gaumont, P. Pujol and Pathé Explotación—and the journal Radiosola.

One of the Association's main objectives was to involve radio broadcasting businessmen and traders in the promotion of activities favorable to the introduction of radio broadcasting following the approval of the regulations of February 1924. To achieve this purpose, the members of the association raised the necessary funds to finance the setting up of the first regular radio station in Spain: EAJ-1 Radio Barcelona³⁵. Manufacturers participated in the operation with contributions of 1200 pesetas non-refundable and others with a monthly fee of 1000 pesetas. The association had several categories of members. The Sociedad Cooperativa Radio Barcelona held ownership of the station, while the EAJ1 callsign under which Radio Barcelona broadcast belonged to the Asociación Nacional de Radiodifusión. The precarious financial situation of Radio Barcelona in 1926 made it difficult to set up a new station and forced the broadcaster to enter into negotiations with industrial entities to seek financial support. The merger agreement with Unión Radio in November 1926 ended the Sociedad Cooperativa Radio Barcelona and gave way to Unión Radio Barcelona, but the former owners became members of the Unión Radio network³⁶. This is the moment to vindicate the role of the civil institutions in the promotion of broadcasting and radio stations. From 1922 onwards, radio clubs and private homes had the first tube receivers to tune the few stations coming from abroad, including London, Lyon, and Paris. Radio Club España, founded in 1922, organized radio auditions and scientific film screenings and it is considered a predecessor of the Unión de Radioaficionados Españoles (Spanish Amateur Radio Union) (Diario palentino 1999; La Voz 1923; El Diario de Ávila 1920).

For the stations, a group made up of technicians, liberal professionals, members of the military, and officials from public institutions created Radio Club Valencia on 23 June 1924 at a meeting called by a management committee and attended by a large group of amateurs. In substance, the idea emerged from the meeting to acquire a radio station following a competition among the construction companies, accepting the one that offered the most advantageous conditions (Acta de constitución del Radio Club Valencia, Biblioteca Valenciana Nicolau Primitiu, AEVB C-01/018). The government authorized the transfer to Valencia of Radio Catalana EAJ-13, a Barcelona station owned by Unión Radio. This license was exchanged for EAJ-3, based in Cádiz and also owned by Unión Radio. The technical know-how accumulated in Radio Barcelona and the state organizations was combined in its start-up. The driving group, chaired by Enrique Valor Benavent, was grouped in the Peña Radio Valencia, which even broadcast for a few months from the Ateneo Mercantil in Valencia. The state engineer Valeriano Gómez Torre was the technical director of the station, which opened on 10 September 1931 (Vallés, coord., 2000). On 23 June 1931, the Ministry of Industry declared the authorization granted to Unión Radio to use the station in El Grao (Valencia) to be definitively lapsed, set two months for the cessation of the service, and proposed to that entity to conclude a new agreement to resume broadcasting in Valencia (Madrid Gazette, 172, de 20/6/1936, pp. 2528–2529). In a more modest example, Radio Terrassa was designed and opened in 1932 by Radio Club Terrassa (Table 1), owner of the concession E. A. J. 25, in charge of organizing the daily broadcasts (Franquet 2001).

Unión Radio installed in Madrid the new radio broadcasting station E. A. J. 20 (one and a half kW in antenna and 410 m wavelength), whose tests began immediately. The station was the first of a network of stations of various systems that was to cover the whole of Spain. As an expression of the good relations with Radio Barcelona, the top executives of the station and the National Broadcasting Association were invited to the first experiments³⁷. Seven years later, after the attempt to create a national network of

several artificial pearl businesses in Barcelona and Mallorca; to unite their establishments, the Heuschs ordered two radio communication systems from Compañía Ibérica, whose vice-president was Rufino de Orbe. The changes in the structure of telecommunications, especially the creation of the CTNE, led to a shift towards the commercial exploitation of radio.

³⁵ The Asociación Nacional de Radiodifusión (National Association of Radio Broadcasting) was forced to respond to accusations; it firmly rejected the interference attributed to Radio-Barcelona and undertook to solve the humming noise that some listeners had complained about with appropriate technical means (latest generation static microphone): *La Vanguardia*, 18 August 1926, p. 4. The International Radio Union was formed in 1925: Lyall 2011, pp. 45–70.

³⁶ The annual agreement provided for the continuity of Radio Barcelona's broadcasts, and a five-member committee was set up to guarantee this, three of whom were representatives of Radio Barcelona on the board of Unión Radio: Franquet 1994, p. 7.

³⁷ *La Vanguardia*, 12/6/1925, p. 15. The expansion of Unión Radio owed much to the use of its own orchestra's musical auditions. As an instrument of propaganda, it donated a wireless telephone receiver to the Madrid Provincial Council for the leper hospital: *La Vanguardia*, 30/7/1925, p. 10.

radio stations had been aborted, the decree of 8 December gave way to small local broadcasting stations³⁸. Expectations of profit and the lack of this facility turned the decree into a powerful stimulus, and in little more than a year, a truly national network was created that was self-financing and covered the entire peninsula, North Africa, the Balearic Islands, and the Canary Islands³⁹.

Of the sixty-seven existing stations in 1934 (Table 1), eight were bound by the decree of 14 June 1924—EAJ1, 2, 3, 5, 7, 8, 15, and 19—and the rest by the provisions of the decree of 8 December 1932. To assess the local character of these stations, in 1934 a minimum distance—30 km—from another station was established as a requirement for new concessions, except in cases where it was demonstrated that the operation of the requested station could coexist at a shorter distance without disturbing other stations⁴⁰. Regarding the scope of the stations, most of them were promoted by local personalities and associations, and companies. In the sector, *Empresas Radioeléctricas*, the same ones had signed up to a national broadcasting network.

Several features complete the picture. The first concerns a certain tendency towards concentration from the outset, visible in the presence of the same licensee in several locations, as occurred with several companies—*Unión Radio* above all and *Empresas Radioeléctricas*—and individuals who were awarded up to four concessions as happened in Logroño, Castellón, Pamplona, and Huesca with Ismael Palacio Bolufer, a photojournalist in Zaragoza. The second concerns the frustration of the hopes of quick profit placed in the opening of radio stations, which had been in favor of an initial expansion of this medium. On the contrary, economic difficulties drove several investors out of the business—the early disappearance of *Radio Malaga* and the subsequent disappearance of *Radio Almeria* - and accentuated concentration through acquisitions. In 1926, the newly created *Radio Madrid* absorbed *Radio Barcelona*. *Unión Radio* bought *Radio Cádiz* and the two Seville stations, which merged into a single station with an audience throughout lower Andalusia, *Unión Radio Sevilla*⁴¹. A third outstanding aspect in the infancy of the new mass media was the inter-company collaboration or transfer of knowledge. In mid-1925, the first tests were successfully carried out on the *Radio Catalana* station built under the supervision of *Radio Ibérica* technicians, the La Riva brothers. As the directors of the new company, they installed the second of those in Barcelona. For the first time in Spain, a radiotelephone dialogue was established between two nationally built stations: the aforementioned station and *Radio Ibérica*⁴².

In the technical field, a Joint Board was given the task of studying disturbances of all kinds produced in broadcast receivers and proposing practical means of eliminating or attenuating them⁴³. In the sphere of education, the Republic sought to provide first-level educational establishments with this medium. To this end, a call for tenders was issued for the supply of 400 radio receivers for national primary schools⁴⁴.

³⁸ Madrid Gazette, 348, 13/12/1932, p. 1.829.

³⁹ Consider the role of colonial Africa in the expansion of Italian radiotelegraphy: Cavina (2013), p. 155.

⁴⁰ Soria (1935), pp. 41 and 45.

⁴¹ Checa 2007, pp. 12–15; Ezcurra (1974) p. 120. Technical details of *Radio Barcelona*'s first low and high frequency installations: first 200 watt transmitter, Marconi type antenna, carbon microphones, acoustic gramophone with built-in carbon microphone for broadcasting music recorded on discs. The second *Radio Barcelona* station, with 26.5 kW of radiated power, manufactured by International Western Electric and assembled by Bell Telephones, was the forerunner of this model in Europe: Niqui 2020, p. 191. The broadcasting tests were followed by the obtaining of the licence and the official opening of *Radio Barcelona EAJ 1*. At that time, there were 60,000 listeners in the city, of whom only 1,000 were members of the ANR and paid a monthly fee of 5 pesetas, the ANR's only source of income, which was insufficient to run the station. On the pioneers, Eduard Rifà i Anglada in particular, see "Història de la ràdio a Catalunya: recull de premsa", FONS ANC1-808, Personals, 1924–1935. In 1929, an extension of the station on Tibidabo, high above Barcelona, was planned: *Arxiu Municipal Contemporani de Barcelona*, Fo-1,185/1929. Two years stand between the creation of *Radio Barcelona* and the major stations, *Radio Paris* and *BBC*.

⁴² *La Libertad*, 7/6/1925, p. 6; *La Correspondencia de España*, 12/6/1925, 17, p. 14. The inventor Lee de Forest deflated the general euphoria caused by the inaugurations of *Ràdio Catalana EAJ-15* and *Unión Radio*, with *Radio Ibérica* and Marconi stations, respectively: *El Liberal*, XXIV, 8.183, 25/6/1925. *Ràdio Catalana* had its headquarters in the Heusch factory and its facilities in the very heart of Barcelona (broadcasting room) and Paris Street (director's office, transmitting equipment and radio generators): *Arxiu Nacional de Catalunya*, FONS ANC1-42/BRANGULÍ. As the official organ of the station, it had the most important radiotelephony magazine of the same name, which was published weekly. By way of comparison, a few years later, in Buenos Aires there were eight radio stations; in Barcelona there were fifty or so dealers in radio equipment, including some of some importance, such as *Anglo Española de Electricidad*: *Anuario de la Radio* [Radio Yearbook], 1, 1936 [sp].

⁴³ Madrid Gazette, 170, 18/6/1932, p. 2.006.

⁴⁴ Madrid Gazette, 153, 1/6/1932, pp. 1622–1623. Four out of five bids - Emanuel Moeschlin (Basel); José Masdeu Fontbuena, constructor (Barcelona); Philips Ibérica, S. A. E. E. and A. E. G. Ibérica de Electricidad, Telefunken section (Madrid)—were rejected, and *Standard Eléctrica* was the winner. The press criticized the measure for its resemblance to the competitions during the dictatorship: Orbe, 1/10/1932, p. 4; *El Heraldo de Madrid*, 4/11/1932, p. 12.

The Law of 9 March 1932, which mandated the Government to reorganize telecommunications services, defined the infrastructures—a central broadcasting station and the necessary regional stations—for the State to operate this service and the structure of the service—seizure of radiotelegraphic stations and reorganization of these communications on behalf of the State⁴⁵. The new guidelines that the spirit of this Law imposed were embodied in two advisory and consultative bodies, namely the Personnel Board and the National Telecommunications Board. The latter had the task of proposing to the ministry measures conducive to the development of telecommunications in Spain. In addition, it could intervene in modifications to the national network, in the reversion of service and the annulment and revision of contracts of great significance because it affected CTNE's telephone monopoly⁴⁶.

In a new action in 1934, the ministry of Communication urgently announced the call for tenders for the supply and installation of the eight radio broadcasting stations and two rebroadcasting stations of the State's national network. On this occasion, it specifically defined the geography of the broadcasting stations: National, Central, Northeast, East, South, South, Northwest, North, and Canary Islands⁴⁷. The political vicissitudes, i.e., the triumph of the right-wing, led to a review of the work undertaken. The Government was authorized to submit to the Cortes a bill repealing the Basic Laws on the reorganization of the postal and telegraph services enacted in July and March 1932⁴⁸.

The Popular Front took a stand against the abusive behavior of certain broadcasting companies, including Unión Radio, S.A., which was fined for repeatedly contravening the provisions in force by exceeding the time it was empowered to broadcast advertisements. The government pointed out that pending completion of the national network, the Directorate General of Telecommunications could authorize the continued operation of a broadcasting station whose concession term had expired. Concessionaires had to apply to the Ministry of Communications for the necessary authorization to continue operating the service⁴⁹.

For their part, from the market, local radio stations organized themselves into the Federación de Radioemisoras Españolas (Federation of Spanish Radio Stations), which was made up of a group of four dozen radio stations of this category and which fought to defend their interests⁵⁰.

4. Radio during War: Civil War and Post-war Era

Radio stations were placed under official protection from the first moment of the military coup against the Republic, thus preventing Radio Associació de Catalunya from being occupied by fascist groups. In Catalonia, the president of the autonomous government of the Generalitat, Lluís Companys, gave the microphones to the rebel general Godeó to surrender and disassociate from obedience the soldiers who had followed him in the uprising⁵¹. Almost simultaneously, broadcasters offered their services to

⁴⁵ Madrid Gazette, 71, 11/3/1932, pp. 1768–1771.

⁴⁶ Madrid Gazette, 84, 25/3/1934, pp. 2275–2277.

⁴⁷ Madrid Gazette, 209, 28/7/1934, pp. 979–981.

⁴⁸ One of the aims was to curtail the influence of the trade unions, which were regarded as an expression of the Soviet regime: Madrid Gazette, 322, 18/11/1934, pp. 1370–1372.

⁴⁹ On the expiry of the concessions for Unión Radio's radio stations, the Government granted the company's request and they were extended by Ministerial Order of 12 September 1935, in which the State's share was set at 5% of the revenue obtained from advertising, while remaining subject to the other provisions of the 1924 Regulations, including authorization to broadcast advertising for a maximum of five minutes per hour of operation: Madrid Gazette, 188, 6/7/1936, pp. 176–178. The Government recognized the work carried out in Spain by the Unión Radio stations in popularising radio broadcasting, which, as pioneers, had to face up to the difficulties involved in setting up a new service and the uncertainty that followed. The Unión Radio stations EAJ-1 (Barcelona); EAJ-2, (Radio España, Madrid); EAJ-5 (Unión Radio Sevilla); EAJ-7 (Unión Radio Madrid); EAJ-8 (Unión Radio San Sebastián) and EAJ-19 (Radio-Asturias, in Oviedo), as well as EAJ-15, Radio Asociación de Barcelona had to pay the State 5% of the gross income obtained from broadcasting radio advertising: Madrid Gazette, 259, 16/9/1935, p. 2137. Unión-Radio was fined 1,000 pesetas for obstructing the official auditors: Madrid Gazette, 117, 26/4/1936, p. 810. Unión Radio Sevilla was authorised to continue using its current frequency: Madrid Gazette, 145, 24/05/1936, pp. 1682–1683.

⁵⁰ The Federation requested that the 5 per cent levy in favor of the State on the income from advertising broadcast on the radio stations of the eight main radio stations be applied to local radio stations: Madrid Gazette, 148, 27/05/1936, p. 1.760. For their part, listeners mobilized against the existing interference between broadcasts from radio stations and succeeded in getting the stations to broadcast on non-disturbing frequencies: Madrid Gazette, 114, de 23/04/1936, pp. 659–660.

⁵¹ Guillaumet 1994, p. 161.

the authorities in each of the two zones into which Spain was divided⁵². The radio played a central role in the civil war as an instrument of information and propaganda⁵³. The Radio Department of the Undersecretariat of Propaganda was created and a listening service attached to the General Directorate was organized in the camp of the rebels against the Republic⁵⁴. The movement to clandestine equipment and broadcasts has been accentuated⁵⁵.

The territories with a statute of autonomy took different actions, a sometimes forgotten fact. A law relating to the Statute of Catalonia granted this body broadcasting services while reserving to the State the right to coordinate the media throughout the country and to install its broadcasting services and inspect those operating under a concession from the Generalitat de Catalunya⁵⁶. This body concentrated its regulatory activity on a series of decrees relating to the organization and composition of the bodies and, above all, to financing. To begin with, the Generalitat decided to put into effect the agreement of the Joint Statute Commission on the transfer to the Generalitat of the broadcasting service, which was put into effect by the Decree of 5/29/1934⁵⁷. Based on these prerogatives, the Generalitat de Catalunya created the Direcció general de radiodifusió⁵⁸ and assigned the Broadcasting Services to the Department of the Presidency, subsequently dissolving them and creating the Directorate General of the branch. It finally came under the Department of Home Affairs and Social Welfare, together with the services attached to it. The head of this department was empowered to appoint the representation of the Generalitat de Catalunya to the National Broadcasting Board⁵⁹. For its part, he seized the installations, premises, and ancillary services of the Compañía Hispano Radio Marítima S.A. and Transradio Service in Catalonia (DOGC 1936), a provision which it later repealed. About the composition of the bodies, he ordered that the Broadcasting Committee created by Decree 56 of 9 January 1937 should be enlarged to include a representative of the Department of Public Services (DOGC, 59, 28 February 1937). In the fundamental aspect of the financing, the action was based on the creation of a tax on radio broadcasting and the granting of up to thirteen appropriations to cover various expenses for a total sum of 3,302,968 pesetas. Most of this went to the Directorate General of Broadcasting, but it should be stressed that private broadcasters in Barcelona also benefited, in particular Radio Barcelona and Ràdio Associació de Catalunya (Table 2)⁶⁰.

Table 2. Distribution of the Generalitat's appropriations (Elaborated from Generalitat de Catalunya, DOGC).

Destination	Amount (ptas.)	DOGC
Propaganda Commission of the Directorate General of Broadcasting Ràdio Barcelona and Ràdio Associació de Catalunya	780,000	111 de 21.4.1937
DG of Broadcasting and the Office of Census of Radio Devices Ràdio Barcelona and Ràdio Associació de Catalunya	325,000	199 de 18.7.1937.

⁵² Unión Radio Sevilla put itself at the service of the insurrectionists and from 18 July onwards, the rebel general Queipo de Llano launched his sophomies from its microphones. It was the most powerful radio station in insurgent territory and covered the whole of the Peninsula as long as it was not prevented by interference from the Republic. In Madrid, it could only be heard when Radio España de Madrid, on the same frequency, was not broadcasting: Guillamet 1994, pp. 161–165.

⁵³ Guillamet 1994, p. 161.

⁵⁴ Sixth Barcelona piece. Red press. Information from the Listening Service for 1 April 1938, Archivo Histórico Nacional, FC-CAUSA_GENERAL, 1654, Exp. 6.

⁵⁵ Discovery of clandestine radio stations in Madrid and Barcelona by the police: Pastor 1978, pp. 278–279. In 1937 there were some 800,000 receivers and three to four million listeners in Spain: Guillamet 1994, p. 162.

⁵⁶ Madrid Gazette, 265, 21/9/1932, pp. 2090–2094.

⁵⁷ BOGC, 256, 9/13/1934.

⁵⁸ Centro Documental de la Memoria Histórica, ES/4. The Generalitat planned to open its own station with a power of 100 kW, much higher than Radio Associació's 3 kW and Radio Barcelona's 7.5 kW, and to finance it with the tax on the possession of radio equipment and taxes on radio advertising, but this was only a new proposal: Guillamet 1994, p. 163.

⁵⁹ DOGC, extraordinary 18/1/1937; 56 de 25/2/1938.

⁶⁰ Arxiu Nacional de Catalunya, FONS ANC1-1/GENERALITAT DE CATALUNYA (SEGONA REPÚBLICA). The allocations to private broadcasters are not broken down.

Table 2. *Cont.*

Destination	Amount (ptas.)	DOGC
Presidency, Directorate General of Broadcasting of the Oficina del Cens d'Aparells de Ràdio; radio stations of Barcelona	325,000	DOGC 231 19.8.1937.
Presidency, Directorate General for Broadcasting; Barcelona stations	200,000	268 de 25.9.1937.
Presidency, Directorate-General for Broadcasting, October	100,000	303 de 30.10.1937.
Presidency, Directorate General of Broadcasting, November	100,000	320 de 20.11.1937.
Presidency, Directorate General for Broadcasting December	100,000	352 de 18.12.1937.
Presidency, Directorate General of Broadcasting January and February	200,000	35 de 4.2.1938.
Presidency, Directorate General of Broadcasting January and February 1938	200,000	35 de 4.2.1938.
Government, Directorate General of Broadcasting for March	119,678.58	78 de 19.3.1938.
Government and Social Welfare, Directorate General of Broadcasting 2nd quarter of January	366,189.45	105 de 15.4.1938.
Government and Social Welfare, General Directorate of Broadcasting, third quarter	243,200	199 de 18.7.1938.
Government and Social Welfare, General Directorate of Broadcasting, last quarter	243,900	DOGC, 287 de 14.10.1938.

In the sphere of infrastructure, the military uprising against the legitimate government of the Republic redoubled the information and propaganda activities of the trade union organizations. The National Confederation of Labor (CNT) and the Iberian Anarchist Federation (FAI) had propaganda offices, a body that also controlled several written media, including *Solidaridad Obrera* and the *Boletín de Información*. Both organizations sent communiqués to the workers and the people of Barcelona from the existing station's Radio Barcelona and Radio Asociación de Cataluña. The CNT and the FAI conceived of a radio station as one of the priorities of the information and propaganda office. Specialists in the field—from Radio Barcelona operators to wireless radiotelegraphy engineers and telephone technicians—collaborated in the project, together with technicians from related companies, such as the recorder company Fono Reclam. Thus, a libertarian radio station became a reality in Barcelona. The radio and electricity section, attached to the metalworkers' union, called together all the workers of the sector to socialize the industry. In mid-August 1936, the station was fitted with the necessary equipment for broadcasting, including a radio studio, transmitters, a sound player, a Philips music system and microphone, as well as loudspeakers. The confederal station began broadcasting in early September 1936 under the name ECN1 Radio CNT-FAI and transmitted its programs on two extra-shortwave frequencies and one normal frequency⁶¹.

On the demand side, the Civil War offered radio a propitious occasion for its dissemination among the population. Advertising referred to it and made the radio receiver the "spokesman of culture in the worker's home", while at the same time calling for respect for its ownership and the propagation of its acquisition⁶². During the war, the reorganization of the services of the Directorate General of Telecommunications was resumed with plans for the organization of broadcasting services and a national broadcasting plan⁶³. Isolated news reports spoke of the creation of new centers, as was the case in Santander⁶⁴, or attempted occupations of radio station premises, such as the one perpetrated against Unión Radio by an anti-republican group of the family of the dictator Primo de Rivera⁶⁵. The same importance resulted in an action to control the possession and use of receiving devices to prevent enemy

⁶¹ Aisa, 2017, pp. 46–47.

⁶² Centro Documental de la Memoria Histórica, PS-CARTELES, 121.

⁶³ Republic Gazette, 73, 14/3/1937, pp. 1,206–1,208.

⁶⁴ Centro Documental de la Memoria Histórica, Telegram sent to the Chief of Division 3 by the delegate of the Telegraph Centre of Santander informing of the inauguration of a radio broadcasting service, PS-SANTANDER_A,C.242,EXP.4, 1936-11-25/1937-8-4.

⁶⁵ Centro Documental de la Memoria Histórica, National Historical Archive, PS-MADRID, 299, Leg.2564, Exp.27, 1937-2-24/1938-6-30.

radio propaganda⁶⁶, which led, on occasion, to the confiscation of radio receivers, ill-fitted by the public⁶⁷. In addition, special guidelines were required for the possession and use of radio receivers, backed up by certificates of allegiance to the republican regime⁶⁸.

5. Conclusions

Wireless communication has developed owing to the tight control that Marconi kept over his patent and the niche location of ship-to-ship and ship-to-shore communications. I analyze one of its uses, namely radio broadcasting, focusing on the origins and development of mass media in Spain from the economic and business angle. Based on archive documents and secondary bibliography, a history of the mass communication industry is provided which differs from econometric analysis and enriches the background for business innovation. Special attention has been devoted to charting the framework of broadcasting in the world and the changing circumstances of the beginnings and first implementation of this technology in Spain. Given the limited results of the first intervention, the State imposed public tender as the system of concession for the construction and operation of the network of stations. Finally, the development of broadcasting was inferior to that of the major powers but superior to that of other Mediterranean countries.

This article shows the creation of radio stations of different categories across the territory and their vicissitudes, as well as the actions of the protagonists who promote them in various forms. The literature indicates that broadcasters, at least the large ones, present themselves as companies horizontally integrated with the press, comprising a broadcaster and a broadcast media outlet from the company typology.

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