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for Media Research at the University of Hamburg

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Adapting Public Service to the Multiplatform Scenario: Challenges, Opportunities and Risks

Final Report of the Project „Redefining and Repositioning Public Service Broadcasting in the Digital and Multiplatform Scenario: Agents and Strategies“

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A. Context

Digitalization has enabled and fostered the convergence between media, telecommunications and computing. This has affected not only the contents and services of those sectors, which are currently experiencing a strong wave of innovation and hybridization, but also their regulation, market structures, operational logics and business models. Their consumption and reception patterns are also experiencing very relevant changes.

Furthermore, digitalization and subsequent technological innovations foster a detachment between contents, physical supports and networks. As a result, a multiplatform scenario is being configured. These developments also have a significant impact on the features of electronic devices, which are becoming more and more versatile. With regard to media contents, being available online is no longer an add-on but a prerequisite for success. Consequently, ubiquity, mobility, time-shifting, on-demand, personalization and social sharing are becoming up-to-date, necessary characteristics of any service within the multiplatform communication ecosystem.

In this scenario, digitalization and convergence plus internationalization and globalization result in an increase in the social and economic relevance of the media system, which becomes more complex. Today, the number of players involved in media activities is much higher than a decade ago. Moreover, their nature is more diverse, including providers of new technical services as well as companies from other fields of activity, which are investing in media looking for high and fast profitability. With regard to traditional broadcasters, the powerful gatekeeper role that they used to play in the past can no longer be taken for granted.

In the case of public service television and radio, technology innovations enable their operators to deploy new offers that overcome the borders of broadcasting. Their contents are now also available online and can be accessed by means of multiple devices, including mobile ones. In fact, public broadcasters are demonstrating that they are still innovators and pioneers. Across Europe, many of them have developed a wide range of services that have become forerunners of the market.

This evolution and extension of public service activities has led to a confrontation among players in the media sector: on the one hand, private agents argue that the new opportunities enabled by technology, and the associated potential revenues, should be exclusively allocated to the commercial sphere. Otherwise, according to their own calculations and benefit expectations, market viability, development and growth may be jeopardized. From their point of view, most of the innovation activities carried out by public service media exceed their remit and distort free competition. On the other hand, it is evident that the configuration of a digital and multiplatform media scenario generates opportunities for public broadcasters to improve their performance and offer better service to citizens. In addition, public service supporters sustain that technology has not only not resolved existing market failures but has created new ones. Therefore, it is believed that it remains necessary for there to be a public service offer in order to ensure universal service and access as well as to guarantee quality, pluralism, diversity and/or social representativeness within the media system.

As a result of this conflict, the debate about public service broadcasting/media (PSB/PSM) has regained relevance these days, not only within the communication sector but also in the public eye. The legitimacy and definition of its services as well as the organization and performance of its operators are once again subject to scrutiny. Nevertheless, the current debate is mainly focused on the range and scope of public service activities. Commercial players are trying to constrain the evolution and performance of public service operators by lobbying national governments and public administrations or filing complaints with the European Commission. In fact, processes of redefining and repositioning public service activities are not uncommon across Europe. At the same time, new ex-ante accountability procedures that are more complex, detailed and precise are being implemented.

In addition, public service operators need to internally adapt to the new technological and operational characteristics of the multiplatform scenario. This means reconsidering their mission, facing structural and professional changes, as well as making the most of innovation in order to maintain and improve their relationships with citizens. Otherwise, their market visibility, social relevance, audience’s support and economic viability may be endangered, leading to further questioning of their legitimacy.

Overall, the magnitude of the ongoing changes constitutes a clear inflection point concerning the position and role of public service within the media system, its social functions and objectives as well as its operational articulation.

B. Research Project

1. Object and Research Questions

Taking into account the transformational context described and the resulting conflict where public and commercial interests collide as to the need for PSB as well as the scope and range of its activities, this research project investigates to what extent the configuration of a digital and multiplatform media scenario requires an adaptation of Public Service Broadcasting and how it can be carried out efficiently. This adaptation process is crucial because the legitimacy and continuity of public service greatly depend on its outcome.

Therefore, the project aims to answer the following research questions:

1. How do the digitalization and the configuration of a convergent multiplatform media scenario affect the values, functions and objectives that legitimize Public Service Broadcasting?
2. To what extent do the ongoing changes compel modifications in the theoretical conceptualization and the practical configuration of PSB?
3. What are the main challenges, opportunities and risks for public service broadcasting in the scenario described?
4. How do public service broadcasters perceive the current context of change?
5. What strategies do public broadcasters implement to adapt to the new digital and multiplatform scenario?

These questions comprise theoretical and practical issues. This arises from our objective of combining both perspectives in order to contribute to developing media studies, while producing valuable knowledge for public broadcasters and decision-makers.

2. Structure, Methodology and Objectives

The project has been structured in two parts:

Part I: The transformation of the media market and its repercussions on public service broadcasting: challenges, opportunities and risks

The aim of this first part was to answer the first three research questions. This was done by carrying out two tasks:

Task I.a – Identifying what the main current transformation processes of the media sector, and particularly broadcasting (audiovisual media), are

- Goal: Obtaining a clear picture of the evolution trends that lead to / enable the configuration of the multiplatform media scenario.
- Methodology: First, the main ongoing technological innovations related to audiovisual media were identified. Then their implications for other issues such as the structure of the media market, business tendencies, regulation or reception patterns were analysed discussed.

  This was done by means of extensive desk research that resorted to a broad variety of sources of information: scientific articles and books, market reports, policy documents, market newsletters, etc. Attending conferences and holding talks to experts complemented the documentary sources.
- Result: A systematic description of the most relevant technological transformation processes and an analysis of their impact on the evolution of the media market will be provided.

Task I.b – Discussing the repercussions that the changes identified in Task I.a have on Public Service Broadcasting

- Goal: Understanding the implications that the current transformations of the media system have for public service.
- Methodology: The trends ascertained were examined using the theoretical framework regarding PSB. This task required an in-depth and systematic review of the academic contributions about PSB.
- Result: A theoretical model of the challenges, opportunities and risks for the remit, organization and performance of Public Service Broadcasters in the multiplatform scenario will be defined.

Part II: Redefining and repositioning public service broadcasting: agents and strategies – An international comparison

The aim of the second part of the project was to answer the last two research questions (4 and 5). This was done by carrying out three tasks:

Task II.a – PSB country profiling [Germany, Spain & Poland]

- Goal: Obtaining a profile of each national media market, the current situation of public service and the adaptation strategies carried out by its operators.

- Methodology: First, a country profile model was designed, including the following categories of variables: country basic data, media system (legal framework, public institutions, media groups, media reception data), public services (legal framework, organization, performance, accountability, adaptation strategies, current debate). Secondly, research assistants were hired in Germany and Poland and they were responsible for applying the profile model to their national. The researcher in charge was responsible for the case of Spain and for ensuring the coherence of the outcome.
- Result: A basic picture of each national media market and a systematic and precise description of the situation of public service, including its legal definition, organization, offer and adaptation strategies. Moreover, a description of the topics included in the debate about the extension of public service.

Task II.b – Country interviews [Germany, Spain & Poland]

- Goal: By turning to primary sources of information, obtaining better and more realistic knowledge of the relevant issues in each country.
- Methodology: With the help of the local research assistants, those public officials, experts and academics whose opinions could make a relevant contribution to the project were identified and contacted. A plan of semi-structured in-depth interviews was then be defined and carried out.
- Result: The additional information obtained during the interviews completed the country profiles. Moreover, the experts' views and opinions provided a clear perspective of the public broadcasters' position in front of the changing scenario. In addition, their contribution resulted in valuable knowledge that enriched the analysis of each national case and their comparison.

Task II.c – Country analysis and comparison

- Goal: Contrasting the national cases to identify similarities and differences among the adaptation strategies carried out by public service operators.
- Methodology: The information included in each country profile and the results of the interviews was analysed individually and comparatively
- Result: Identification of similarities and differences between the national cases as well as good practices.

Final Results

The main findings and contributions of this research project are:

1. The identification and systematization of the most relevant transformation processes currently affecting the media system and the analysis of their impact on the conceptualization of public service as well as on its remit, organization and performance.
2. A theoretical reflection and a model of the challenges, opportunities and risks for public service broadcasting in the multiplatform scenario.
3. Identification of trends and good practices concerning the strategies for adapting public service to the multiplatform media scenario.
4. A list of recommendations regarding the adaptation of public service to the multiplatform scenario addressed to politicians and public service managers.

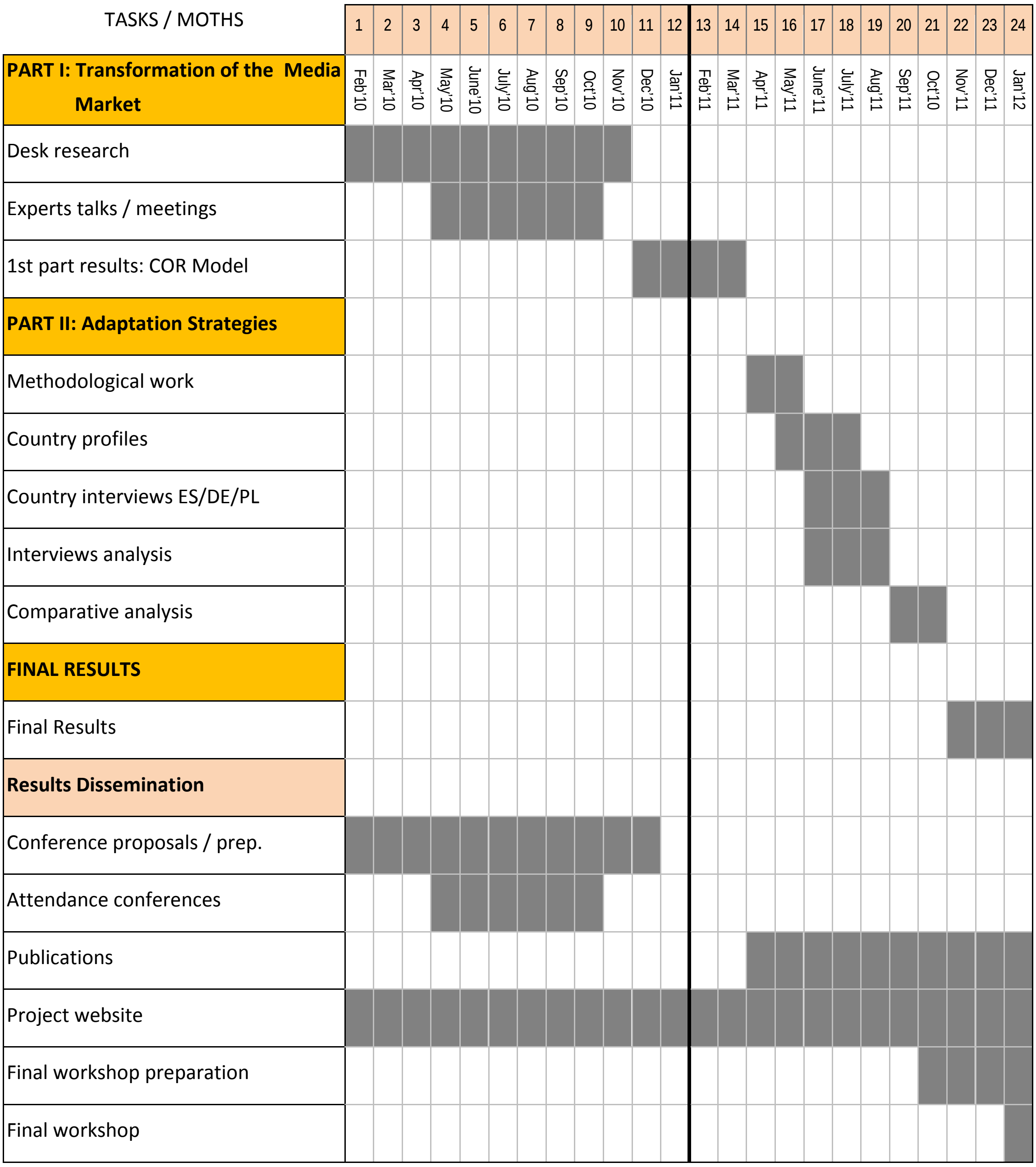
3. Selection of National Cases

In this project, three national cases are analysed: Germany, Poland and Spain. The criteria followed to choose them are:

- The countries are representative of different PSB realities within the EU. Germany stands between the Atlantic and Nordic PSB models, where professionalism and independence are consolidated. Spain represents the southern countries, where a strong state dirigisme is common. Poland accounts for the Eastern/post-communist countries, which face particular challenges due to their recent political and economic transformation.
- It has been assumed that countries with a big national media market offer structural conditions that result in better opportunities for their public broadcasters to develop multiplatform strategies.
- In the selected countries, public broadcasters have already developed broad and interesting online service and carry out a multiplatform distribution. Consequently, their experience will allow obtaining conclusions about which adaptation practices are the most successful ones.
- Finally, pragmatic factors like the researcher's connections and the expertise of the host in those countries were considered. In that way, the feasibility of the project is guaranteed.

4. Work Plan

The duration of the project is 2 years, starting in February 2010. The first year will be devoted to the first part of the project. The second part of the project and the final results will be implemented and achieved during the second year. Parallel to the execution of this project, the fellow took part in a broad variety of research training activities that are also included among the goals of the Marie Curie Fellowship.



5. Definitions & Considerations

Several definitions and considerations are provided to determine the meaning and scope of certain terms used in this research project.

5.1. Public Service Broadcasting / Media

Traditionally, Public Service Broadcasting (PSB) has included television and radio activities and has used the terrestrial network as initial/main distribution platform. Nevertheless, as a result of technological innovation, public operators have progressively extended the scope and range of their contents and services, so that they are also available at satellite platforms, cable networks and even the Internet. This expansion has resulted in the need to consider the evolution of the concept Public Service Broadcasting towards a more comprehensive term: Public Service Media (PSM). This is necessary not only because of the new distribution practices, but as a necessary adaptation of the conceptualization of the service – including its remit as well as its producing, programming and managing practices – to the new reality of the media system (Lowe & Bardoel, 2007; Collins, 2009).

This research project deals directly with the conceptual and practical evolution of public service. As detailed before, its ultimate goal is to identify trends and good practices related to adaptation to the multiplatform scenario. Therefore, the use of the two terms PSB and PSM will be frequent. In the first instance, it will be used to refer to traditional linear and scheduled television and radio services, analogue or digital, which are offered via the terrestrial distribution platform but also via satellite and cable. Secondly, PSM will be used when referring to the entire group of services that public operators currently offer, including the former as well as new online activities. However, it should be noted that, in order to avoid redundancy within the text, PSB and PSM may sometimes be used in an equivalent, undifferentiated fashion.

In addition, it is also important to consider that, due to their relevance and innovation rhythm, especial attention is paid to audiovisual services. Despite being a cornerstone of public service, radio is not considered a central object of this project due to extension restrictions, research capacity and time availability.

5.2. Platform / Multiplatfom / Multimedia

As a result of the high pace of innovation experienced by the media system, these terms have become buzzwords that are not always used very precisely or accurately. Consequently, it is necessary to specify their meaning in this project.

Platform

In general terms, a platform can be defined as the combination of a technological system – including a distribution medium, a set of technical standards and hardware as well as software elements – and a business model in order to make available/commercialize an offer of contents and services.

Traditionally, the term platform has had a very strong technological nuance. It was equivalent to distribution/diffusion medium because all the participants in one of them, for example terrestrial broadcasting, agreed on transmission and reception standards and shared a business model. It was a concept that the user did not need to consider. The development of pay services, which required their customers to acquire a certain receiver with specific technological components and created a differentiated business model based on subscription fees rather than advertising, made clear the difference between a means of distribution and a platform.

Having said that, it is then important to observe that, within one means of distribution (terrestrial broadcasting network, satellite, cable, mobile telecommunication networks, etc.), several platforms can coexist. In the 1990s, this was the case for satellite pay-tv, which in some countries was offered by more than one communication group, each of them developing its own platform (set top box with embedded conditional access system, billing and customer handling systems, offer of contents and services, etc.). Back then, and today as well, developing a proprietary platform by means of using non-interoperable hardware or software solutions was/is a frequent market strategy. The appropriateness of that approach and its repercussions on public interest and on the market itself are relevant discussion topics.

Today, the Internet is a perfect example of how a means of distribution can be shared by multiple platforms. Besides the web, services like iTunes, Hulu, Spotify and many other audiovisual on-demand offers are good examples of what a platform is. The field of mobile telephony and communication services has also become a multiplatform environment, especially now that online connectivity is the main evolution trend of that sector. Companies like Apple, Google or Nokia have developed their own content and services platforms, accessible only by using specific hardware and software solutions embedded in certain terminals (iPhone, iPad, etc.). Nevertheless, all of them share the Internet and the mobile telephony network as distribution systems.

In order to differentiate between a means of distribution and the concept explained here, the former will be referred to as a ‘distribution/diffusion platform’, the latter as a ‘commercialization platform’.

Multiplatform

The term 'multiplatform', a core element of this research, is used as a descriptor of the current situation of the media system where multiple and diverse technical means of distribution and commercialization platforms coexist.

It is important to notice that the traditional mass media system – including radio, television and the press – has always been multiplatform. Each means of mass communication was itself a platform. Technological innovation has now enabled that any mass media content can be distributed by different diffusion systems.

Today, the multiplatform character of television is double: This means of communication is not only distributed using several physical networks (terrestrial, cable, satellite, the Internet, mobile telephony networks) but can also be accessed by means of different commercialization platforms that are available in one, several or all the possible distribution networks and by using many different reception devices. Similar processes of multiplatform expansion have occurred for radio and the press.

As a result of this evolution fostered by digitalization, the contents and services provided by each means of mass communication have acquired new features, which are enabled by the technological particularities of each platform as well as receiving device.

In addition, the term multiplatform, when applied to the production and distribution strategies carried out by media and communication groups, refers to the presence of its activities in different diffusion and/or commercialization platforms. In this sense, it is important to remark that multiplatform is not necessarily equivalent to multimedia. As an example: a television production company can adapt its programmes and formats to the particularities of the different distribution and commercialization platforms where its products are distributed (digital terrestrial television, satellite, cable, mobile telephony or the Internet). It will then be a company with a multiplatform profile/strategy but not a multimedia company, as it produces only television content.

Multimedia

As an adjective, it can be applied to contents and electronic devices. In the first case, it refers to the possibility of distributing a piece of content in different media (after the required adaptation). In the second case, it refers to the capability to access different media. A computer is a multimedia device because it can provide access to radio, press, television, etc. Television sets and telephones are now becoming multimedia devices as well.

The adjective can also be applied to companies and corporate groups that carry out activities related to several media.

C. Report on Results

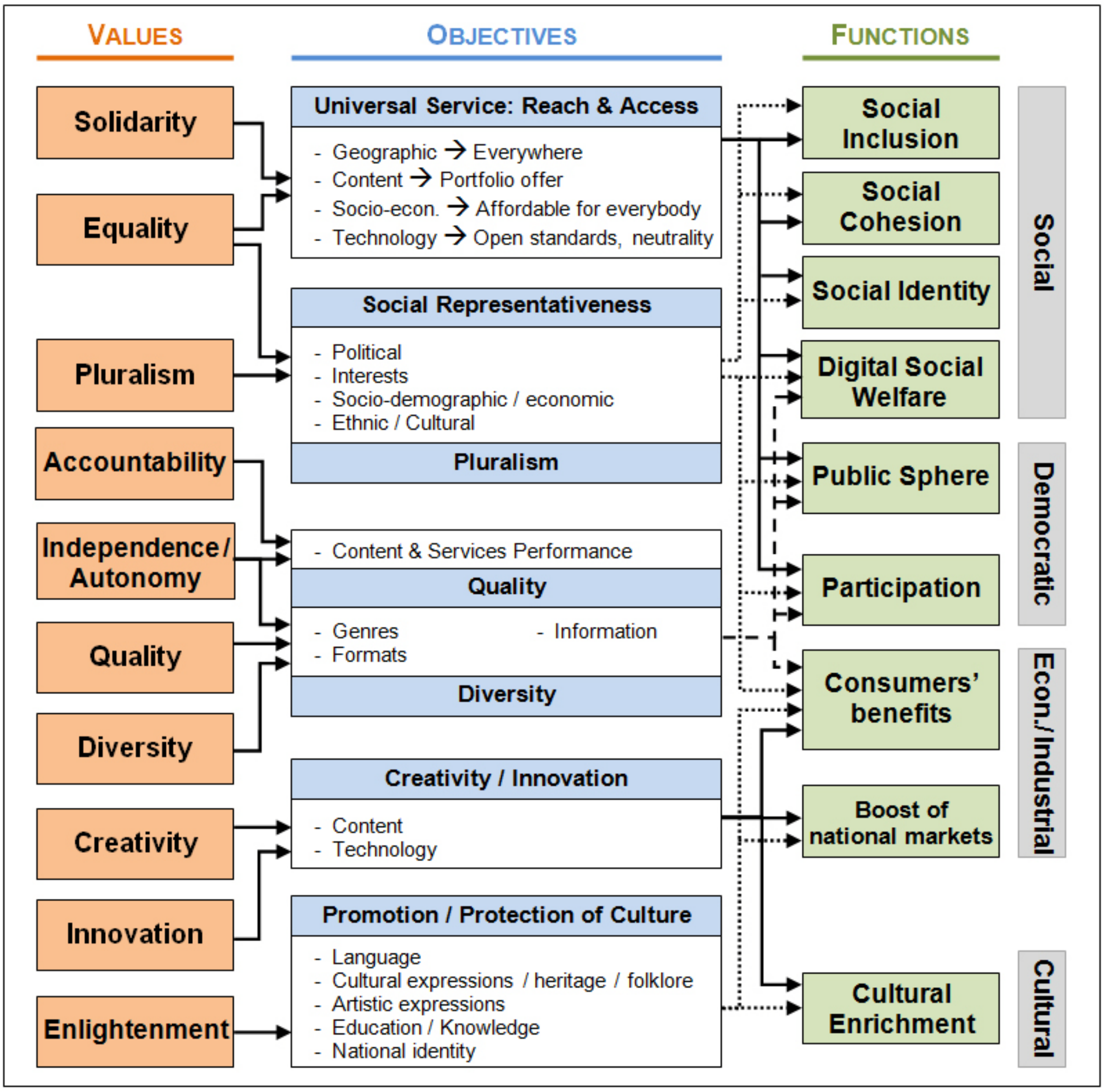
1. Public Service in the Field of Media: An Ideological Option, a Socio-Political Bargain Outcome

Originally limited to radio and television activities, public service in the field of media has usually been defined by attributing certain values and objectives to the contents provided (what), to the operators of the service (who), to their performance (how), and to the availability/reach of the offer (where, for whom). In addition, the definition has usually included the societal functions to be played by public service. These are connected with the impact expected from achieving the values and objectives mentioned.

Far from having a widely agreed and precise definition, public service is an open and debatable concept that generally generates heated discussions. The abundance and diversity of academic literature and research as well as of ideological and political positions with regard to its definition and evolution are proof of the concept's intrinsic complexity.

Therefore, by analysing and contrasting a substantial amount of the most relevant theoretical contributions published in the last 15 years, the following comprehensive and updated model has been designed including the values, objectives and societal functions that currently shape the concept of public service (graphic 1)

Graphic 1: Defining Public Service in the Field of Media – A Model of Values, Objectives and Functions



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The following questions can be raised when critically observing the proposed model from a communication studies perspective:

- What is the relationship between the values related to public service and the media system?
- Why should the media be considered suitable and responsible to achieve certain political, cultural and social objectives (public interest)?
- To what extent can free market and competition as well as commercial players be considered the suitable context and the appropriate agents to achieve the public interest goals attributed to the media?

Answering these questions is the way to delimit a set of arguments that define and legitimize public service in the field of media. Doing so implies deciding which elements of the ones included in model are considered right, wrong, necessary, valuable, expendable, etc, and giving priority to some of them.

However, the answers depend on each respondent's approach. As the title of this section announces, and its content will confirm, the concept of public service is an ideological option and, accordingly, variable. In fact, this is one of the main obstacles that scholars have been forced to confront when trying to agree on a scientific and standardized definition of public service applied to the media.

In addition, those questions have become a trigger for political debate and market conflicts. Therefore, in order to better understand the relativity affecting the concept of public service and to frame the current discussion about it, the arguments that could answer those questions are analysed below.

Question 1: What is the relationship between the values related to public service and the media system?

According to the contributions by some of the most relevant media researchers dealing with public service and public interest issues, there is general agreement on the fact that, due to their technological characteristics and their capability to transmit messages and ideas, mass media have great potential to produce social externalities. This concept refers to the impact – positive or negative – that the use of media can have on the entire society as well as on its individual members, even on those not using any media service. Consequently, maximizing the benefits and minimizing any negative outcome would become an immediate and logical goal in order to favour/protect any community's general interest (Blumler, 1992b: 29; Jakubowicz, 1999: 4; Collins et al., 2001; Harrison & Woods, 2001; Michalis, 2007; Sarikakis, 2004: 104; Tambini, 2008).

However, the benefits that media can provide are not always evident, direct or immediately connected to the use/consumption of their contents and services. For that reason, citizens might not be aware of those valuable social externalities such as social inclusion, cultural understanding, improving the quality of life, protecting and promoting culture, reinforcing identities, creating a public sphere that fosters political participation and ensures a healthy democracy, etc. Similarly, they also may not have a clear idea of what the negative externalities are and imply.

As a result of that lack of awareness, when making their media consumption decisions as individuals, citizens may not properly value the relevance of their own choices and their impact on the entire society. They might also not consider the importance of having a plural, diverse, independent, accountable, innovative, enlightening and high-quality media system. Consequently, their choices might be based exclusively on the short-term private/individual value that they would obtain from consuming certain programmes or using a particular technology.

For these reasons, media contents and services can be considered merit goods. Similarly to health or education, the described attribution of value carried out by citizens affects their will to pay for or fund those services that, despite producing positive social externalities, do not accord with their individual interest. That fact has a major impact on the economic and performing logics of the media system and can generate, as will be discussed later, certain market failures that harm the public interest.

Besides, history provides us with a broad diverse range of cases and evidence of how misuse of the capabilities of mass media has resulted in very negative externalities for society.

According to these facts, in Europe, especially during the decades immediately after World War II, when social-democratic ideals reached their peak, it was broadly accepted that public intervention could and should ensure that media potentialities would result in positive outcomes. Consequently, in order to maximize the social benefit that media could provide, the values, objectives and functions detailed in the proposed model [graphic 1] were progressively included in most European national media regulations. Generally, the State became responsible for and directly involved in providing radio and television services by means of establishing a publicly owned operator. Consequently, national public service broadcasting monopolies proliferated across Europe.

Nevertheless, a fact to be considered is that, despite the European origin of the concept as well as the existence of a basic and common set of core values and objectives linked to it, the practical articulation of public service broadcasting varies significantly from one country to another across the continent. The concept has also experienced diverse and interesting metamorphoses when developed beyond the borders of Europe. In fact, public service media are a highly national / regional phenomenon. The way in which they are defined, articulated and operated as well as their evolution trends depend very much on, among other factors, each country's political culture and conjuncture, on the characteristics of each national media market, on the political and social conceptualization of public interest and on the role of the state regarding provision and defence of the latter.

Since the late 1970s, as a result of subsequent national and international structural and economic crises, the political culture in Europe has experienced an evolution that has facilitated substituting neoliberal ideals for social-democrat ones. Among other consequences, this has implied a gradual transformation of the role of the state with regard to merit goods and services. From being a direct provider, the State became first a regulator of the market and then an enabler of private initiative. With regard to media, public service monopolies were abolished. Accordingly, the prioritization of those values attributed to the media has also changed in the last decades. The progressive commodification of the media system has reinforced the pre-eminence of its economic and industrial goals. As a result, the definition and legitimacy as well as the need for public service media have been strongly questioned and have become relevant debate topics in three arenas: politics, market and academia.

Question 2: Why should the media be considered suitable and responsible to achieve certain political, cultural and social objectives (public interest)?

The issue to tackle here is whether the media are intended to use their potential to achieve those goals integrated within the concept of public interest [graphic 1]. Therefore, as Humphreys (1996: 113) and Van Cuilenburg & McQuail (2003: 182-185) point out, what needs to be taken into account is, first, how public interest is conceptualized and, second, to what extent the media should be considered responsible for its provision / guarantee. In that sense, according to Van Cuilenburg & McQuail (2003: 185), public interest can be divided into three categories: political, social and economic. The media can contribute to each of these in the following ways.

Within the political field, the media enable the materialization of the freedom of expression and access to information. In this way, by creating and vitalizing the public sphere, they facilitate the participation of the civic society in politics. Thus, the media become a key element to ensure an effective articulation of democracy and foster its quality.

With regard to the social side of public interest, Van Cuilenburg and McQuail stress the contribution of the media to social order and cohesion. In addition, as Gifreu (1996) and Siune (1998: 21) review, the media have a determining influence on defining national, regional, group and even personal identities. Moreover, culture, education and art are also included in the social perspective of public interest and the media have become an essential vehicle for their protection, promotion, diffusion and development (Hoffmann-Riem, 1986: 128). Media should also be considered valuable partners in providing certain aspects of social welfare. Thanks to their new features enabled by technology innovation, they may complement and improve the provision of health, educational and many other social services.

From an economic perspective of public interest, it is worth pointing out that, since the 1970s, the media system has become a driver for creating highly skilled jobs and promoting research and innovation. Moreover, media outlets have increased their relevance as nodes of information, social connectors, daily life facilitators, leisure providers or contributors to the GDP. Consequently, together with telecommunications, the media system has been considered by national governments as a key element of their strategies to deal with economic and structural difficulties and an asset to foster development and growth (Van Cuilenburg & McQuail, 2003: 185).

As a result of its valuable contribution to each side of public interest, the media system has achieved a more central position and a major relevance within the entire society. However, due to the influence of neoliberal ideas related to market freedom and competition, which assume that economic profitability is a necessary condition (and a cause) for social welfare, the commercial goals in the field of media have been given priority during the past decades. Even more, the need for the media, and even their suitability, to actively contribute to providing the other sides of public interest have been actively contested. In that sense, the abundance of content and the capacity of choice enabled by technical innovation are regarded as appropriate and effective replacements for any previous public intervention mechanism in order to satisfy the political and socio-cultural aims attributed to the media.

From the opposing position, the opportunities resulting from technical innovation are claimed as a chance to overcome the exclusive focus on economic profitability and to improve the social and cultural benefits generated by the media by means of enabling solutions to previous 'market failures'. In that sense, it may be worth considering the media as providers of a new kind of welfare: the digital welfare. That concept would include those contents and services (online/offline) that might have a positive impact on the well-being of citizens (health, public administration, education, etc.). Within this approach, public service broadcasters are intended to play a crucial role on the basis of their past experience as providers of information and as citizen-oriented outlets.

Question 3: To what extent can free market and competition as well as commercial players be considered the suitable context and the appropriate agents to achieve the public interest goals attributed to the media?

For a long time, the legitimacy of public service as an effective instrument to fulfil the social functions attributed to the media system has relied on the well-known notion of 'market failure'. The British independent regulatory authority Ofcom (2009:1-3) defines it as *"an inefficient outcome where the market does not exhaust all the possible gains from trade given individuals' preferences and the cost involved"*. The 'failure' happens when markets are not capable of maximizing their total value. This is integrated by the private value, *"which is the value derived by consumers and firms from their interaction in the market";* and the external value, *"which is the value that results from services provided by a market but which is not fully reflected in the choices of consumers or firm"*. The positive social externalities previously mentioned are an example of external value. As indicated, the failure happens due to the fact that consumers and companies rather tend to give priority to the private value that they can obtain for themselves instead of considering public/general interest.

Nevertheless, the perception of this concept also depends very much on ideology and, in the field of media, on how issues like pluralism, diversity or quality are conceived and on how much priority and relevance they are given. These are the concepts usually involved in the discussion concerning the ‘market failures’ of the media system.

With regard to broadcasting, spectrum limitation has been the most recurrent ‘market failure’ situation pointed out and public intervention has been justified to ensure a plural media system that would also offer quality and diverse content. In that field, public policy has been usually carried out in two ways: first, by creating a public operator of the service that would be committed to achieving the objectives detailed before and subject to some kind of accountability (political/parliamentary/public); and secondly, by issuing operating licenses to commercial operators. That would be done by means of public contests that would consider to what extent the commercial proposals would fulfil the social goals and functions attributed to the media system, in addition to the private providers’ particular interests. In most of the European national cases, a dual system combining publicly operated and commercial offers has been the chosen formula for decades.

Besides spectrum scarcity, other traditional market failures are (Doyle, 2002; Iosifidis, 2007; Ofcom, 2009):

- Only a narrow group of genres and formats is capable of gathering large and/or profitable audiences. In a system where advertising and subscription fees are the main sources of revenue, and since their value depends on the reach of the content that they are linked to, homogenization and under-provision of content and services become common patterns. Commercial players will tend to mainly/only provide those ‘successful’ (economically profitable) contents.
- Similarly, media outlets tend to imitate their competitors (duplicative competition) because that is perceived as a less risky strategy. It is assumed that, if all the market players offer the same, the successful genres, their market share will tend to be equal and proportional (inversely) to the number of operators involved. As the previous case, this conservative strategy results in the homogenization and under-provision of the offer, with a negative impact on diversity, pluralism and social representativeness.
- Following the previous logic, incumbent players tend to reject the entrance of any new provider in the market. Besides, concentration movements (vertical, horizontal

and multimedia) are common. These facts have a negative impact not only on pluralism, diversity and social representativeness but also on quality and innovation.

- Since economic profit is the main, and legitimate, objective pursued by commercial media operators, they will always try to inversely optimize the relationship between production/provision costs and exploitation revenues. But as audiovisual services usually imply high fixed costs, budget limitations/reductions generally have a negative effect on content quality. This will also affect the diversity of genres and formats offered and, again, homogenization and under-provision are likely to happen. Another consequence is that the cost of quality content is partly transferred to the consumers by means of establishing access fees. This results in a restriction of the universality of the service.
- Media products are non-excludable and non-rivalrous goods. The first characteristic implies that there is a certain inability to control access to the content and charge users for it. Although technical innovation has enabled the development of conditional access systems, it is impossible to prevent the fact that a consumer paying for accessing a piece of content views it together with other users who did not pay for it. In fact, technical innovation has also enabled new ways of replication and online sharing/distribution of audiovisual content that breach copyright law. This also applies for newspapers and books. Although the simultaneous consumption of their analogue versions can be a bit more complicated, once they are digitalized, they are also exposed to the online sharing practices.
- With regard to the non-rivalrous character of media contents, this implies that, despite being consumed once or several times, their value does not diminish. Digitalization reinforces this characteristic, as audiovisual or printed content do not lose their quality after they are used or systematically duplicated.
- These two characteristics have a strong impact on the economic logics of the media system. First, since obtaining incomes from each consumer is almost impossible, and considering the high fixed costs of media production activities, market players will tend to produce only those contents and services with a high private value, and therefore capable of generating profit by means of either advertising revenues resulting from reaching mass audiences or direct payments by the users. On the contrary, those products with a high external (social) value but a limited economic profitability will be dismissed by commercial media outlets. Moreover, whenever possible, provision will be under controlled access conditions.
- The second consequence of the non-excludable and non-rivalrous character of the media products is the fact that implementing economies of scope and scale becomes the best way for the needed high investments to pay off and generate profit. Reduc-

ing competition and saving costs between phases of the value chain are the main objectives of those strategies. As indicated before, the media market tends to experience concentration movements (vertical, horizontal and multimedia/sectorial) which aim to achieve the necessary market control to maximize profitability. This phenomenon has experienced a notable peak as a result of the internationalization of markets and consumption. Today, the media system is controlled by a limited number of international multimedia/sectorial conglomerates. This fact has, of course, repercussions on pluralism. These are evident not only on a global scale but also on national, regional and even local markets. In addition, it results in an over-provision of global mainstream products that clearly hinders the options for regional, local or innovative content to reach the audience.

Besides these market failure situations, the Ofcom (2009: 3-4) also identifies other potentially conflictive issues that need to be taken into account when assessing the need for public service in the field of media:

- Although technical innovation has reduced entry and operational costs, these are still relevant market barriers for new players. This fact still makes the lack of pluralism and diversity a relevant risk.
- In addition to economic and industrial concentration, the media system is significantly vulnerable to political parallelism and clientelism. Considering the potential economic and political benefits that are at stake, the collusion between political and market players is still common and frequent (Hallin and Mancini, 2004).
- Among the stakeholders of media conglomerates, investors from other sectors are common. Attracted by the high and fast profit possibilities offered by communication markets, their goals are merely economic. Consequently, they are frequently not familiar with or simply do not care about the positive social externalities that media can provide. Their influence or control over the media outlets can determine their performance, which will be focused on obtaining economic revenues.
- Technical innovation has fostered content creation and the deployment of new distribution platforms. This has resulted in an abundant (even overloaded) and multiplatform media scenario where some citizens may have difficulties in:
    - locating and accessing certain contents and services, due to the need for new personal skills or because of the cost of the necessary devices or the associated subscription fees;
    - identifying valuable and trustworthy content and sources of information;
    - preserving their personal data and intimacy from fraudulent or undesired uses by third parties.

According to all these arguments and facts, those advocating that public service media are still necessary state that, exclusively on their own, unregulated markets and commercial media outlets are not able to achieve the entire set of societal objectives attributed to the media. As mentioned before, this is due to the fact that market players tend to consider only their stakeholders' interests, goals and profit, although legitimately so (Ofcom, 2009: 1; Sarikakis, 2010: 98; Van Dijk, Nahuis, & Waagmeester, 2006: 254).

However, market and free competition supporters disagree about that idea. To the contrary, they argue that, thanks to the evolution enabled by technology, the current media offer is more abundant than ever before. Moreover, they maintain that the multiplicity of available distribution platforms together with online diffusion and the rise of interactivity increase the users' capacity of choice. Therefore, consumers are capable of managing their relationships and their participation in the media market on their own. In addition, technology provides them with more and better tools to protect themselves from the potential negative externalities of the media system

As a result, in the new digital and multiplatform scenario, pluralism, diversity and quality are no longer in danger but in fact better ensured than in the past. Consequently, according to that ideological approach, there is no need for the State to intervene in the media market with a paternalistic ethos, public service being an example of that.

Although it is true that the role of the State does not need to be the same as it was decades ago, there may be a non-explicit enough intention concerning public interest behind those arguments (Suárez Candel, 2010: 104):

"[...] pluralism, diversity, quality, impartiality and universality have been some of the core values legitimizing media policy during the past decades, especially in the field of television [...] the significance of those concepts has evolved depending on the political context and the characteristics of each national communication system. In the digital scenario, those values do not disappear but they are challenged and even shifted by others like liberalization, privatization, commodification, competition or competitiveness. This is a result, and somehow a requirement too, of processes like media convergence and the establishment of the Information Society (Pepper & Levy 1999). For Näränen (2005), this change denotes a basic transformation of the dominant ideological paradigm: the free choice of the consumer replaces the enrichment of the citizenry as a main goal within the media system. Consequently, as Noveck (1999) states, the theoretical Information Society project fades and the Information Economy emerges. Essentially, it means that the collective conceptualization of general interest that characterized social democracy is evolving towards an individualism typical of liberalism."

Moreover, Sampson and Lugo (2003) warn against the use of the term convergence made by neoliberals with regard to public interest. According to these authors, the neoliberal discourse has instrumentalized the convergence process, which is operated like a Trojan horse. Neoliberal theses support that, thanks to the broad choice provided by technology innovation, individuals can obtain whatever they need from the free, competitive and now convergent market. Therefore, public policy for the media and public service are totally unnecessary and even inappropriate. Instead, thanks to its self-regulation mechanisms (supply/demand), the market becomes the best arena for the free expression of ideas, values and interests. It is even considered a potentially effective way of direct democracy.

However, Sampson and Lugo (2003: 87) stress the need to realize the differences between that ideological discourse and the reality resulting from convergence. As stated above, most of the forecasts about how technological innovation would overcome market failures have only partly become true. Therefore, they consider that, *"positioned at the core of a more comprehensive neoliberal discourse"*, convergence has been used to justify *"market-oriented capitalism as the framework of democracy"*.

Conclusion

Having analysed the relationship between the values and objectives attached to the concept of public service and the media system, and having discussed the appropriateness of media to achieve them as well as to what extent that task can be entrusted to commercial players, it is clear that the definition and the legitimacy of public service and its articulation are issues on which a general agreement is far from easy.

In fact, following previous theoretical contributions in that direction (Blumler & Hoffmann-Riem, 1992: 203; Nissen et al., 2006: 18; Larsen, 2010: 267), a conclusion can be drawn:

In the field of media, public service cannot be universally and unequivocally defined. It is not a concept that can be scientifically identified, measured or evaluated. Public service is an ideological and a political choice.

As previously indicated and Blumler (1992b: 29) points out, the position towards public service media has to do with the personal or collective consideration of what the media can do for society and how the objectives pursued can be achieved. Therefore, the existence and the articulation of public service media cannot be accepted or rejected in an axiomatic way. In this sense, it might be advisable to consider that excessively normative definitions tend to easily become obsolete and insufficient, so they are prone to reactivate contestation among private players.

In addition, as stated earlier, the definition of public service and its operational configuration are the outcome of a socio-political negotiation, which implies a long and complex bargaining procedure within a heterogeneous network of stakeholders, including the government, the public administration, other public institutions (such as media authorities), political parties, market players, public service operators, economic and industrial lobbies, civic associations, etc. (Jarren et al., 2001). Usually, those players do not easily give up their arguments or change their positions, which are frequently built not on scientific or pragmatic reasons but, as mentioned before, on very diverse and abstract values, including moral ones.

Moreover, public service in the field of media is not just an object, a mere recipient of political decisions, but also a public policy instrument. It is a tool used to implement a certain type of media governance, which aims to serve not the consumers but the citizens by means of guaranteeing public interest (Holznagel, 2000; EBU, 2002, 2006; Moe, 2008b; Suárez Candel, 2007, 2010; Trappel, 2008: 315; Hasebrink, 2009: 135; Jakubowicz, 2010). In addition, public service media have been also used as a tool for protecting national/local culture, identities and production industries when confronted with the non-desired effects of globalization, internationalization and the commodification/marketization of the media system (EBU, 2006; Jakubowicz, 2010; Tongue, 2010).

As a result of the complexity that characterizes the concept of public service in the field of media, the debate about it is constant and frequently results in conflict. Moreover, controversy also rises from the fact that, though legally 'isolated', public service operators also have to deal with most of the market factors and circumstances that affect the commercial players. However, the former are expected to a show different behaviour and approach to those issues, according to their public goals. As that differentiation is not always clear enough, or even possible, conflict appears. In addition, public service activities have an operational and economic impact on commercial operators. Consequently, the latter tend to advocate for a reduction or even a suppression of the former (Meier, 2003: 354; Steemers, 2003: 123; Bardoel & d'Haenens, 2008: 340).

Finally, it is necessary to emphasize that the continuity of the debate about public service is due to the ongoing evolution affecting the media and the political systems (Van de Walle, 2008; Moe, 2008c). As a result of change, the concept of public service and its articulation need to be adapted systematically. This again leads to further discussion among the 'stakeholders' within the media system. Moreover, the debate tends to have a high political profile. Academic literature and market disputes confirm that fact (Bardoel & d'Haenens, 2008: 339; Harrison & Wessels, 2005: 836; Meier, 2003: 337).

2. The Transformation of the Media: Current Trends

In this section, the main ongoing transformations affecting the media system are identified and described. This will enable us to reflect on how technology innovation and the configuration of a multiplatform scenario shape the debate about public service, as well as on how public broadcasters must face adaptation according to their special remit.

In the last two decades, the pace of technological innovation has experienced exponential acceleration. This has forced players within the media system to continuously adapt their content and services, as well as their production, distribution and management strategies, to the new possibilities enabled by technology.

In the case of television and other related audiovisual services, the main ongoing development processes are:

1. Digitalization and analogue-digital switchover of broadcasting
2. Enhancement of image technology: introduction of high definition (HDTV) and three-dimensional (3D TV) television
3. Evolution of online strategies: from the web to a multiplatform online context

Although with different timing and intensity in each national market, these innovation vectors imply similar changes in the structure, operational logics and business models of the television system across Europe. In addition, they also affect the way in which users access and consume media. Overall, they create a broad and diverse range of challenges, opportunities and risks for the players involved.

In the case of public service broadcasters, their obligations to the citizenry compel them to deal with those transformation processes in a particular way. In addition, they need to do so in order to maintain their relevance and resituate themselves within the changing media market. Consequently, the aforementioned transformations have an impact on the remit, organization and performance of public service operators.

In the following sections, these transformations are analysed with the objective of achieving a clear picture of how the multiplatform media scenario is configured. Later, together with the review of the conflicts linked to public service, this will allow us to identify and systematize the challenges, opportunities and risks for public broadcasters resulting from this context of change.

2.1. Digitalization and Analogue-Digital Switchover of Broadcasting

The digitalization of the television system has been one of the most relevant media issues in the last two decades. However, the process started earlier, in the 1950s, when the first digital production equipment was introduced into the market. That innovation enabled a more versatile processing of image and audio and made it possible to create new and spectacular special effects. However, and despite its major contributions and its duration, the digitalization of production equipment and activities did not have a direct impact on how television was received and consumed. The process was internally managed by the market. Therefore, it was not an issue of general interest.

The digitalization of television became a national policy and a social topic in the early 1990s, when it has affected transmission and then, by necessity, reception. This fact has forced the analogue-digital migration of the market players as well as of the whole citizenry.

The reasons why the media have been digitalized are diverse and complex. However, it is important to distinguish between the causes and the benefits of the process. The latter, including new opportunities for content production, the possibility of increasing the number of broadcasted channels, the improvement of the quality of image and sound or chances for interactivity, have frequently been emphasized by the market and the political discourses, which have tried to create a positive image of digitalization. However, understanding the causes of digitalization, which are frequently related to structural, business or policy issues, becomes then a crucial fact because they shape the direction of this transformation and its outcome.

According to Galperin (2004), the real causes of the digitalization of television have been intentionally hidden or not properly explained to the public. This is due to the fact that, while the general benefits can easily be linked to social goals, and this provides politicians with the arguments necessary to justify the efforts required by the migration, most of its causes and their immediate expected outcome belong to the economic and industrial fields, so the citizenry would not endorse them so easily.

Galperin (2004) identifies the following issues as the key causes of the digitalization of the television system:

- The progressive decline of the electronic equipment markets in the United States and Europe beyond the economic crisis in 1973, which resulted in an increase in their commercial imbalance with Japan and the emergent Asian countries during the 1980s.
- In the early 1990s, the international diffusion of the Information Society agenda, which included a wide array of social and economic-industrial objectives.
- In the mid-to-late 1990s, the spectrum scarcity and the need for more frequencies in order to foster the development of mobile telephony and other wireless communication services.

According to the author, the digitalization of the television system could provide solutions to the aforementioned issues. Therefore, the process has been identified by national governments as the innovation that would allow them to deal with some of their most relevant economic and industrial difficulties and to create growth. Besides, it is expected to provide important social and welfare benefits. Consequently, digitalization has become a major project and has been given high priority worldwide.

From the point of view of the market agents, digitalization was expected to create new opportunities to develop their business. Free-to-air (FTA) commercial broadcasters and pay-TV platforms operators expected to reap additional benefits by increasing the number of broadcasted channels and improving conditional access systems. Moreover, a better image and sound quality together with new, richer and more versatile content would result in a better experience for viewers. That fact would lead to higher viewing rates and more subscriptions. In addition, interactivity was identified as a main innovation trend and as a potential source of new revenue. Moreover, the compulsory adaptation or renewal of receivers was welcomed by equipment manufacturers (Brown, 2005: 99).

However, for technological, market, political and social reasons, digitalization has followed different paths at each diffusion platform. At satellite and cable networks, which are basically linked to pay-TV offers, the expected economic profitability favoured the implementation of commercially driven strategies in order to confront the analogue-digital switchover. This meant that most of the costs and efforts derived from the transition were assumed by the market players, specifically by the offer providers. Consequently, the migration towards digital television became a transparent process for the pay-TV customers of those platforms.

As a result, satellite was the first distribution platform to complete the switchover. The capability of its operators to create attractive pay-TV offers was a key element to appeal to the audience and obtain the necessary economic resources. However, the process was not always easy or economically viable due to fierce competition among players. Therefore, mergers between direct rivals were necessary in several European national markets (Suárez Candel, 2009: 144-146; 2010: 99-100).

In the case of cable networks, they are experiencing some difficulties in digitalizing their customers because their analogue offer is abundant enough and it also has a very good technical quality. Therefore, the very basic value proposition of digitalization (more channels and more quality) is not so relevant for cable customers. For that reason, cable operators have tried to make the most of the capacity of their physical networks and have developed ‘triple-play’ offers (telephone-television-internet), which have become the way to digital television for many of their users.

Nevertheless, there is still a long way for this platform to complete its switchover across Europe. In fact, in Germany, which faced the switch-off of analogue satellite broadcasting in April 2012, cable operators confirmed that they will maintain their analogue offer. With this strategy, they aim to capture those satellite customers who do not want to deal with the digitalization process. Taking a different route at making an attempt to finally convert their laggard users, cable operators in the Netherlands and Belgium are progressively reducing their analogue offer (Broadband TV News, 2010a).

In the case of the terrestrial network, the one linked to public service broadcasting and the concept of universal service, digitalization has turned out to be especially complex. The following causes are the most relevant (Suárez Candel, 2009: 148-155, 2011: 299-302):

- A complex and expensive technical deployment
- An uncertain business model and a weaker value proposition for the audience
- A conservative market reaction resulting in vicious circles
- The overvaluation and the failure of interactivity
- A dependence on public administration
- A non-transparent path for the audience

A complex and expensive technical deployment

Concerning the distribution network, digitalizing terrestrial broadcasting implies not only upgrading the existing transmitting masts but also adding new ones if proper reception and universal service are to be ensured. This requires a large investment of capital, whose source might become an issue generating conflict. In fact, competition disputes related to public subsidies have been frequent across Europe. Moreover, the need for a simulcasting period that ensures the continuity of the service temporarily increases the transmission costs for broadcasters. In addition, the regionally phased switch-off of the analogue signal, which is the most suitable strategy given the structure of the terrestrial diffusion network, requires huge planning and management efforts, an extended execution time and substantial economic resources. Finally, interference or coverage problems are common during the switchover process and further adjustments are frequently necessary after its completion. For the viewers, the implementation of digital terrestrial television (DTT) results in relevant personal efforts and extra costs, as they may need to upgrade or replace their antenna, to adapt the distribution facilities in their homes and/or to buy a new receiver (Marsden & Ariño, 2005: 22).

An uncertain business model and a weaker value proposition for the audience

The free-to-air culture frequently linked to the terrestrial offer reduces the opportunities for DTT to develop pay-TV services. This fact strongly determines the business model of the platform, which basically relies on advertising. However, not only does the latter not grow proportionally to the increase in the number of channels enabled by digitalization, but it tends to experience a polarized distribution: investments are mainly focused on consolidated channels with good audience shares. In addition, the higher amount of available advertising slots together with the inexorable reduction in viewing rates caused by a broader offer and the fragmentation of the audience may result in a decrease of the income per channel.

That situation, together with the rise of producing/rights prices resulting from the increase in competition, has created difficulties for DTT broadcasters. Moreover, the later technical deployment of the digital terrestrial platform has also jeopardized the latter's capability to take part in the distribution market. As a result, a large proportion of premium content like movies or sport events has moved to or remained in the hands of satellite and cable pay-TV operators. These facts also reduce the opportunities for new entrants to offer valuable and quality programmes and to achieve a viable position within the market. Moreover, it is also important to consider that, despite the increase in transmission capacity, digital terrestrial television cannot offer as many channels as satellite and cable operators do.

These facts reduce the value proposition of DTT in comparison to other distribution platforms, resulting in a slower adoption by the viewers (Suárez Candel, 2009: 136-155).

A conservative market reaction resulting in vicious circles

In many national markets, the oligopolistic situation of the incumbent terrestrial broadcasters has not impelled their digital transition. Those operators have tended to consider DTT as a synonym for more competition – as new players would enter their market – and less profitability as production and distribution costs would temporarily rise. Consequently, analogue broadcasters have been less committed to the digital switchover than expected or they have even been reluctant to face it (Brown, 2005). Mostly, they have not taken part in the digitalization until forced to either by unstoppable market evolution or public policy. And even then, their investments or programming strategies to launch their new digital channels have been very conservative: they often resort to reruns, their archives or cheap content.

Similarly, electronic equipment manufacturers initially showed a lack of engagement, which resulted in an under-provision of the retail market. They claimed that the poor quality of the DTT offer did not favour the sales of receivers.

Although the situation has differed from country to country within the EU, those attitudes have created vicious circles that have slowed down the digital transition of the terrestrial platform or in some cases even caused its stagnation. In addition, the total cost of the switchover has generally experienced a significant increase with regard to the initial budgets (Galperin, 2004; Suárez Candel, 2009: 136-155).

The overvaluation and the failure of interactivity

Today, it is possible to state that interactivity has been one of the most overrated benefits of the digitalization of terrestrial broadcasting. Among the obstacles hindering its development, the main ones are: the limited capacity of the transmission network to transport extra data, the dependence on an external infrastructure in order to establish a return channel, the impossibility of ensuring that television sets would be connected to it, the difficulties in universalizing the access to broadband, the higher price and/or limited availability of suitable receivers and the difficulties in establishing profitable business models. In fact, failed projects are common around Europe. Only Italy, where MHP (multimedia home platform) decoders were publicly subsidized, and the United Kingdom have seen the consolidation of interactive offers (Franquet et al., 2008, ImpulsaTDT, 2010).

It is important to consider that interactivity has generally failed in satellite and cable platforms as well. However, in the case of terrestrial broadcasting, this issue has especial relevance because interactivity was a key element of the platform’s value proposition. The benefits to be provided by this technical enhancement, like universal access to the Information Society, were strongly promoted by the political discourse. Consequently, the poor results in this area have harmed the reputation and credibility of the entire project (Suárez Candel, 2009: 136-155).

Nowadays, as connected-TV receivers are being released, the issue of interactivity is experiencing new momentum. Nevertheless, the technical approach is significantly different: interactivity does not rely on broadcasting capacity but is offered and managed via the Internet.

A dependence on public administration

Unlike other distribution platforms that have been fully liberalized, the digitalization of terrestrial broadcasting depends on approval by the government or competent public administration. In addition, by means of their decisions and policies, public authorities have a strong influence on the implementation process. Therefore, though the relevance of public intervention varies from country to country depending on the historical background as well as on the current political situation, it is possible to identify a series of public administrative steps that determine the deployment of DTT (Suárez Candel, 2009: 148):

- Political decision on tackling the digitalization of terrestrial broadcasting
- Adaptation/development of the general regulatory framework
- Adaptation/development of specific technical regulations

- Definition of the market structure and the business model by means of licensing and regulation
- Technical planning: transmission standards and adaptation/extension of the network, spectrum management, switchover, requirements for receivers, etc.
- Call, processing and resolution of licensing contests
- Design and implementation of public policies addressing the analogue-digital transition: public communication, social/market aid plans, monitoring and assessment, etc.

As a result, the digitalization of terrestrial broadcasting is inherently a bureaucratic and administratively complex process in which not only market players' interests but also the aims of the political establishment are at stake and compete among themselves.

A non-transparent path for the audience

Due to the situation described, and especially because of the uncertainty concerning the viability of pay-TV models, the market agents have not wanted or have not been able to assume all the costs derived from the migration towards DTT. Therefore, the process has been a non-transparent path for the citizens. Sometimes, it can even become a cause of exclusion for certain social groups like the elderly, people with disabilities and families or individuals earning low wages.

Besides that, the difficulty of understanding the benefits provided by DTT and/or the technical details/requirements of the terrestrial switchover can turn into important obstacles and adoption barriers, which may slow down the migration of citizens to DDT and/or minimize or jeopardize its positive outcome (Suárez Candel, 2011: 302).

These facts should be considered because, from a political and social point of view, the public service functions and goals frequently linked to terrestrial television do not disappear because of its digitalization. On the contrary, as market failure situations continue to happen, they are even reinforced and increased. Moreover, DTT has been usually identified by national governments as a basic and universal access point to the Information Society. Its deployment is expected to generalize the use of new communication services that will provide increased welfare. Accordingly, DTT requires an implementation strategy not based exclusively on economic and commercial principles and objectives but also on political and social ones (Suárez Candel, 2009).

At a national level, governments and public administrations have actively taken part in the implementation of digital terrestrial television. Nevertheless, their role has evolved from initially being mere coordinators or regulators to becoming enablers and even leaders of the process (Galperin, 2004; Michalis, 2007). After the failure of some of the first European DTT projects (United Kingdom - ITV/onDigital, and Spain - QuieroTV) (García Leiva, 2007), where commercial operators were given a leading role, it became clear that the market agents would not be able to reach a joint position concerning all the issues involved in the switchover. Consequently, in order to prevent further delays that would bring about a reduction not only in the social benefits but also in the economic and industrial ones, which were generally given a higher priority, national governments and public administrations took on the responsibility for steering the terrestrial analogue-digital migration. In fact, many market players urged that public intervention. As a result, European national governments and administrations have put into practice a wide and diverse range of policy instruments: regulation, transition strategies, switchover calendars, communication campaigns, etc. Thus, it can be stated that the implementation of DTT in Europe has become a process driven mainly by public policy. Nevertheless, the contribution of the market agents is still indispensable for designing and successfully implementing those policies (Suárez Candel, 2009).

At a supranational level, the European Union (EU) has also carried out several actions regarding DTT. These have been aimed especially at preventing the national character of this transformation process resulting in a fragmentation of the common broadcasting market, similar to that experienced during the deployment of conditional access systems or interactivity standards. Consequently, the European Commission set 2012 as the deadline for the EU's Member States to complete their analogue terrestrial switch-off (European Commission, 2005). Moreover, it published a wide variety of communications as well as benchmarking documents which aim to provide national administrations with hints and best practices about migration strategies (Suárez Candel, 2009).

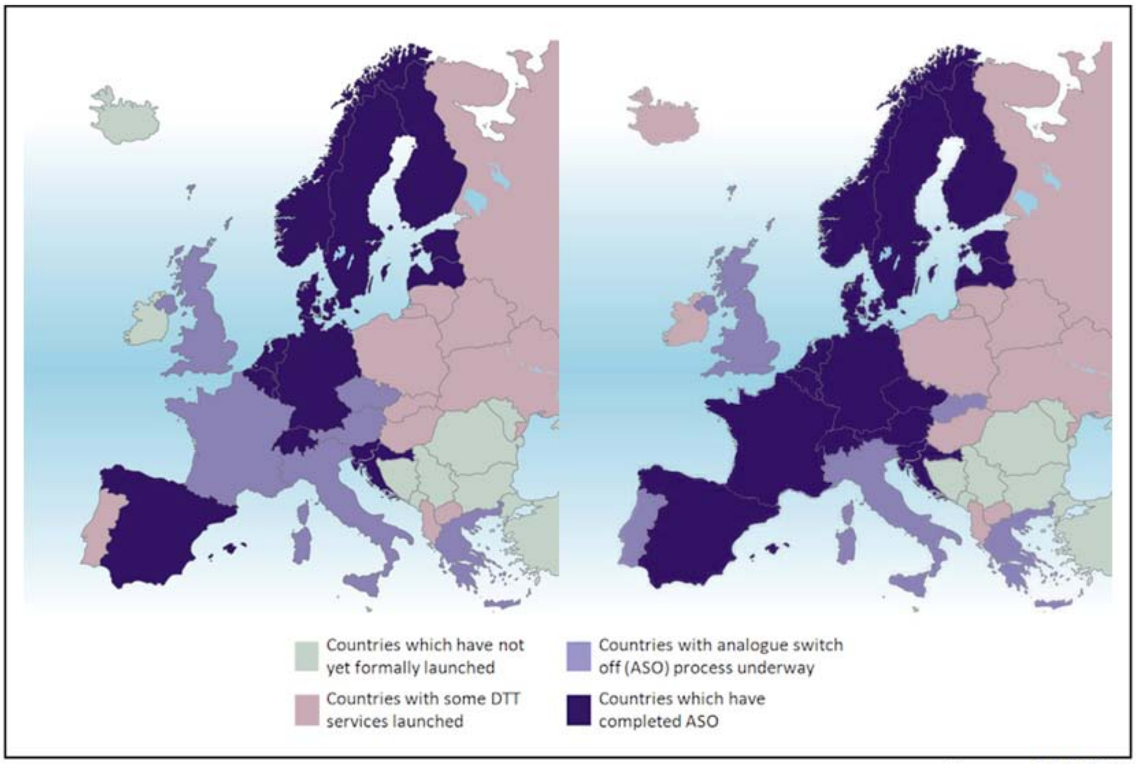
However, as has been widely discussed (Galperin, 2004; Harcourt, 2005; Levy, 1999; Llorens, 2001; Michalis, 2007; Näränen, 2005), those policies carried out by European institutions have been significantly shaped by the failure of previous industrial initiatives, such as the case of high definition television. As a result of that legacy, the EU's policies for DTT have been focused mainly on market competition and the harmonization of regulation. In those policy areas, the attributions and initiatives of the European institutions are less contested as the ones dealing with cultural issues, which include the audiovisual sector. Moreover, when addressing very important technical issues, such as standardization, the EU has delegated its decision-making capacity to market consortia like the DVB (Digital Video Broadcasting Forum). On the basis of these facts, it is possible to state that developing a proactive strategy has not been the EU's main intention when dealing with the implementation of DTT. Instead, using soft-policy instruments to create an ideological and knowledge framework that would influence national public policies has been considered a more suitable way to contribute to the success of the analogue-digital transition of terrestrial broadcasting, which has been defined as a strictly national issue (Suárez Candel, 2009).

It is important to stress that, despite the European Union's (EU) coordination goals and efforts (European Commission, 2003, 2005) as well as the similarity among those public policies implemented by the EU's Member States, the deployment of DTT within the European common market has become an asynchronous process with an asymmetrical outcome (Suárez Candel, 2011).

First of all, while several countries have already completed their switchover, others do not yet have a clear strategy for this migration process. Therefore, as Digitag already announced back in 2009, it has been impossible to meet the 2012 deadline recommended by the European Commission (European Commission, 2005; Digitag, 2009). Instead, it is more likely that the analogue-digital transition in the EU will not be completed until 2015, the limit established by the International Telecommunications Union (ITU) for re-assigning the digital dividend to other communication services than television.

Secondly, the reality of DTT – in terms of its relevance, quality and benefits provided – differs greatly among the EU Member States (Van den Broeck & Pierson, 2008; Suárez Candel, 2009, 2011). While in some countries the launch of a DTT offer has consolidated or even improved the market share of the terrestrial platform, in others the effect has been the opposite: digitalization has resulted in the release of low quality offers, more concentration and less pluralism. Consequently, in those cases, terrestrial broadcasting is progressively losing social support: those viewers that can afford extra costs migrate to pay-TV subscriptions available in other platforms; among the rest, the value perception drops significantly.

Graphic 2: Evolution of the Digital Terrestrial Switchover across Europe (2011)



Source: DIGITAG

2.2. Enhancement of Image Technology: High Definition (HDTV) and Three-Dimensional (3D TV) Television

High Definition Television

Deploying high definition television (HDTV) is a natural evolution of broadcasting technology, and it becomes necessary as the size and resolution of screens grow (Digitag, 2007; Kouadio, 2009). In fact, HDTV is not a new issue but an old one that was initially tackled during the 1980s. Back then, it was considered the next step in technological innovation and an opportunity for national equipment manufacturing industries to establish a worldwide market. That resulted in huge investments, intense public policy activity and a number of development programmes in Japan, Europe and the United States. However, as the exhaustive academic analysis of that experience has pointed out, the main obstacle to the success of HDTV in that moment was the huge amount of spectrum that it needed. In the early 1990s, digitalization appeared as a solution to reduce those spectrum requirements. But due to the new benefits that it was able to provide, it replaced high definition as a main innovation vector and drastically changed the direction of evolution of the audiovisual market (Suárez Candel, 2009).

At the beginning of the 2000s, the increase in the size of the screens, together with the improvement of digital compression techniques, revived HDTV as the next development step (Graziano, 2005; Laven, 2007). Parallel to digitalization, the introduction of high definition has become a reason for consumers to renew their receivers. Consequently, similarly to the expectations back in the 1980s, electronic equipment manufacturers have welcomed HDTV as an opportunity to increase their sales and revenues. Besides, HDTV has also been fostered by the introduction of the Blu-ray format, the successor to DVD. This has especial interest for the film/video industry, which is promoting the remasterization of its catalogues in order to create a new sales window. In addition, the release of game consoles and domestic camcorders with high definition capability has contributed to creating momentum for HDTV (Digitag, 2007; Screen Digest, 2008b, 2009b).

For viewers, HDTV means a better visual experience, an added value that could justify subscribing to a pay-TV package. For that reason, HDTV has rapidly generated hope for commercial broadcasters and platform operators. Like equipment manufacturers, they also expect that the deployment of HDTV will result in an increase in their revenues. In that sense, high definition content is a key element to create pay-TV offers that counterbalance the multiplication of free-to-air channels enabled by digitalization. In some markets, the latter has hindered the growth of pay-TV operators and/or increased their churn rates. Moreover, HDTV becomes a valuable asset for satellite operators when competing with cable offerings that combine television, telephone and Internet access, or with new platforms like IPTV or online audiovisual services, which are capable of offering on-demand content (Digitag, 2007; Screen Digest, 2009a).

Several factors must be taken into account concerning the deployment of HDTV. First, it requires a renewal of production equipment as well as adapting producing routines and techniques. Although the cost of the equipment decreases progressively, producing or acquiring high definition content is still 10-30% more expensive than the cost of standard definition (SD) programmes. However, it is expected that HDTV will progressively become the default format (Digitag, 2007; Kouadio, 2009). Secondly, the transmission of HDTV has strong implications for spectrum management. The technical particularities of each distribution platform result in a different capacity to launch HDTV channels. In the case of satellite and cable, there are no particular issues. However, in the case of terrestrial broadcasting, deployment is conditioned by the scarcity of frequencies, as well as the generalized aim to release some of them so they will be used by other communication services (digital dividend). Similarly, in the case of IPTV or open online distribution, bandwidth limitation becomes a potential obstacle for the release of high definition content.

Due to both factors – costs and transmission capacity – the implementation of HDTV depends on the choice between image resolution and the number of channels to be distributed. Around the world, different approaches to this dilemma can be observed: in Japan, the United States and Australia, digitalization and HDTV have been tackled together and image quality has been given priority; in Europe, the opportunities that increasing the number of channels would imply for the market as well as for pluralism and diversity have been considered more relevant. For that reason, in most European countries the deployment of HDTV service has become a second migration process for viewers after the analogue-digital transition and the extension of the offer (Graziano, 2005; Laven, 2007).

Furthermore, the evolution of transmission standards linked to the deployment of HDTV services must also be considered, especially by those countries that are still dealing with their analogue-digital switchover. If not handled appropriately and on time, the substitution of DVB-T2 and DVB-S2 standards for DVB-T and DVB-S may result in an obsolete implementation that will force not only citizens but also market players and public administration to deal with a second migration within a short period of time. This would result in additional costs and efforts for all of them, which probably would slow down the social adoption of digital and high definition television and jeopardize the expected outcome (Graziano, 2005; Laven, 2007).

In the field of reception, coordination between broadcasters and equipment manufacturers is needed so that content and devices are released simultaneously. Moreover, in order to avoid deceptions that might hinder the adoption of HDTV, it is important that HD-ready receivers, which are capable of displaying a high definition image but cannot receive a HDTV signal (they require an external set top box), and HDTV receivers, which include a high definition tuner, are clearly differentiated (Screen Digest, 2008b).

Despite those issues and risks, it is possible to state that the deployment of HDTV is happening and the audience wants it. As indicated earlier, in many cases it is a parallel or 'right after' process with regard to the analogue-digital transition. However, and despite trying to profit from the appeal of major events like the football World/European Championships (2006, 2008 and 2010) and the Olympic Games (2008 and 2012), the release and penetration of new high definition channels are still unequal among platforms across Europe. While the United Kingdom, together with France and the Nordic Countries are the most developed markets, Germany and Spain fall behind the average figures as a result of the weight of their national cable and DTT markets respectively (Screen Digest, 2006, 2007a, 2007b, 2008a, 2010c, 2010e). Moreover, it is important to consider the following fact: although the diffusion of HD-Ready and HDTV screens is growing, strongly fostered by the 'flat-screen' phenomenon, the high definition television services and the penetration of Blu-ray are being adopted more slowly than expected. In 2009, although Blu-ray figures increased by 73%, standard definition DVDs still accounted for 95% of sales in the United Kingdom, France and Germany (Screen Digest, 2009a, 2010b, 2010d).

At this point, it is important to consider that HDTV may experience a migration process similar to the one followed by DTT. Consequently, an increase in the offer and establishing a switch-off date for standard definition transmissions would be not only recommendable but necessary.

Moreover, high definition is momentarily limited to certain types of contents: sports, cinema, documentaries and major events. These can be marketed as pay-TV or generate enough advertising revenues to cover their extra costs and generate profit. In the case of FTA broadcasters, offering a duplicate HD version of their main channels, which would generate extra advertising income, is also a usual first step. In addition, the configuration of ‘mix channels’ including SD contents and some special events in HD is also a common initial strategy (Rosés, 2007; Screen Digest, 2007b).

Three-dimensional Television

Similar to high definition, the possibility of producing three-dimensional (3D) audiovisual content was an innovation trend some decades ago, especially in the field of cinema. It has now been recovered as an extra feature for audiovisual services. Cinema theatres and production studios have been the first ones to back 3D, seen as an opportunity to generate extra revenues, as tickets can be sold for a higher price, as well as a chance to create a new market window for old titles or to differentiate new releases from competitors (Screen Digest, 2008d).

In the case of television, the first 3D TV sets were available on the retail market in 2010. Different sources estimate that 3.2 to 4 million units were sold worldwide during that year, using the football World Championship in South Africa as a driving event. However, although manufacturers seem to be satisfied with sales figures, the 3D TV market is growing slowly and demand is still weak. 3D sets are affordable only for top tier consumers. The rest of the audience is waiting for an upcoming reduction of prices (Broadband TV, 2010c). In addition, content demand among those already equipped with a 3D receiver is still low. Poor sales rates of 3D glasses, not reaching even a 1:1 correlation with the amount of receivers sold, show that not every customer buying a television set with 3D capability intends to use that feature. In fact, having to use those special glasses might become a very relevant obstacle to broad adoption (Broadband TV, 2010b).

The demand is also low because the offer is so far neither very broad nor accessible. Although 3D content is becoming available across Europe, it is generally linked to top-premium pay-TV packages and mostly served on-demand. Scheduled channels are still rare. With regard to genres and formats, similar to HDTV, 3D production is mainly focused on sports, cinema, with a special focus on animation and children's movies, documentaries and major events (Broadband TV, 2011a). Broadcasters and platform operators are trying to obtain the maximum profit from early adopters with that commercialization strategy. However, the situation is expected to change in the near future as competition increases. Once a pay-TV operator introduces 3D services in a market, its competitors tend to follow in short in order to avoid falling behind and losing competitiveness. That should result in the release of more affordable offers (Digital TV Europe, 2011c).

Concerning technical issues, the market is evolving without having defined a set of common standards, and different production formats and glasses typologies are being used (Screen Digest, 2010a; Digital TV Europe, 2011b). This uncertainty is a serious obstacle for creating economies of scale, restricting the initiatives that could be developed by the most relevant European broadcasters. The latter are waiting for stronger demand and a less technically fragmented scenario (Broadband TV, 2011b). However, as staff from the BBC have stated, it could also happen that 3D TV will never become mainstream (Digital TV Europe, 2011a).

2.3. Evolution of Online Strategies: from the Web to a Multiplatform Online Context

The possibility of detaching media contents from their traditional physical support and distribution networks is one of the main innovations enabled by digitalization. Together with the development of the Internet, a worldwide and, until now, neutral distribution platform, that fact is changing the entire media paradigm. The resulting online scenario, also called 'connected context', brings new possibilities for convergence, hybridization and redistribution of media content and services. According to Trappel (2008: 316), this results in the fact that audiovisual content acquires new properties. Following that approach, and additionally considering the multi-node network architecture of the Internet and the versatility of digital information, the list of new essential features of media content suggested by Trappel can be extended to include the following:

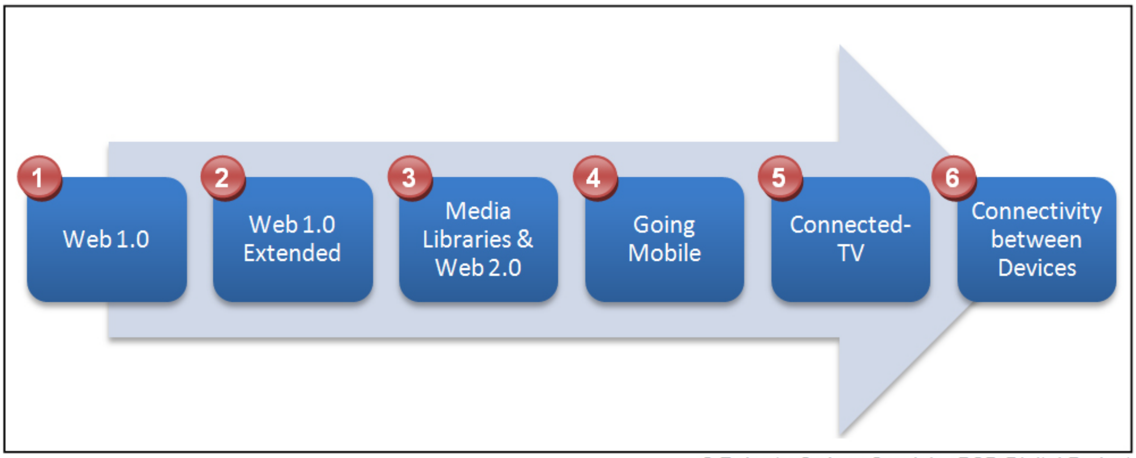
- Non-linearity: on-demand, immediate, anytime access to anything (available).
- Mobility + portability + interoperability = ubiquity (anywhere – geographic/device)
- Semantics: content can be given extra meaning using attached metadata. As a result, it can be indexed, searched, interconnected/related, geolocated, etc.
- Hypertextuality: connection and transition between contents.

- Interactivity (+ connectivity): from unidirectional to multidirectional (multimedia/multiplatform/ multidevice).
- Participation: viewers use social networking tools to comment, value, share, recommend, etc. the content they consume (adding meaning). In addition, they share their own content.
- Versatility: advanced personalization and customization.

Nevertheless, the development of these characteristics and their impact on media consumption practices essentially depend on the gradual geographical implementation and social penetration (adoption) of the Internet as well as on the increase of its bandwidth. Since the mid-1990s, when access to the Internet was opened to the general public, and according to these criteria (implementation, adoption and bandwidth) plus the evolution of computing and electronic devices, the evolution of the online strategies implemented by broadcasters can be segmented into 6 waves:

[Concrete dates are not provided due to the differing development pace between countries]

Graphic 3: Evolution of Broadcasters' Online Strategies – 6 Waves



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1st Online Wave: Web 1.0

The development of a website that provided corporate information as well as basic facts related to their programming grids and services was the initial online strategy applied by audiovisual media outlets. Basically, their first websites were a text-based public communication tool similar to a teletext service. In addition, they also became an extra source of advertising revenues.

2nd Online Wave: Web 1.0 Extended

As the penetration and the broadband capacity of the Internet grew, media outlets began to expand their online services by adding audiovisual content, including streaming or downloadable video/audio pieces and podcasting/alert services. In addition, the online information about the aired programmes became richer in amount and format, adding extra value to the latter.

Gradually, online distribution became an additional exploitation window for contents. Although limited, online archives were created. In addition, with the objective of increasing their amount of visitors and advertising revenues, media websites soon offered information services not directly related to their programmes. Moreover, broadcasters started to realize the relevance and potential profitability of their online audiences and built groups of interests and communities around their online portals.

3rd Online Wave: Media Libraries and Web 2.0

The growth of broadband penetration and bandwidth together with the adoption of the Internet by the citizenry as a platform for accessing and sharing information have created the appropriate conditions for the improvement and sophistication of online distribution of audiovisual content, for the appearance of the Web 2.0 (the social web) and for their convergence.

As a result, websites managed by audiovisual media outlets have left behind the text-oriented structures and limited interactivity that characterized them during the Web 1.0 model and have turned into advanced online and multiplatform audiovisual portals/libraries that grant access to on-demand content, including streaming or downloadable video/audio pieces and podcasts together with interactive services. Moreover, the release of classification and tagging tools, together with the improvement of search engines and geolocation, enable upgraded management of the significant abundance of available content. This leads towards a more personal and customized user experience.

Gradually, online distribution has become an additional exploitation window for content. In that sense, catching up on recently aired programmes is already a common service offered by broadcasters and enjoys growing popularity among the audience. Similarly, ‘before’, ‘parallel’ and ‘after’ online events and additional content releases related to scheduled programmes are becoming more frequent. Moreover, exclusive online materials are gaining relevance and the value of the operators’ archives is increasing.

In addition, the online activities/offers operated by media outlets are shaped by the Web 2.0 (the social web). Social networking tools, like those that enable commenting, voting, suggesting, sharing, recommending, liking, highlighting, etc., are extensively and intensively applied. Gradually, they are becoming essential features of any media practice for certain groups of the audience. Together with the popularization of user-generated content, they foster the transformation of traditional passive viewers into active *'prosumers'* (producers + consumers of information/content).

Therefore, within this 3rd wave, online audiences are starting to be considered not marginal or secondary but rather a crucial asset. They can counterbalance the loss in viewing share experienced by broadcasters due to the increased competition resulting from a broader availability of television channels and distribution platforms. Therefore, fostering online consumption and participation is a way for media outlets to maximize exploitation of their content, as well as to increase the traffic on their sites, which may result in additional revenues, either for advertising or subscription formulas.

According to these facts, the interconnection of broadcasting and online activities is now considered a must. Although the former still plays the leading role, the latter is no longer a mere replica or a complementary extension. The online offer is gradually developing its own identity. In the most advanced cases, it has become a clearly independent platform and, for certain groups of the audience, their main access point to media.

In the case of traditional broadcasters, the increasing preponderance of online distribution has relevant consequences for their internal structures and operational strategies. First of all, it results in the need to consider adopting 360º multiplatform strategies in the fields of production and distribution. Moreover, it implies losing the monopoly over the provision of audiovisual content that broadcasters enjoyed during the offline era. Consequently, they should now compete for the users' attention in a global scenario, as the Internet makes it possible to access media offers worldwide. In addition, unlike traditional broadcasting networks, the Internet makes it possible for almost everybody to distribute content or services. Thus, not only is competition increasing among professional and institutionalized media outlets, but the latter now also have to face the presence of third parties with very diverse profiles. As a result, broadcasters are also losing their intermediation power.

4th Online Wave: Going Mobile

The tendencies described above become more intense once the services are also available on connectable mobile devices (smart-phones or tablets). As they are much more personal than television screens and even laptops, they impel a further segmentation, personalization and customization of media and communication services. Moreover, the mobile consumption culture (more monetized) and contexts are substantially different from the reception patterns of traditional media. As mobile receivers are almost always available for the user, they increase the value of immediacy and ubiquity. Consequently, they contribute greatly to the consolidation of the ‘anything, anytime, anywhere’ paradigm fostered by online distribution. In addition, geolocation becomes a valuable and more frequent add-on.

These particularities result in new content formats and information services which are generally ready to be distributed, experienced and shared in social networks. Even augmented reality services start to gain momentum. Concerning the web, in certain cases it becomes rather inadequate or even obsolete for mobile consumption due to the technical characteristics of the portable devices. That is the starting point for the release of applications (APPs) that have specific functionalities that address particular users’ needs while reducing the technical resources needed (memory, battery, screen size, etc.). Their growing popularity is resulting in a very relevant trend that trespasses the borders of mobile receivers and is also being adopted by other connected receivers (computers, games consoles, television sets, etc.). Online apps are now considered the next step for interactivity as well as for generating new revenues.

Concerning the market structure and its operational logics, the jump to the mobile sphere implies that media outlets will now need to bring their interests and objectives into conjunction with those of telecommunication operators and equipment manufacturers, which are in a strong position to determine the evolution paths and trends of the market. Although content is still ‘the king’, networks as well as mobile devices with particular technical specifications and features have gained more significance as market gatekeepers. In addition, as pointed out above, the new access opportunities to media and communication services that portable devices enable result in a scenario of increased competition: on the one hand, users find a new window where they can invest their time and economic resources; on the other, traditional and new content providers find a new way to circumvent the gatekeeper role that broadcasters had until now. In the online and mobile scenario, the former are able to directly provide the consumers with their contents and services.

5th Online Wave: Connected/Hybrid Television – The Convergence between Broadcasting and Broadband Services

Parallel to the emergence of the mobile media market, the forecasted convergence between the Internet and television is one of the major transformations that the media system is currently experiencing. Essentially, it ends with the ‘isolation’ of the main screen, which is now incorporated into the online world.

It is important to specify that this convergence is not exclusively about accessing the web or other online services. By means of a connected television set, users are now able to access ‘hydrid television’ services. Those are the outcome of merging broadcasted and Internet contents in order to create a coherent and seamless enriched viewing experience (Digitag, 2009b; Vermaele, 2009). The online connection enables pulling complementary materials or additional information related to a programme from the Internet as well as independent contents or applications that would not be broadcasted due to the limited capacity of the spectrum and/or transmission costs. However, the user does not spot the difference between the origins of the displayed content.

In that sense, the new chances for satellite and terrestrial broadcasters with regard to interactivity can contribute to increasing their value proposition in comparison with cable or IPTV platforms. Moreover, it could also result in a higher personalization of the offer by enabling on-demand consumption and by applying geolocation criteria, which would make it possible to develop new business models as well. However, being connected also means that the television screen may become a window for other parties using the Internet as a distribution platform.

Nevertheless, these options very much depend on hardware and software solutions as well as on business models. Similar to the deployment of HDTV, 3D TV or smartphones, the implementation of connected television has essentially been led by equipment manufacturers. Companies like Sony, Samsung, Panasonic, Philips, etc. are incorporating their proprietary connected-TV technical solutions into their receivers; they control the offer by building ‘walled gardens’ for their users after reaching agreements with content providers. In those cases, having a connected-TV receiver does not automatically enable the viewer to freely surf the Internet on the living-room screen. It just grants access to a particular offer of services that resort to the domestic broadband connection in order to pull data from the Internet.

From the broadcasters’ point of view, this fact means that they need to reach agreements with equipment manufacturers to be able to develop and distribute their own connected/hybrid services to different devices. Consequently, if not tackled on time, connected-TV may have serious implications for them.

First, it will reinforce and accelerate the disintermediation tendency previously mentioned as well as the loss of their role as gatekeepers. This means that they will not only no longer control on an exclusive basis what is displayed on the screen but that they will also be forced to negotiate with equipment manufacturers to be able to develop and distribute their own connected/hybrid services to different devices. This fact will affect the distribution of power along the value chain of the television system as well as the allocation of revenues.

Secondly, the increasing relevance of online audiovisual content distribution platforms like Youtube, Hulu, Zatoo, Joost, Netflix, iTunes, LoveFilms or Apple TV, among others, which now might also be accessible on the main screen, will imply higher competition and the consolidation of on-demand consumption. This implies a serious risk for the advertising-based business model run by FTA broadcasters as well as for traditional pay-TV operators. Even their own connected/hybrid services could have a cannibalizing effect on their linear channels.

Third, a progressive increase in the fragmentation (size and dedicated time) and the segmentation (by interests, socio-economic variables) of the audience is expected to occur parallel to the consolidation of connected/hybrid services. In fact, some segments of the audience, such as young adults and teenagers, are progressively leaving behind linear and scheduled channels. As a result, traditional broadcasters will lose market weight, relevance and visibility.

Consequently, to deal with these threats and to counteract the individual initiatives by equipment manufacturers that have already been marketed, several industry consortia led by broadcasters have been created across Europe:

YouView

The BBC is leading this British initiative (previously named Canvas Project), which aims to create an open and interoperable specification for Hybrid TV services. The British public media corporation wants to make profit on its research capacity and innovation experience as well as its market relevance to impose its ‘home-made’ solution, at least within its domestic market. That would reinforce its leading role and minimize its dependence on third parties. In addition, the BBC aims to develop a ‘final solution’ that counteracts the excessive multiplicity of technical standards that has characterized the configuration of the multiplatform scenario and resulted in a notable rise in costs linked to the expansion/adaptation of its services.

> Since its launch in 2008, the YouView project has experienced a range of difficulties and delays. Currently, first receivers are expected to be marketed in summer 2012.

HbbTV

The multisectorial French-German-led initiative HbbTV (Hybrid broadcast broadband television), in which public broadcasters have a very relevant role, is also working on defining a standard solution for the provision of hybrid television services.

HbbTV pilot projects and regular services are already available in several European countries.

Other initiatives

Besides these initiatives, the DVB consortium is also tackling the issue by means of adapting its MHP (Multimedia Home Platform) specification, now renamed GEM (Globally Executable MHP). Moreover, players from the Internet market like Yahoo, Apple or Google are also releasing their own connected-TV sets and services. In these cases, alliances with manufacturers are frequent.

The result is that connected/hybrid television is being developed and promoted following different strategies and goals. This may become a threat for articulating a common European market as well as a limitation for developing economies of scale. The tendency is very similar to the non-interoperable ones followed during the implementation of previous innovations like conditional access systems.

Nevertheless, and following the success of the BBC's iPlayer, deployed with a multiplatform range, or similar online audiovisual services implemented by other broadcasters, connected/hybrid television is the opportunity for transferring online strategies to the main screen. With that move, the old and passive television sets and services will be replaced by the new 'smart' and 'social' television, as the market has named it. This may provide broadcasters with the chance to recover part of their lost audience. However, several issues need to be considered. First of all, if online-pulled content is to be displayed on big and HDTV screens, it needs to increase its resolution to avoid poor quality. Besides the cost of adapting the online catalogues, this would also mean a higher online data transference, which can result in higher costs for the content providers (broadcasters) and, depending on each user's broadband plan, on higher bills. At the same time, if bandwidth is not gradually augmented and the quality of the service ensured, connected-TV may encounter difficulties in reaching certain areas or in consolidating as a mainstream service.

6th Online Wave: Connectivity between Devices

A new scenario where the simultaneous use of devices and their complementarity enrich the audience's media practices emerges from the popularization of domestic Wi-Fi networks and the increasing connectivity features of electronic equipment.

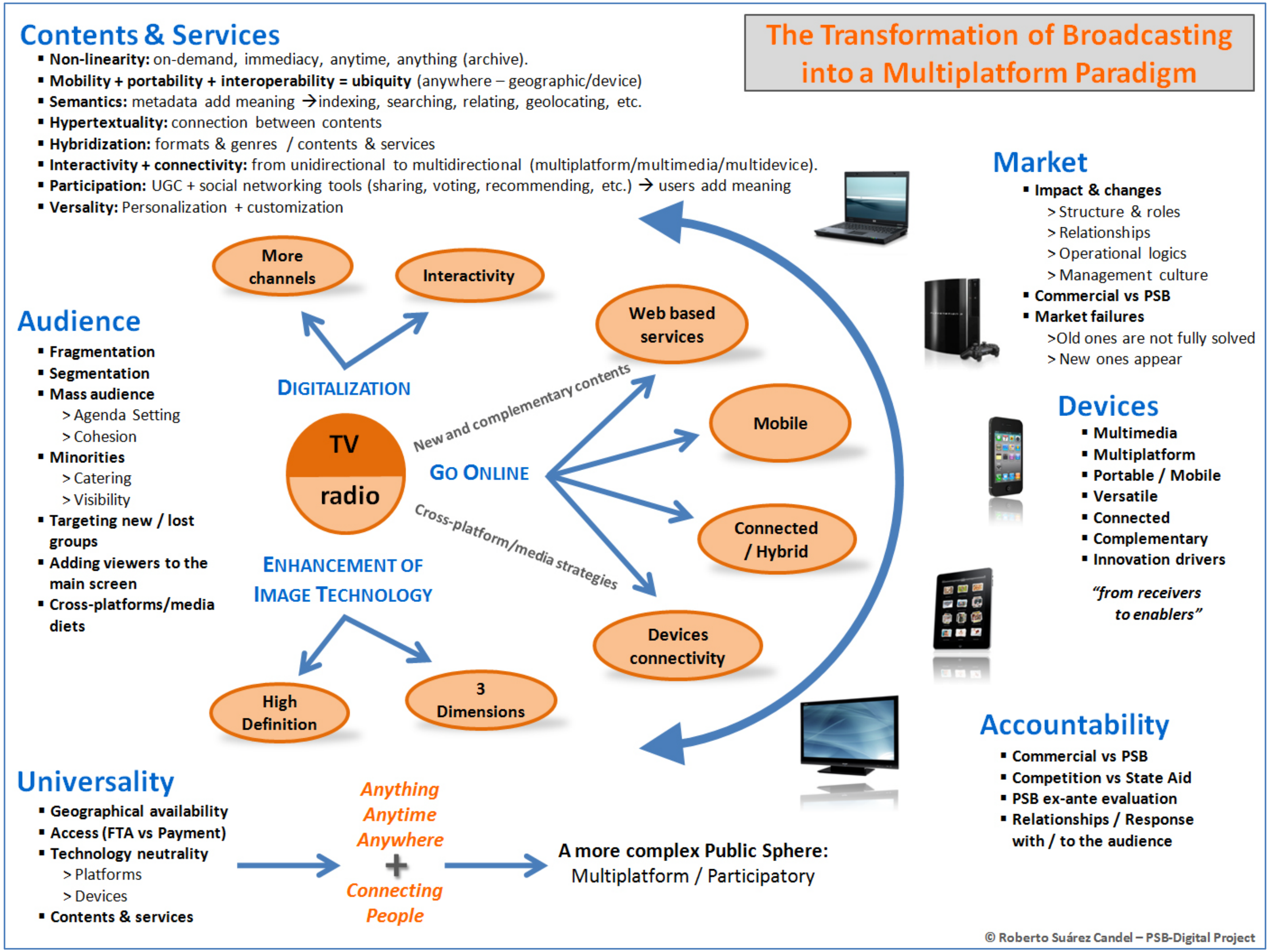
More often, viewers connect their computers to their big and flat screen to watch online content, their own audiovisual material or to access websites and social networks. Besides, laptops and mobile devices like smart-phones or tablets complement the television experience, providing extra information and services related to the content displayed on the main screen and even interacting with the latter. They also become very useful tools for personalizing and customizing the consumption of audiovisual content by allowing the creation of personal profiles, content libraries, lists of favourites, etc. Moreover, they have also enabled sharing experiences and content on the social networks comfortably while watching a tv programme.

The connectivity and interaction between the main screen and these 'companion devices' is certainly one of the fields that offers broader scope for development, resulting in a more multi-faceted domestic audiovisual experience. Thus, together with the implementation of connected/hybrid-TV services, the complementarity among devices could contribute to enhancing traditional broadcasters' value proposition. In fact, since these secondary screens are gradually capturing the audience's attention, the hegemony of the television set as first screen starts to be strongly contested. In this scenario, the so-called 360º multiplatform strategies will not only enable interesting synergies but will also become completely necessary in the near future. Thus, together with the implementation of connected/hybrid-TV services, the complementarity among devices could contribute to enhancing traditional broadcasters' value proposition.

Nevertheless, it is also very important to avoid overly optimistic or deterministic approaches because the 'lean-back' attitude is still the most common among the audience and linear television maintains its mainstream status.

2.4. The Multiplatform Media Scenario: A New Paradigm

The following graphic **[see next page]** synthesizes and systematizes what has been reported concerning the transformation processes currently affecting the media and particularly the television system. It pictures the ongoing transformation of broadcasting into a multiplatform paradigm.


The Transformation of Broadcasting into a Multiplatform Paradigm
Contents & Services
Non-linearity: on-demand, immediacy, anytime, anything (archive).
Mobility + portability + interoperability = ubiquity (anywhere – geographic/device)
Semantics: metadata add meaning →indexing, searching, relating, geolocating, etc.
Hypertextuality: connection between contents
Hybridization: formats & genres / contents & services
Interactivity + connectivity: from unidirectional to multidirectional (multiplatform/multimedia/multidevice).
Participation: UGC + social networking tools (sharing, voting, recommending, etc.) → users add meaning
Versality: Personalization + customization
Audience
Fragmentation
Segmentation
Mass audience
> Agenda Setting
> Cohesion
Minorities
> Catering
> Visibility
Targeting new / lost groups
Adding viewers to the main screen
Cross-platforms/media diets
More channels
Interactivity
DIGITALIZATION
TV
radio
ENHANCEMENT OF IMAGE TECHNOLOGY
High Definition
3 Dimensions
GO ONLINE
New and complementary contents
Cross-platform/media strategies
Web based services
Mobile
Connected / Hybrid
Devices connectivity
Market
Impact & changes
> Structure & roles
> Relationships
> Operational logics
> Management culture
Commercial vs PSB
Market failures
>Old ones are not fully solved
> New ones appear
Devices
Multimedia
Multiplatform
Portable / Mobile
Versatile
Connected
Complementary
Innovation drivers
"from receivers to enablers"
Accountability
Commercial vs PSB
Competition vs State Aid
PSB ex-ante evaluation
Relationships / Response with / to the audience
Universality
Geographical availability
Access (FTA vs Payment)
Technology neutrality
> Platforms
> Devices
Contents & services
Anything
Anytime
Anywhere
+
Connecting People
A more complex Public Sphere:
Multiplatform / Participatory
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3. Public Service Broadcasting in the Multiplatform Scenario: Conflicts, Discourses and Adaptation Issues

As a result of the innovation processes experienced by the media system, the need for public service and its scope again become major issues for debate. Moreover, public operators are forced to deal with a wide variety of external and internal changes.

In this section, taking into account the analysed complexity of the concept of public service and the ongoing changes in the audiovisual sector, the current conflicts and debates related to public service as well as its adaptation needs are identified. The final outcome is their systematization into a model of challenges, opportunities and risks for public service in the multiplatform scenario.

3.1. The Conflict: The Extension of Public Service Activities

The major current conflict regarding the definition and role of public service media is the extension of their activities. This issue involves not only the release of additional television or radio channels but particularly the use of new distribution platforms such as the Internet and the development of online and mobile services.

The discussion arises because of the different and even contrary expectations that public and commercial players have with regard to their opportunities for development in the new media context. The latter consider that new online and mobile services belong exclusively to their scope of activity. These are seen as their natural development lines and essential sources of new revenues that will ensure the viability of their business in a more fragmented, segmented and abundant market where competition and revenue evolve inversely. Consequently, following the discourse dominant nowadays, the provision of those services by public operators is considered a major handicap for the health and growth of the market. It is argued that, even if public and commercial players do not compete for economic resources directly, the availability of the public offer potentially reduces the audience of commercial outlets. That fact has a negative impact on the latter's revenue and hinders their capacity to innovate.

In order to defend their own positions, those advocating or speaking against an extension of the role of public service in the digital and multiplatform scenario resort to normative and theoretical arguments that have been described previously (Suárez Candel, 2010: 109):

> "On the one hand, market agents argue that the paternalistic rationale that sustained public service in the analogue context can no longer be justified in a free competition scenario where digitalization and convergence allow overcoming previous technical limitations and market failures. From that point of view, supply and demand mechanisms together with a plentiful offering allow the citizens to choose better their

media consumption according to their needs and desires. At the same time, they guarantee and even improve pluralism and diversity. Market agents also consider that the current multiplicity of distribution platforms ensures the universality of access to media. Moreover, they criticize PSB funding mechanisms, which are seen as distorters of market competition.

On the other hand, public broadcasters argue that those values and social aims connected to the public interest that once legitimated their existence not only are still valid but they have become more significant in the new media scenario. PSB is a suitable option for ensuring editorial independence in the face of economic and industrial concentration as well as supplying the audience with a diverse offering as an alternative to the homogenization of the programming grids. PSB can also set high quality standards for content production, for upholding the status quo of journalistic rules and standards and for guaranteeing the maintenance of pluralism and social representativeness, which are not automatically achieved just by making an abundant offering available. In fact, the new possibilities that digital technology implies, together with the synergies that a multiplatform distribution system can generate, are seen as opportunities to improve PSB and to achieve a better fulfilment of its remit"

In the end, both positions aim at the same objective: capitalizing those opportunities and benefits enabled by technology according to their own interests. Consequently, the measures to deal with the conflict will depend on the priority and relevance given to public and private interest respectively as well as to the values generally linked to public service.

3.2. The Discourse: Current Arguments against/for Public Service

The debate about public service in the field of media has been constant since its creation. Therefore, it could be considered an element inherent to the concept. Nevertheless, the topics addressed (mostly its legitimacy and definition, its articulation, its performance and its accountability) and the intensity of the discussion have varied along the different phases experienced by the media system as well as among national cases (Van Cuilenburg & McQuail, 2003). Moreover, the debate has taken place in different arenas, including the political sphere, the market and academia. The relevance of the contributions made by players from each of those contexts has also fluctuated.

With regard to the periods or phases, the direction of the debate during the decades of public monopoly was more focused on aspects like the legitimacy of the service and its definition. Back then, it had a clear normative bias and took place mainly in the political-academic sphere. The values, objectives and functions intended to be attributed to public service were the main discussion topics. Concerning the legitimacy of public service, it was generally questioned but without the aim of jeopardizing it. Moreover, how to adapt the performance of its operator(s) in order to fulfil its remit was another relevant issue of debate (Nissen et al., 2006: 5).

After the abolition of public monopolies, the discussion has gradually become less normative and more pragmatic. Consequently, the contribution of the market players has increased notably. In fact, it might be possible to state that, nowadays, the discourse about public service is mostly controlled by commercial players. In that sense, although still contested, legitimacy and definition are now relevant not due to their normative or theoretical implications but because they determine what content and services can be offered by public operators and in what platforms they can be present. As previously pointed out, this controversy results from the extension opportunities enabled by technology. Thus, the current debate about public service in the media is essentially focused on its operative limits and its impact on the market.

Arguments against Public Service

In order to understand the direction of the ongoing discussion, it is important to consider the ideological context where it is taking place. In the last two decades, an elaborated critical discourse about public interest, public services, social welfare and the role of the state in their provision and promotion has been tailored. Nowadays, the peak of neoliberalism reinforces the hostile attitude of the market against public service operators.

According to Van Cuilenburg & McQuail (2003), Sarikakis (2004), Harrison & Wessels (2005), Michalis (2007, 2010), Moe (2008a), Van de Walle (2008) and Jakubowicz (2010), that discourse is built upon the following arguments:

- Private/commercial market players are able to provide any content and service in a better, faster and more efficient way than any public operator.
- Due to their oversized structures and outdated professional routines, public service broadcasters are usually slow and inflexible, so they cannot keep up with the pace of innovation. In addition, their low efficiency results in high fixed costs for the public budget.
- The inherent paternalist ethos of public service results in an elitist offer that is ignored by the audience. On the contrary, commercial broadcasters, pushed by consumers' demand, tend to provide them with what they want and value.
- Due to their public funding, public service operators are politically dependent and nepotistic.
- Public funding distorts free competition and hinders private companies' innovation and development capacity.
- Economic efficiency and expansion are necessary to generate economic and industrial profits that will later result in social welfare outcomes. Accordingly, a major relevance could be attributed to the capacity of the market players as providers of social benefits. In fact, they could take over some functions previously assigned to public operators. This would result in a reduction of public expenditure.
- Internationalization and globalization processes require adapting national markets, which need to be more competitive in order to prevail. That goal can be properly

achieved only by means of de-regulation and non-interventionism, which will favour the natural dynamism of market players. Regarded as an interventionist public policy tool, public service can only become a burden, ballast against development.

- The European political paradigm has shifted away from the post-war social-democratic ideals as well as from the Keynesian social welfare principles and is evolving towards a capitalism based on individualism and choice/abundance, which are considered the pillars of freedom as well as indicators of quality life. This change is presented as logical, positive and inevitable. Accordingly, as public service was created in a past and very different political, technological, market and social context, it is stated that it has become obsolete.
- In the current scenario, the old reasons ('market failures') supporting the public provision of media services have been overcome thanks to technology innovation and to the development of free market and competition.

The consolidation of that discourse has resulted in an ideological paradigm that strongly contests the existence of public service in the field of media. The goal of those supporting that position is not debating about the concept but achieving a radical limitation or even the eradication of the service. Consequently, by means of an axiomatic and repetitive articulation of the ideas mentioned above, they intend to shape the perception and conception of public service not only at a political level but also targeting the public opinion.

Arguments for Public Service

However, as a wide and diverse group of scholars supports, it is necessary to consider that the aforementioned arguments are frequently based on false, biased or non-contextualized assumptions.

As Jakubowicz (1999: 5), Ariño & Ahlert (2004: 404) and Nissen et al. (2006) state, public service broadcasters have been innovators and pioneers over the course of many years, if not always. As they are not constrained by economic (profit) results and/or other market interests, public broadcasters have been 'flagships' of innovation and have contributed to the deployment of new technologies and the creation of new contents and formats (Debrett, 2009: 807).

In addition, though public service operators face structural, dimension, efficiency and performance difficulties, like any other (public) institution in operation for a number of decades, it can be stated that they have been able to progressively adapt to the subsequent transformations experienced by the media system. Consequently, announcing the collapse and vanishing point of public service is far from accurate (Sarikakis, 2004:

106; 2010: 88; Nissen et al, 2006: 5; Iosifidis, 2007; Trappel, 2009: 39). To the contrary, if properly used, their know-how is a valuable asset to manage their adaptation to the new media scenario.

Moreover, public service media are still very influential and socially relevant. Their market share figures confirm that fact. In most European cases, their offers – individually and/or aggregated – still retain strong support from the audience and are even leaders. In addition, public broadcasters keep making considerable efforts to reinforce their social legitimation by applying the latest technology innovations and fostering their universal availability (Steemers, 2003: 125, 129; Lowe, 2009b: 12).

3.3. Adaptation Issues

Following the changes experienced by the media system and due to the discussion resulting from the conflicts regarding their position and their role in the new communication ecosystem, public service operators must face adaptation processes in the fields of their remit, their organization and their performance. In this section, the main issues to be tackled are identified.

Definition of PSB/M

As detailed earlier, defining public service in the field of media implies identifying those values that legitimate it, its attributed objectives and the functions that it is intended to fulfil. Those elements and their relevance vary not only depending on the ideological approach but also when considered from academic, political and market perspectives.

In that context, the concept of 'public value', initially brought into the debate in 2004 in the United Kingdom, has become a key topic when redefining public service in order to adapt it to the new technical/operational scenario and to the new regulatory framework resulting from the conflict previously described. Instead of focusing on the accuracy of the normative definition, the concept of public value emphasizes the assessment of the benefit that a certain content or service will provide the citizenry with.

According to Ofcom (2005: 4), this approach results from the fact that the debate about the normative definition of public service in the field of media has proven sterile due to its ideological bias and because of the abstract concepts and values upon which it is based. In order to illustrate the difficulties that agreeing on a concrete definition implies, the Ofcom refers to the 1999 *'David Report'* by the British Department of Culture, Media & Sport:

"We may not be able to offer a tight new definition of public service broadcasting but we nevertheless each felt we knew it when we saw it"

At the same time, the Ofcom (2005: 10) recognizes that trying to define public service by means of exactly determining the kind of contents, genres or service that it should offer is a very difficult if not impossible task due to the transformation processes currently experienced by the media system. Accordingly, the British independent regulatory authority proposes that those values and objectives within the definition of public service should be as clear and precise as possible. At the same time, they must be flexible so they can be adapted to those changes experienced by the media system as well as by the society that it serves.

As a result of that perspective, the normative definition of public service in the field of media has somehow tended to become a secondary issue. Instead, requiring the justification of how a concrete offer of contents and services satisfies and fulfils the values, objectives and functions included in the public service remit has gained relevance.

This means that, as confirmed later, the accountability of the service becomes, paradoxically, more relevant than its normative definition. In fact, following the British experience, determining how much public value a particular content or service has is becoming a fashionable procedure in order to assess whether it should be included in the PSB's offer. Moreover, the evaluation of concepts like funding proportionality and market impact is also strongly promoted.

As previously mentioned, that approach has been endorsed by the European Commission and has resulted in national processes of redefinition of the public service as well as in the design and implementation of ex-ante evaluation procedures (Donders & Moe, 2011), which are discussed later.

In addition, the need to consider the audience's demands and wishes is emphasized: Despite being a merit good, if public operators do not take into account the satisfaction of their audience, they may face legitimation problems. In that sense, the research carried out by the Ofcom (2005) in order to find out and systematize the audience's attitudes, impressions, satisfaction and expectations with regard to public service is an example of good practice.

Internal Organization

Besides the redefinition of their remit, the configuration of a multiplatform media context, together with the extension of their activities, has forced public operators to adapt their internal structure and operational logics.

With regard to their internal organization, the major challenge is evolving from a vertical and mono-media producing structure towards a task-oriented organization that would deliver contents and services within a diverse range of media and platforms (Alm & Lowe, 2003; Lowe, 2009b: 22). Consequently, scalability and adaptability become crucial issues. Moreover, as detailed below, contents and services must be conceived and produced considering potential cross-media and cross-platform strategies and synergies (EBU 2002, 2006; Leurdijk, 2007: 71).

That evolution requires modifying professional routines as well as adapting production procedures to the new technological context. In this sense, the time and economic resources needed should not be underestimated.

Moreover, management culture also needs to be changed to make the most of these structural changes. First of all, public service managers should be aware and have a proper knowledge of the ongoing transformation processes and their implications. Secondly, a multiplatform and cross-media perspective and an audience-oriented vision become necessary and crucial. Third, issues like the negotiation of rights, interaction with political and market players and implementing new accountability requirements require new efforts and action plans (Nissen et al., 2006; Leurdijk, 2007: 77).

Performance

Market players would like to see public service limited to traditional broadcasting activities. However, by means of regulation and policy documents, supranational and national institutions have recognized that public service operators should be allowed to resort to any available distribution platform in order to ensure their universality, relevance, evolution and the fulfilment of their attributed functions. Among the latter, innovation occupies an outstanding position. Therefore, using new distribution platforms seems to be a natural step for public media (Steemers, 2001; Harrison & Wessels, 2005: 840; Jakubowicz, 2007: 7; Leurdijk, 2007: 73, 79; Moe, 2008c: 262).

This recognition is connected to the fact that society is changing and diversifying its media use patterns. Consequently, if public service does not follow that evolution and adapt itself to the audience's needs and requirements, it will lose its social support and, consequently, its legitimacy (Steemers, 1999: 45; Himmelstein & Aslama, 2003: 265; Thomass, 2003: 35; Nissen et al., 2006: 26; Enli, 2008: 113; Trappel, 2008: 318).

Thus, the current scenario requires public service broadcasting (PSB) to evolve towards the concept of public service media (PSM) (Lowe & Bardoel, 2007). This implies resorting to any distribution platform to make available a combined offer, including portfolio and thematic television as well as radio channels and other new media/communication services. Only by adapting to the evolution of the media scenario and following the audience will public service be able to serve all citizens and maintain its legitimacy. In a multiplatform context, 'serving' no longer means 'always', 'at the same time' or 'in the same way', but using the particularities of each platform to address a certain type of audience and to fulfil specific goals. That would be the most effective strategy to deal with the current fragmentation and segmentation of the public (Blumler & Hoffmann-Riem, 1992: 207; Steemers, 2003: 126; EBU, 2006; Jakubowicz, 2010). In fact, across Europe, many public service operators have developed a wide range of new and innovative services that have become forerunners of the market.

Nevertheless, as has been previously detailed, commercial players consider that the new distribution platforms and contents/services enabled by technology innovation belong exclusively to their own realm. This fact results in a heated confrontation. However, the attempts of the market players to constrain the multiplatform range of public service have mostly failed.

As a result, trying to limit the performance of public media (what, how) has become the counteracting strategy. Market players have lobbied national and supranational regulatory authorities to establish conditions and restrictions that limit the type, extent, amount, length, exclusivity, schedule, etc. of the contents and services provided by public operators. In addition, as detailed below, together with the concept of public value, the assessment of the impact on the market caused by public service activities has been promoted as an accountability tool.

Funding

With regard to the funding of public service, its origin, amount as well as proportionality to the activities carried out are still frequent discussion topics. In addition, the debate is now also focused on how the public service fee should be adapted to the new media context. It is obvious that a fee charged on a receiver ownership basis has become obsolete. Media contents and services are now accessible by means of a wide array of new devices. Furthermore, the need for an independent institution in charge of its collection and allocation is also questioned. In that sense, in some countries, the suitability of a tax-based funding system is being considered.

In any case, and despite the differences among countries, this debate has a major relevance for public media because it determines the amount and the origin of their resources. This issue becomes especially sensitive in the current crisis scenario, as governments tend to cut public budgets and avoid any increase in the public service fee. That fact not only has an obvious impact on the capacity of public operators to adapt to the new context and deliver good services but might also negatively affect their independence and autonomy.

Accountability

As mentioned before, the efforts carried out by commercial media operators to restrict the activities carried out by public service broadcasters and limit their expansion to the new platforms have resulted in a heated political debate. Nevertheless, the intensity of the conflict and its outcomes vary from one country to other. As an example, while in countries like the United Kingdom or Germany public service is strongly regulated and/or monitored, the debate in the Nordic and Mediterranean countries is less hostile or active and is focused on different topics. As a result of the analysis carried out in this project, it can be stated that the level of conflict of each national case depends on the following variables:

- The legal/social status and relevance of public service institutions in general and, in particular, of public media
- The size, weight and relevance of public service media operators and their activities within the national market
- Level of multiplatform expansion of public service operators as compared to commercial players (extension + timing)
- Size and capacity of influence of commercial lobbies
- Conjuncture of the national market
- The legal tradition and the level of detail of media regulation
- The institutionalization and development of media accountability

However, during the last two decades, the constant requirements for more clarity, transparency, proportionality and accountability in the field of public service demanded by the market players together with their multiple complaints filed with the European Commission have effectively transferred the discussion up to the supranational level. In fact, since the probability of success in the field of media policy was quite reduced due to the autonomy granted to the EU Member States by the Treaty of Amsterdam with regard to the definition and articulation of public service media, commercial media operators have worked hard to frame the public service issue within two particular policy areas in which they would have better chances to create a case for their interests: the protection of free competition and the regulation of state aid.

As it is well known, the outcome has been the publication of two communications by the European Commission (EC, 2001, 2009) regarding the application of state aid rules to public broadcasters. Moreover, several investigations and infringement procedures in the field of competition have been carried out against some Member States (Donders and Pauwels, 2008). At the national level, these activities have resulted in regulatory changes affecting the definition and remit of public services as well as the design and implementation of new accountability procedures. The latter have had a relevant impact in the performance and funding of public operators.

Following the guidelines and recommendations drafted by the European Commission in its two communications on the application of state aid rules to public broadcasters (2001, 2009), four criteria are to be considered when assessing public service media activities:

1. A clear definition of public service, including the kind of services that it should provide, becomes compulsory.
2. The role of public service operator should be explicitly attributed to a media institution.
3. Public service funding should be proportional to the activities carried out, which need to be clearly related to the defined remit.
4. Regular and efficient monitoring of public service should be implemented.

With these criteria, the European Commission does not directly interfere with the definition and articulation of public service, but requires better regulation as well as economic and performance accountability procedures.

As a result, following the Public Value Test and the Market Impact Assessment developed in the United Kingdom, other countries like Germany, the Netherlands, Denmark, Sweden, Norway and the Flanders region in Belgium have addressed the ex-ante evaluation of public service activities Donders & Moe, 2011). Despite the British reference, the definition and implementation of these procedures are very diverse, depending on the political culture and the particular conjuncture or each national media market as well as on the conflict cases investigated by the European Commission in each case.

Concerning these evaluation tests, it is relevant and necessary to question several issues:

- First of all, if commercial players and supporters of free market argue that ex-post accountability mechanisms are the most appropriate ones to foster innovation, which is one of the main goals attributed to public service, why should the assessment tests for the latter be ex-ante? Wouldn't that jeopardize the innovation capacity of public operators?
- Secondly, the complexity and cost of these evaluation processes have proven to be very high. In some occasions, the assessment has been more expensive than the cost of providing the service. How can that fact be justified in a context of crisis that results in budget cuts?

- Third, the evaluation is sometimes carried out applying a market approach to a non-market-oriented object. That would be the case of assessing the investment of public service operators by means of applying 'market best practice' criteria (how a commercial player would act in a particular situation). If commercial and public service operators have different objectives, is that a valid methodology?
- Finally, the implementation of these tests re-opens the debate concerning the exhaustive control or freedom of public service and the risk of interference. As Jakubowicz states (2007: 30), if the accountability requirements that they must fulfil are too narrow, public service operators will invest more efforts in satisfying the authorities than the citizens.

Nevertheless, it is worth considering whether these tests could also have a positive impact on the provision of public service. They might become a tool to improve the quality and the adequacy of its contents and services. They could also ensure a more efficient use of the economic resources. Moreover, these tests might force public service operators to better plan their evolution and growth. As Jakubowicz has suggested (2004: 156), it would be reasonable to assume that public service cannot do and probably does not need to do everything that is possible. Therefore, its operators must evaluate which contents and services create a higher value for citizens.

However, following the interviews carried out in this project, it is possible to state that public service managers' opinions about these ex-ante tests are far from concur with the previous arguments. Despite recognizing the need for a better management, most of them do not see the new accountability procedures as the appropriate way to achieve better results. To the contrary, they expect those ex-ante tests to increase not only the internal bureaucratization but also the control of public broadcasters by external agents. These facts may have a negative impact on innovation and autonomy.

3.4. The Impact of the Configuration of a Multiplatform Scenario on Public Service: A Model of Challenges, Opportunities and Risks

After having analysed the discussion about the theoretical conceptualization of public service as well as the ongoing debate about it; and having described the main technological transformation processes currently experienced by the media system, this research aims to make an innovative contribution by analysing their impact on public service and providing a model that identifies and systematizes the current challenges, opportunities and risks that adapting to the digital and multiplatform scenario implies for public operators.

The first step to build this model is to identify those challenges, opportunities and risks for public service broadcasters resulting from each of the technological innovations previously described. Following that, the elements identified are merged in a single table, where other challenges, opportunities and risks derived from the primary ones and their interrelations are also included.

Table 1: Impact of Digitalization and the Extension of the Offer on Public Service

	Challenges	Opportunities	Risks
REMIT	• Justifying the legitimacy of public service when confronted with the commercial players' provision capabilities. • Facing / requiring possible changes in regulation.	• A better fulfilment of the public service remit by means of a more diverse, plural and socially representative offer. • Achieving better / more adequate regulation with regard to technology neutrality, content scope and platform reach.	• Loss of relevance and social support • Loss of political support, resulting in additional regulatory limitations, reduction in budget, privatization, etc. • Legitimacy and accountability issues due to conflicts with commercial players because of the extension of the offer.
ORGANIZATION	• Adaptation: > Professional routines > Production and distribution strategies > Management culture > Internal structure • Technical adaptation of facilities • Funding needs to be ensured / adapted.	• Reducing production, distribution and operational costs. • Operational efficiency • Technical upgrade	• If a proper internal transformation is not completed, efficiency and accountability issues might arise. • Technical obsolescence • Without proper funding, the adaptation cannot be properly carried out and quality cannot be ensured.
PERFORMANCE	• Obtaining licenses. • Producing / acquiring the rights to new content. • Producing / acquiring attractive, useful and efficient interactive applications. • Maintaining quality, relevance and distinctiveness in addition to market weight and visibility. • Programming strategies: Facing audience fragmentation and segmentation. • Branding strategies • Technical issues: standards interoperability, equipments compatibility.	• New channels, offer diversification and interactivity: > Catering better to the needs of a more complex society > Implementation of Information Society. > Better value for money > Improvement of social perception • Maximization of content exploitation • Increase in market weight and visibility	• Failing to extend the offer, including new channels and interactive services, will imply the loss of market visibility, relevance, weight, share and social support. • Increasing the offer without a proper budget will result in the loss of quality and distinctiveness and, consequently, of social support. • As market fragmentation results in revenues and audience fragmentation, a high dependence on advertising and audience share could become problematic.

Table 2: Impact of the Enhancement of Image Technology on Public Service

	Challenges	Opportunities	Risks
REMIT	• Justifying the legitimacy of public service when confronted with the commercial players' provision capabilities. • Facing / requiring possible changes in regulation.	• A better fulfilment of the public service remit by making technology / content innovation available for citizens and democratizing access to it.	• Failing to fulfil innovation and democratization / access obligations or objectives. This would result in a loss of social and political support.
ORGANIZATION	• Professional adaptation: > Professional routines > Production and distribution strategies • Technical adaptation: equipment and facilities. • Funding needs to be ensured / adapted.	• Equipment/facilities upgrade/renewal	• Cost of professional and technical adaptation • Technical obsolescence • Without proper funding, the obtained results / benefits might be marginal.
PERFORMANCE	• Producing HD/3D content / acquiring rights • Programming strategy • Technical issues: standards interoperability, equipment compatibility, spectrum management.	• Providing innovative and high quality services as well as a better viewing experience: > Improvement of social perception > Maintenance / improvement of market visibility / share > Better value for money	• If PSB does not go HD(3D): > Loss of visibility / relevance / share. > Perception of obsolescence and loss of social support • The higher cost of HD/3D content, rights and transmission mayhave a negative impact on SD programming.

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Table 3: Impact of the Evolution of Online Strategies on Public Service

	Challenges	Opportunities	Risks
REMIT	• Justifying the legitimacy of public service when confronted with the commercial players' provision capabilities. • Facing / requiring possible changes in regulation • Establishing new accountability mechanisms	• A better fulfilment of the public service remit by making technology / content innovation available for citizens and democratizing access to it. • Extension of public service remit • Legitimation reinforcement by means of tackling new market failures.	• Legitimacy and market conflicts might lead to operational restrictions. • Failing to fulfil innovation and democratization / access obligations or objectives. This would result in a loss of social and political support.
ORGANIZATION	• Adaptation: > Professional routines > Production and distribution strategies > Management culture > Internal structure • Technical adaptation • Funding needs to be ensured / adapted	• Technical upgrade	• Without proper internal adaptation, the new services might result in a non-affordable working / budget overload. • Budget cuts or limitations can result in a lack of operational capacity and affect the quality of the provided services.
PERFORMANCE	• Producing / acquiring the rights to content and services. • 360º strategies + device connectivity • Understanding new consumption patterns / tendencies: audience fragmentation and segmentation. • Technical issues: standards interoperability, equipment compatibility, bandwidth/data transfer management. • New market operational logics. • Offer branding, coherence and usability.	• Providing new added value: interactivity, participation, personalization, on-demand access, mobility, geolocation, indexation, social-networking, etc. > Better value for money > Intensification of use > Improvement of social perception and support > Maintenance / improvement of market visibility / relevance / share > New relationships with the public	• Assuming that PSB can do everything would result in an oversized offer that could led to budget, quality and accountability issues. • An excess of services does not necessarily result in added value but can create confusion. • Cost of online data transfer • Without online services, PSB will lose value, visibility as well as relevance, and consequently social / political support.

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Table 4: Challenges, Opportunities and Risks for Public Service Operators Resulting from the Configuration of a Digital and Multiplatform Media Scenario

	CHALLENGES	OPPORTUNITIES	RISKS
REMIT	Redefining the public service remit to cope with technology and market transformations. This implies: ➔ Achieving a more clear, concrete and precise definition of public service in order to comply with EU requirements. ➔ Achieving a definition that is flexible enough to face future changes and to avoid constant modifications. ➔ Carrying out complex negotiation processes and modifying the regulatory framework. ➔ Adapting the programme contract. Defining and implementing a new accountability system that increases efficiency but avoids a loss of autonomy. Advocating for the legitimacy and the need for public service in front of the market players' discourse about overcoming 'market failure' situations and their market provision capacity. Engaging in public communication, so citizens would know better what the remit of public service is and what they should expect from it.	Achieving a more comprehensive definition of the service as well as of its remit. This could result in: ➔ Obtaining more autonomy and capacity of action. ➔ Enabling a broader performance that will provide society with a better service, not only generally but also addressing the particular needs of certain groups and minorities. This would reinforce public service legitimacy. ➔ Reinforcing public operators' role as content /technology innovators and universal service/access providers.	If public service operators do not achieve a strong/pro-active position during the renegotiation of their remit, the ongoing reviewing process may result in restrictions. This would affect not only its definition but also its organization and performance. If public service operators do not provide reasons and evidence for their continuity and/or the extension of their remit/activities, they will face the loss of political support as a result of pressure by commercial lobbies. This might lead to legal restrictions hindering their performance. Public service will lose social support if citizens do not have a clear picture of what it stands for and what they can expect from it (independently of viewing shares). This would seriously harm its legitimacy, If the remit is not properly adapted to new technology and/or to the resulting market configuration, legitimacy conflicts will appear. Failing to fulfil innovation and democratization/access obligations may result in legitimacy issues as well as in the loss of social and political support. If the new accountability processes are too narrow and excessively controlled by the political sphere, there is the risk of losing autonomy and that public operators will invest more efforts in satisfying their evaluators than the citizens.

	CHALLENGES	OPPORTUNITIES	RISKS
ORGANIZATION	Adapting to the new technological context and evolving from a media/channel oriented organization towards a multiplatform / cross-media entity by carrying out internal changes: ➔ Organizational structure ➔ Producing and distribution procedures/strategies ➔ Professional routines ➔ Equipment and infrastructures ➔ Management culture Ensuring the necessary funding: ➔ Facing and contributing to the reform of the public service media fee. ➔ Facing a context of economic crisis in which budgets tend to stagnate or are even reduced. Adapting to the new operational logics of the market. Establishing relationships with other market players to deal with technological innovation as well as standardization and interoperability issues.	Creating better operational conditions for the fulfilling of the remit (effectiveness). Optimizing production processes and professional routines (efficiency), resulting in a reduction of operational costs. Making a better use of public resources (budget and infrastructures). Upgrading / renewing equipment and facilities in order to avoid obsolescence.	If a proper internal reorganization is not conducted, PSM have the risk of not being effective / efficient enough. This could result is a non-satisfactory performance, which might imply: ➔ A bad perception by the audience and/or the political establishment → legitimacy issues ➔ Failing to fulfil its remit → accountability issues ➔ An improper use of economic and material resources → accountability issues If not properly planned, and without the necessary budget, adapting to the new context and extending the service might result in a non-affordable working/economic overload leading to a non-satisfactory performance. If public operators are not active in the field of technical standardization and interoperability, they could become dependent on other market players with different interests. This would condition the fulfilment of the remit, increase their operational costs and limit their performance.
PERFORMANCE	Obtaining the necessary licenses / authorizations / must-carry privileges in order to be present in most of the distribution platforms as well as to extend its offer, with the objective of maintaining or improving PSB visibility, relevance, audience share and market weight. Producing (or acquiring the rights to) new and appealing/relevant contents as well as added-value services (with the same objective as above). Establishing a programming strategy according to the diverse ongoing technical and operational developments within the market (receivers / platforms / social adoption). Branding, coherence, interconnection and usability of an abundant and multiplatform/media/device offer.	Better fulfilling the public service remit by using technological developments in order to enhance the offer, so it becomes more complete, varied, diverse, plural, innovative and socially representative. Making the most of technological innovation, especially of online and mobile opportunities, in order to develop and provide added value services. This could result in: ➔ Better personalization and segmentation of services. ➔ Appealing to new groups of the audience and recovering lost viewers, especially young people. ➔ Intensifying the users' experience (time, scope and value).	If public service operators: ➔ do not increase their offer, ➔ are not available at most of the distribution platforms, ➔ do not benefit from technology and content innovation to create an appealing and added-value offer (HD, online, mobile, hybrid), ➔ do not react on time and properly to the ongoing fragmentation and segmentation experienced by the audience, they will lose market visibility, share, weight and relevance as well as social and political support. This might result in legitimacy issues.

	CHALLENGES	OPPORTUNITIES	RISKS
PERFORMANCE	Understanding how citizens access and use the existing platforms and devices: when, how, why, with what objectives, etc. This is crucial in order to develop coherent and effective multiplatform production/distribution strategies and to build cross-platform/media synergies (360º offer). Adapting the offer to deal with the audience's fragmentation and segmentation. Making profit of connectivity between devices. Avoiding cannibalization between own services or losing the users' attention in favour of other providers or secondary screens. Facing increasing competition while maintaining quality, relevance and distinctiveness. As PSM cannot do everything, assessing which services add an extra value and are therefore necessary. Assessing the risks and benefits of being a pioneer with regard to technical and content development innovation. Tackling technical issues: ➔ Particularities, benefits and limitations of each distribution platform (contribution to public service) ➔ Standardization & Interoperability (universal service/access) ➔ Development of the market of receivers (new gatekeepers) ➔ Spectrum / online bandwidth & data transfer management	Implementing social networking tools might bring opportunities for: ➔ Establishing more direct contact / relationship with the audience, discovering its needs and knowing its opinions with the objective of improving the service. ➔ Promoting the creation of communities (connecting the citizens among themselves). ➔ Fostering debate concerning issues of public interest (reinforcing and dynamizing the public sphere). ➔ Stimulating the participation and engagement of the audience (empowering the citizens). Creating a more appealing offer, including added-value services, that would result in a higher appreciation of the service by the audience (value for money). This would positively affect the public image of PSM (social legitimation) and improve their audience/market share (performance effectiveness). Fostering the implementation of the Information Society and contributing to a better social welfare. Making content / technology innovation available to the citizens – democratization of access. Increasing the range of universal service/access. Becoming a truthful partner/prescriber during technology transitions (DTT, HDTV, 3D, Hybridization, transmission standards, etc.). This might have a positive impact on the public image and social support. In addition, it might result in a stronger position within the market when negotiating with other players. Maximization of content exploitation. Extending the range and scope of public service in order to maintain/improve its visibility, relevance and market weight.	If PSB gets involved in too many activities, performance quality and distinctiveness could be compromised. In addition, branding and audience orientation problems might arise. These facts could result in accountability as well as budget issues. If public service operators are too early pioneers and the commercial players do not follow, investments might not pay off. If public operators engage too late with innovation, they might become dependent on other market players. Moreover, their operational capacity or access to relevant content might be limited. In addition, they will be accused of being unable to cope with technology changes. The increase in data transfer due to the success of online services could imply a rise in operational costs. This fact might become a budgetary problem. Playing a leading role during technological transitions could also have a cost for public operators in terms of public image and social trust if projects fail.

4. Adapting Public Service to the Multiplatform Scenario: Lessons and Good Practices

As detailed in section two, where the structure of the project and the methodologies applied are described, this research aimed to carry out an international analysis of the adaptation strategies to the multiplatform scenario implemented by public service broadcasters. Germany, Spain and Poland were the chosen countries according to criteria that included the interest in observing the conjuncture of PSM in different and diverse national media markets, the size of the national market, the existence of a public service offer with multiplatform range and other practical issues that ensured the feasibility of the project. For each country, an individual case report was produced following a common structure of analysis previously designed and resulting from the outcome of the first part of the research. Once completed, the reports were analysed first individually to find out the particularities and the most relevant information of each national case. Next, a comparison was carried out in order to identify similarities and differences and, most important, trends as well as good practices among the adaptation strategies applied by the broadcasters studied.

National Cases Profiling – Content Index

1. **Country Basic Data**
2. **Media System**
   - 2.1. Legal framework
   - 2.2. Public institutions
   - 2.3. Media groups
   - 2.4. Media reception
3. **Public Service**
   - 3.1. Legal framework
   - 3.2. Organization
   - 3.3. Performance
   - 3.4. Accountability
   - 3.5. Adaptation strategies
   - 3.6. Debate topics

The analysis of the national reports was complemented by interviews with high and mid-level managers working at public service broadcasters in Germany (NDR-Norddeutscher Rundfunk & ZDF-Zweites Deutsches Fernsehen), Poland (TVP-Telewizja Polska) and Spain (TVE-Televisión Española & TVC-Televisió de Catalunya). A total of 16 people were interviewed following an in-depth semi-structured questionnaire. According to the agreed terms, anonymity is preserved and quotations are not provided.

Public Service Managers Interviews – Content Index

1. **Public Service Remit**
    1.1. Legal definition
    1.2. Legitimation
    1.3. Accountability
    1.4. Ongoing debate
    1.5. Public communication
    1.6. Explicit risks
2. **Organization**
    2.1. Internal structure
    2.2. Adapting working procedures
    2.3. Technical adaptation / innovation
    2.4. Funding
    2.5. Relationships with other market players
3. **Performance**
    3.1. Programming & distribution strategies
    3.2. Enhancement of image technology
    3.3. Multiplatform extension of the offer
    3.4. Universal service & access
    3.5. Online strategies

As a result of both, the profiling of each national case and the interviews carried out, the public broadcasters' perception of the current transformations experienced by the media system was obtained. Moreover, those issues on which their attention and actions are focused were identified. Although the issues addressed vary depending on the particularities of each national market and each media outlet, common opinions as well as adaptation strategies and trends were recognized.

In addition, the analysis of the national cases, and especially the interviews conducted, provided information enough to find out whether the proposed theoretical model of challenges, opportunities and risks for the remit, organization and performance of public broadcasters was realistic and accurate. Specifically, the knowledge obtained from the primary sources was very useful to value the relevance of the issues included in such a model. On the other hand, the experts interviewed considered that the model was helpful for them to have a broader and overall perspective of the current changing scenario and to establish connections about issues of different nature that have an impact on the definition, organization and performance of public operators.

According to the outcome of the cases analysis and the interviews, the most relevant issues regarding the adaptation of public service and its operators to the digital and multiplatform scenario are:

Table 5: Key Issues regarding the Adaptation of Public Service

Remit	▪ Redefinition ▪ Communicating public service ▪ Accountability
Organization	▪ Internal restructuring ▪ Working procedures and professional routines ▪ Management culture ▪ Technical adaptation ▪ Funding
Performance	▪ Increase in the offer ▪ Implementation of high definition and 3D ▪ Development of online activities

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A common idea shared by all the managers interviewed is that adapting to the new particularities of the multiplatform media ecosystem is not an option but a unavoidable requirement for public service media. First of all, because they need to keep fulfilling their remit, despite the changing conditions of the context. In fact, dealing with change and making the most of it for the citizens is a function explicitly attributed to public operators by law in all the cases analysed. But additionally, public service and its operators need to adapt and extent their activities in order to ensure their visibility and relevance. Otherwise, social as well as political support might be endangered. This could trigger further discussions about the legitimation and limitation of public service that would lead to additional restrictions.

Therefore, the issues and actions described below synthesize the adaptation trends among public service broadcasters in Germany, Poland and Spain.

4.1. Redefinition of Public Service Remit

In all cases, the redefinition of the public service remit, by changing the current laws or any other regulatory process or mechanism, is not a welcome issue. The complexity of a legislative procedure, the need to bargain with many other political and media players and the sensitivity of the public authorities to the demands of commercial outlets in the current context of economic crisis are the most frequently referenced reasons to avoid/reject such a redefinition. In general, it is perceived that the only potential outcome would be further requirements or restrictions that would hinder the necessary evolution and extension of the public service offer.

In the analysed cases, although with evident differences among the legal instruments as well as the degree of detail, public service is already properly defined and framed by law. Moreover, the European legal framework is also considered valid and effective. Consequently, public broadcasters show no interest at all in any further debate about their status, functions and goals.

Nevertheless, in case of a potential redefining process, the most common position is that public service media need to react faster than until now, providing solid and clear arguments and actively seeking political and social support. Otherwise, as the implementation of ex-ante evaluation mechanisms has demonstrated, it would not be improbable that the role of public service and its resources would be jeopardized.

4.2. Communicating Public Service

When asked about how to better communicate the role and remit of their institutions to citizens, the majority of the public service managers interviewed detailed the branding and marketing actions recently carried out by their operators. They are very aware of the need to reinforce the visibility of their brand and to make clear the values attached to it in a more abundant, diverse and fragmented media scenario. Moreover, marketing is mostly perceived as the proper tool to target new groups within the audience or recover lost groups of viewers.

However, no concrete and clear strategies or measures for making the remit of public service broadcasters more understandable for the audience have been identified in any of the cases analysed. Despite the fact that most of the broadcasters had made efforts to specify and write down the values, objectives and functions that they pursue, and online and even printed documents had been made available, the impact on the audience and the effectiveness of those actions has not been properly evaluated.

Independently from viewing figures, which still rank public service as market leader in national cases analysed, the social support is not ensured, especially among young adults and teenagers.

4.3. Accountability

In the case of Germany, the *Drei-Stufen-Test* is not perceived as a useful tool either to improve the fulfilment of the public service remit or to improve its planning and performance efficiency. On the contrary, it is regarded as an extremely complex and expensive bureaucratic mechanism that hinders innovation and autonomy. Moreover, it is frequently stressed that, as it forces public operators to disclose their future strategies, the *Drei-Stufen-Test* reduces their competitiveness. In this national case, a common opinion among the managers interviewed is that public broadcasters already had the suitable internal mechanisms to ensure the fulfilment of their remit and the proper use of their resources. Of course, these accountability tools might need to be improved and adapted to the new media context, but substituting the *Drei-Stufen-Test* for them was not necessary. Moreover, it is also assumed that, since in most cases commercial players are not satisfied with the outcome of the evaluation endorsing the activities carried out by the public operator, new complaints and conflicts will appear. Altogether, more autonomy as well as distance from political and market pressures were pointed out as necessary.

In the cases of Spain and Poland, where no such an accountability procedure has yet been applied, public managers share the opinion that it is not an indispensable tool and that its supposed benefits for the provision of public service are questionable. Generally, as in Germany, the existing internal and external accountability tools are considered good enough. Moreover, there is common agreement about the idea that the new assessment mechanisms only respond to the pressure carried out by commercial broadcasters as well as to the bureaucratic requirements of the European Commission but not to the public interest.

Overall, public managers agree on the need for politicians to end the ongoing debate by openly supporting the legitimacy of public service, as European and national laws clearly state. In that sense, that more actions are required to maintain or recover social and political support is a common perception in all the national cases. Nevertheless, the need for greater transparency of the management and assessment procedures together with better public communication of the planning and the use of the resources was also pointed out as necessary.

4.4. Internal Restructuring and Adaptation of Working Procedures and Professional Routines

When trying to adapt their internal structures to the new technological scenario and the resulting changes in the market logics, simplifying their organization and eliminating redundancies are perceived as first priority issues by all the broadcasters analysed. According to the interviewees, this would result not only in higher efficiency and a subsequent reduction of operational costs, but also in higher effectiveness.

Secondly, the need to become flexible to be able to cope with change faster and better is frequently emphasized. Overall, evolving from a vertical structure linked to a particular medium or distribution platform towards a more horizontal task-segmented organization in which efforts and resources are shared and multiplatform/media distribution becomes a standard practice is considered the main challenge. In that sense, adapting the working procedures and the professional routines and culture was pointed out as the major obstacle by the managers interviewed.

In most of the cases, creating a special unit, task force or working group that would be responsible for designing and implementing an adaptation strategy has been considered the best option to counter act the resistance to change that is common to any organizational transformation. Moreover, achieving an overall and integrating perspective of the ongoing changes, leading the transformation, fostering a collaborative atmosphere, creating certainty by means of a proper internal communication strategy and monitoring the adaptation to correct potential deviations are the main responsibilities attributed to such a special unit.

Additionally, it is also frequent that competition for power and resources among several departments within the broadcaster arises in the current context of change. Consequently, collaboration and synergies need to be not only fostered but in some cases even enforced. Moreover, there is also risk that such an adaptation unit or office becomes or is perceived as a common enemy by the rest of the staff, which might even result in common resistance strategies.

In all the cases, the managers stressed that, despite the relevance of reducing costs and increasing efficiency, these are not the ultimate goals, but the tools to make a better use of the available resources and provide the citizenry with an excellence service. If the final objective is forgotten, then the optimization logics may have a negative impact on the quality of the offer.

4.5 Management Culture

Managers need a broader, deeper and up-to-date knowledge about technical innovation, market trends, content production possibilities and viewing/consumption patterns. Overall, as workflows become more complex, a multimedia and multiplatform vision is required not only to take the right decisions but also to be able to motivate and empower the staff so the goals pursued are achieved.

In some of the cases analysed, mid-level managers and technical staff considered that high-ranking managers are not always perceived as competent individuals with the proper knowledge suited to their responsibilities. Instead, they are seen as too susceptible to political influence or guided by their own personal interests. Additionally, it was often commented that non-realistic approaches to innovation were requested as a result of the influence of the discourse tailored by the marketing department or by what is done by other broadcasters and the ignorance about in-house possibilities.

4.6 Technical Adaptation

Technology is not perceived as a major challenge by public broadcasters, neither from the organizational nor the economic point of view. Technical change is seen as an intrinsic aspect of their activity, so it is faced naturally. Moreover, the necessary economic resources to address technical innovation generally account for only a small percentage of the total budget. Equipment and facilities upgrades are carried out gradually, trying to follow their natural life cycle. From the point of view of those managers in technical positions, real problems appear later, when deciding in what direction and to what extent the technical possibilities should be used to develop content and services.

In all cases, the need to invest in a proper content management system is emphasized and considered the most relevant decision. On the contrary, adapting the content to distribute it using the several platforms available is not perceived as a relevant obstacle or burden.

Nevertheless, the diversity of formats and standards existing in the area of physical supports and electronic equipment results in interoperability and compatibility issues that generate extra costs and additional work load. For that reason, the need to foster the use of open or broadly used standards rather than proprietary solutions is strongly supported. Moreover, there is a general consensus among public operators regarding the growing role of manufacturers as market gate-keepers. The latter's capacity to set trends should not be underestimated. Consequently, although not always officially, negotiations with those players are carried out more often.

4.7 Funding

In the national cases analysed, new formulas for the public service fee (Germany), a substantial reduction in the public budget issued by the government (Spain) and a decline in advertising revenue (Spain/Poland) currently raise the relevance of funding as a problematic issue.

Consequently, in addition to the general goal of ensuring the necessary resources to carry out the indicated adaptation and extension of their activities, the need to improve management practices, to be more efficient and to have a realistic approach to the new possibilities enabled by technology are often emphasized.

In that sense, it is generally perceived that the scope and range of the new services need to be limited according to the existing resources. Otherwise, content and service quality might be compromised. Therefore, it is necessary to assume that public operators may not be able to do everything that is possible. In addition, partnering with other public institutions or private agents should not be disregarded but instead might be a good solution.

Moreover, the managers interviewed generally pointed out the need for public operators to have a stronger protagonism in the definition or modification of its budget.

4.8. Increase in the Offer

The possibility of increasing the number of channels and the subsequent thematization are generally considered to have a positive effect on the fulfilment of the public service remit. Having more channels is identified as an opportunity for better catering to the particular needs of certain social groups.

Nevertheless, it was also generally agreed that production cannot be increased proportionally to the amount of broadcasting time now available. Therefore, new programming and distribution strategies are required to be able to fill in the new channels. In that sense, placing a piece of content on different channels, at different times, and with different purposes has proven to be an effective practice that also maximizes the impact of the produced content.

Moreover, having more channels together with multiplatform/multidevice distribution increases the chances of reaching a broader audience. This is perceived as a crucial matter in the current fragmented media context to ensure the visibility and relevance of public service. In addition, a broader and more available offer is also a good tool to foster social cohesion and stimulate the public sphere. Consequently, managing the transfer of audiences between different screens and avoiding cannibalism among the provided services are seen as main challenges of the multiplatform scenario. Therefore, programming strategies that take into account the new consumption patterns are required. Furthermore, as previously stated above, a multiplatform producing culture needs to be adopted.

In this field, and with regard to the digitalization of the terrestrial network, the role played by governments during the licensing procedure is observed with scepticism, especially in Spain and Poland. In those countries, the broadcasting capacity attributed to public broadcasters and their involvement in the analogue-digital migration has been very much conditioned by the decisions taken by the government. In some occasions the latter hindered the growth, the reach or the visibility of the public offer.

4.9. Implementation of High Definition and 3D TV

Concerning the enhancement of image technology, there is no doubt that high definition will become the *de facto* standard. Nevertheless, public service broadcasters proceed with their internal adaptation as well as the release of HD content with no rush. The reason for that is that, despite its steady growth, social adoption has proven to take more time and is very much linked to the renewal of receivers. Like the case of digital terrestrial television, completing the transition from standard to high definition is expected to require a deadline.

With regard to 3D content, there is no general agreement on its relevance. While in some particular cases it is considered a very interesting possibility that would bring new producing possibilities, most of the broadcasters seem to experience difficulties when determining its contribution to the public service remit. Moreover, since demand for 3D content and its penetration are still low, there is not so much interest in including it within the public offer.

Nevertheless, some of the broadcasters analysed decided to experiment with 3D. In those cases, due to budgetary restrictions or difficulties to justify it as a public service activity, technical and economic partnerships with other players, including commercial operators and manufacturers, have been frequent.

4.10. Development of Online Activities

In the field of online activities, including not only websites but also connected-TV and mobile distribution, all the broadcasters analysed have done a significant effort in the last years in order to upgrade and develop their offer and become a reference for the citizens. In that sense, and due to the good results regarding their online audience, a satisfaction feeling is common among them.

However, attitudes with regard to the potential outcome and effects of online services are cautious. While technological implementation is not seen as an obstacle, exploitation strategies are still a bit uncertain. Moreover, dedicated production is still quite low and adapting the content available in other platforms is the most frequent approach. Nevertheless, in some of the cases, special interdisciplinary working groups have been created in order to design, produce and test new content, including previous, parallel or posterior on-demand content related to linear scheduled programmes as well as exclusive services for each platform.

With regard to the state of the art of online services and their implementation timing, some differences among countries are of course evident. They mainly result from budget differences and the particularities of each national market. However, development tends to follow common paths in all the cases analysed and the adaptation strategies are very similar too.

Among the conclusions obtained from these first initiatives, that mobile secondary screens foster participation and access to complementary content is emphasized. Nevertheless, at the moment, consumption figures show that linear channels are still public broadcasters' main assets. Besides, the quality of the service, which does not directly depend on the broadcaster but instead on the distribution platform operator, is pointed out as an issue to worry about. In the case of content and services distributed online, if broadband capacity is not enough, the resources invested might not pay off and the public perception of the results might be negative. Therefore, planning the release of the new online services also needs to take into account the development of the distribution infrastructures.

In all cases, connected-TV, it is considered the next big challenge and perceived as a very relevant source of added value that will improve the experience of the viewers and enable a better fulfilling of the public service remit. Connected-TV is expected to enrich television content with the features that are characteristics of online distribution [see p. 26].

With regard to mobile distribution, public broadcasters are aware of the relevance and the potential benefits of the new App environment. Consequently, all the operators analysed in this projects have already developed their own apps. However, as in the case of HD or connected-TV, the production of new and/or exclusive content is low and most of the offer is adapted from other platforms.

In both cases, the know-how acquired in the website based environment is perceived as a very relevant asset to deal with their implementation.

Last but not least, at the moment, social networks are seen as an uncertain field by most of the managers interviewed. While they may be quite useful for promoting content and increasing the audience's awareness about the public service offer, as well as trying new communication / collaboration / partnership formulas with the public, the fact that no full control of their operation is possible results in internal reluctance to increase the activities in that field. Moreover, how to process and use the potential feed-back or any other kind of information provided by users on those networks is still unclear and/or requires an additional budget and/or human resources that, in most of the cases, are not yet available. Although the relevance of social networks is expected to increase, major changes will still take a while.

According to the information gathered in this project, and following the arguments supporting the role and mission of public service in the field of media, it can be stated that public operators are clear innovators in the development of a convergent and online media environment. As in many previous occasions, they are pioneers and their services forerunners of the market.

5. Recommendations

As a final contribution resulting from the research carried out in the PSB-Digital project, and taking into account problematic as well as good practices observed in Germany, Poland and Spain, several recommendations are provided below on adapting public service to the multiplatform scenario.

These recommendations are mainly addressed to managers at public service broadcasters involved in the adaptation of their institutions. Nevertheless, due to the very relevant influence that politics and public policy have on public service, there are also several addressed to politicians.

Their aim is listing and emphasizing those basic principles and practices that are crucial to ensure not only a proper adaptation of the remit, structure and performance of public service media, but also that their role and position within the market as well as their social relevance and audience support are not hindered by the discourse and actions of commercial players. Nevertheless, how to apply them in each particular case depends on the particularities of each national media market as well as the articulation of public service.

1. Public service is still used as an instrument serving political interests. Its management and performance are strongly influenced by politics and public policies. Thus, it is urgent that public media improve their autonomy and independence. To do so, the following recommendations should be considered:

   - In the field of regulation, fragmentation, excessive complexity and redundancy or legal overlaps should be avoided / corrected. Not only do they not contribute to making the public remit more clear, feasible and accountable, but they result in bureaucratization, interpretation/competencies conflicts and a lack of autonomy. A complex and inefficient legal framework results in higher political dependence for public media.

   - In the field of politics, governmental control should be reduced in favour of a professional independent authority exclusively integrated by highly qualified professionals.

   - Public service budget definition and control need to be detached from politics to ensure independence and autonomy. Moreover, funding needs to be adequate to enable public operators to provide society with benefits derived from technological innovation and highly professional standards.

2. According to its objectives and social functions, public service should be regarded as a mechanism to invest in the media's technical and professional develop-

ment, and thus as a tool to improve the well-being of our society by providing positive externalities.

3. Politicians need to support public service in a clearer and more explicit way. Reinforcing the role of its operators as public interest enablers would avoid sterile debates about their legitimacy that harm their public image and social support.

4. More direct, explicit and clearer public communication strategies to transmit the concept and the remit of public service to the audience are necessary. Marketing and branding actions cannot replace the effort of providing citizens with specific information about those topics.

   In that sense, a systematic and comprehensive discourse, together with accurate and detailed information, about the concept of public service and its remit, including the values, objectives and social functions to be endorsed, achieved and played respectively by public operators, should be elaborated. Moreover, the social profitability that public service can generate needs to be emphasized. Nevertheless, as this information needs to reach all citizens, special attention needs to be paid to making it understandable. In that sense, a clearer and more evident connection between the remit and the offer of content and services would contribute strongly to making the messages about public service more pedagogic.

   Frequent and systematic public communication actions are necessary to enable citizens to appreciate the quality and value of the public offer. If the citizens do not understand what public service stands for and what they should expect from its operators, they will simply evaluate its offer according to the same criteria that they use to assess commercial media. Moreover, a better informed audience will be more capable of carrying out fair criticism and contributing to building a healthier public service offer.

5. In the current scenario, in which the legitimacy of public service and the extension of its activities are strongly contested, public operators need to be more proactive in advocating their role in society rather than showing defensive attitudes or adopting inactive behaviours. In some cases, strong legal protection or comfortable budgets, not negative per se, can result in attitudes of self-satisfaction and no reaction to the negative discourses or the hostile actions carried out by commercial broadcasters. Such a position does not contribute to promoting a positive image of public service among citizens and jeopardizes social and political support.

   Public operators need to become more active and, besides elaborating a more effective public discourse, it also would be advisable for them to propose solutions to those controversial issues in which they are involved: accountability, funding, political interference, etc.

6. Managerial culture and practices must also evolve, incorporating a more comprehensive perspective of the challenges, opportunities and risks resulting from the configuration of the multiplatform scenario. In addition, political independence and a high level of professionalism will contribute not only to enabling better performance but also to protecting the public image of public service.

7. Public service operators need to deal with the new technology and market logics and carry out a reorganization of their structures and working flows. Nevertheless, though higher efficiency is desirable, the quality and distinctiveness of the offer as well as the working conditions should not be compromised.

8. Public service operators need to rationalize and adapt their producing, distributing and programming strategies in accordance with their technological and budget capacity. In that sense, while maintaining a front-runner position is essential to provide the citizens with value, avoiding rushed and excessively ambitious plans is also essential to maintaining quality and reliability.

9. Information about technological innovation and programming changes should be updated, clear and widely available. This contributes to the success of the new services as well as to reinforcing the audience's trust and participation. Public operators should not miss the opportunity to become a reliable guide / reference for citizens in the new media scenario. That role would enhance their leadership.

10. Public service operators need to implement better internal monitoring mechanisms to evaluate the fulfilment of their remit, especially in the field of online activities, as well as their innovation capacity. This will enable them to improve their strategic planning and performance as well as to build a solid discourse about the benefits they provide society with.

11. Public service operators need to implement better internal communication strategies to promote collaboration rather than competition among departments when tackling the ongoing transformation processes. This also contributes to building a richer company culture, resulting in higher efficiency as well as synergies that have a positive effect on performance.

12. Public service operators need to continue exploring the opportunities that technology offers to enable new ways of connecting with their audiences and promoting their participation. In that sense, it is absolutely necessary to leave behind paternalistic attitudes and make the most of professionalism to serve the citizens and empower them to take part in the media sphere. This is also expected

to increase audience support and engagement. In that sense, connecting with young viewers becomes an urgent task.

13. As the structure and logics of the media system change, public operators need to identify the new bottlenecks and sources of value. This is crucial to detect opportunities and risks and tackle them in a timely manner.

14. In the new media scenario, public operators need to establish alliances with other market players to avoid marginalization and dependences. Special attention should be paid to equipment manufacturers as well as standardization issues.

15. In a multiplatform, fragmented and segmented media scenario, public broadcasters need to capitalize on their long-term know-how to maintain their leadership and improve their visibility and relevance. These are essential assets to ensure and develop social support and avoid legitimacy issues.

16. Given the evolution of the structure and the logics of the communication and media systems, as well as changes in the audience's consumption patterns, it may be more suitable to use the concept of public service information/communication rather than talking about public service broadcasting or even public service media, concepts which are clearly linked to a certain distribution/commercialization platform. This would reinforce the position of public service operators as providers of merit goods that are valuable for the entire society irregardless of the technology used. This could certainly counteract those arguments contesting the legitimacy and role of public service and the extension of its activities in the new communication ecology. Otherwise, it would not be surprising that those free competition oriented and technology deterministic premises supported by neoliberalism would become hegemonic in the near future.

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