

BONET, M. (coord.). *El imperio del aire. Espectro radioeléctrico y radiodifusión*.
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A stranger called spectrum

Our daily lives are full of everyday actions carried out almost unconsciously and without worrying about the circuits that make them possible. Watching TV, listening to the radio and browsing the internet are some of these activities that form part of our usual routines (naturally only in societies with access). At times, however, our eyes are opened by a random episode. In 2010, when the digital switchover forced them to shift to DTT, many citizens sat down to talk for the very first time about a stranger called *spectrum*.

The spectrum of radio frequencies is one of those realities that only reach the public as a result of something else, when there are consequences. The radio frequency spectrum is a little known but very important issue because it has a direct effect on the media in public service terms and, consequently, on a country's democratic health, insofar as it affects both content and information. Herein lies the relevance of this book. Coordinated by the professor and researcher from the Universitat Autònoma de Barcelona (UAB) Montse Bonet, a group of experts tackle the radio frequency spectrum and its management in a book that raises public awareness of a complex but vital phenomenon.

This book is a success firstly due to its choice of authors, all with a notable academic and/or professional track record that endorses their expertise regarding the object of study and focus of the chapters. To plan and create a book of such characteristics you need to have clear ideas and a knowledge of the subject, as well as order and method. This project forms part of the research career of the volume's coordinator, particularly with international impact. After years of researching cultural industries, especially radio, Bonet has lately examined the keys to handling the radio frequency spectrum. Her studies have highlighted the existence of a financial battle in which public policies have taken a market-oriented approach to the radio spectrum (Bonet, Civil & Llinés 2008), Spain's radio

frequency spectrum has been used for political means, with preferential clients taking priority over criteria of efficiency (Bonet & Guimerà 2016) and telecommunications have become more important than audiovisuals as a consequence of social, economic and political factors, to the point that the very idea of the media as a public service is threatened (Ala-Fossi & Bonet 2016). To date, however, the findings of such studies had remained essentially within the circuits of academic research and specialist publications. And although valuable, their contribution nevertheless has a limited impact. This book is an opportunity to reach more people; it's knowledge transfer.

The book has a logical and coherent narrative thread and it should be read in order. The first part tackles the what, who and how of the radio frequency spectrum and its management, while the second part focuses on studying the relationship between the channel and the media of TV and radio and a final section is prospective in nature. The coordinator, Montse Bonet, starts the book with a first chapter "La respuesta está en el aire. El espectro como plataforma tecnológica y campo de batalla" that helps to understand where we've come from and how we've reached the current situation. Bonet shows how the dominant political discourse relates technology with productivity, growth and economic prosperity in such a way as to justify the need for broadband to receive a digital dividend (the part of the spectrum abandoned by the media) and to deny broadcasting the option to oppose this. As the author notes, essentially there is a dispute between a view of the spectrum as a public good (consequently the government determines how it can be managed and by whom) and a market orientation: "This creates a fight between two models of communication and business and the field of battle is no other than the radio frequency spectrum" (p. 26).

The second chapter "Espectro y frecuencias. Breve guía para no iniciados" is far longer, slightly unbalancing the overall structure. Its length is valid, however: from now on, if someone wants to understand what the radio frequency spectrum is (as

part of the electromagnetic spectrum), they will have to read this chapter. Jaume Pujol, a telecom engineer, manages to explain in detail, depth and excellent clarity, a phenomenon such as the spectrum, its components and all associated concepts (waves, propagation, cover, network design, bandwidth, capacity, interference, planning, digital dividend, etc.). And he does so with two notable pluses. On the one hand, he compares many everyday examples that help us to understand the concepts (for example, socks, shirts, coats, suitcase and airplane cabin to explain a multiplex or MUX). His charts, tables and figures are also very informative.

Once we've understood the what, the next chapters tackle the who and the how. In "Quién es quién. Principales actores europeos lidiando con el espectro", Montse Bonet and another UAB professor and researcher, Josep Àngel Guimerà, provide an exhaustive review of the two main players interested in the spectrum: a web of government and legislative bodies, regulatory organisations, institutions, advisory bodies and associations and companies which, in practice, act as a lobby and pressurise spectrum management. The chapter reveals a world that is far removed from citizens and unknown by them, but which decides things that affect them directly. The professor and researcher from Universidad Carlos III de Madrid, M^a Trinidad García Leiva, ("Cómo se reparten las frecuencias. Políticas y gestión del espectro radioeléctrico") then explains the management procedures and models in a chapter that points to a paradigmatic shift. Commodification and liberalisation have resulted in changes in the management and policies of the radio frequency spectrum and the notion of a *common good* is being replaced by criteria of financial returns focused on short-term profits.

In the second half of the book, Carmina Crusafon, professor and researcher at the UAB, and the journalist and doctorand Marta Albújar, analyse the process of implementing DTT ("La resintonización de la TDT en España. Quítate tú para ponerme yo") and highlight the contradictions, errors and mutual interests of the political powers and the media, while citizens are the most under-appreciated and affected party. Afterwards it's the turn of radio, with a chapter by David Fernández-Quijada, senior analyst from the *European Broadcasting Union (EBU)*. In "¡Estas ondas son más! Ineficiencias y obsolescencias de la radio digital" he explains how the current implementation of DAB (*digital audio broadcasting*) uses the radio frequency spectrum inefficiently and warns of the consequences this could have for the cultural industry, with a two-speed Europe regarding the implementation of digital terrestrial radio in the medium term. Finally, the volume is completed by the professor and researcher from the University of Tampere (Finland), Marko Ala-Fossi ("Radiodifusión terrestre en Europa después de la CMR-15: ¿el final de una era o un nuevo principio?"). Based on the results from the World Radiocommunication Conference of the UIT/ITU in November 2015, Ala-Fossi notes that "The new post-radio broadcasting era will be less stable and more unpredictable: we will never be able to take anything for granted

again. There will be more competition or even a political battle over scarce resources, such as the spectrum, both nationally and internationally" (p. 214).

In summary, this is an outstanding book given its content and the informative capacity of its authors, who throw light on an often opaque subject. We should celebrate the wisdom and boldness of Editorial UOC in publishing it. A volume which, from now on, should be on the must-read list of communication faculties. And we should also thank the authors for their hard work in making this area much easier to understand. Spectrum management affects citizens, who are suffering the consequences although they hardly know anything about it. This book provides them with some insight.

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