

Interactive services in European Television: A dissimilar reality.

Rosa Franquet, Xavier Ribes, Maria Teresa Soto and David Fernández-Quijada

This text reports on the results of an analysis that sought to observe the characteristics of the current offer of interactive services and programs on Digital Terrestrial Television (DTT) in the main European audiovisual markets. The text contains the results of an exploration of the configuration of existing interactive television messages for which we considered the economic, political and technological variables that define each of the countries observed (Germany, Spain, France, Italy and the United Kingdom).

At present, the region is immersed in a process of digitalizing television that is expected to culminate in 2012 with a successful analog switch-off. To do this, the EU has recommended that the technology should gradually be substituted in all of its countries, although this is happening at different rates of expansion. However, the incorporation of interactivity into digital television services seems to be rather haphazard. In fact, at first sight, the level of implantation appears unequal, even though it is one of the most heralded and long-awaited features of DTT. Remember that the EU has expressly made it the mission of Interactive Television (iTV) to drive public access to the information society in order to guarantee that Europe becomes the most competitive knowledge-based zone¹. For these reasons, a diagnosis of the current state of iTV and its characteristics is a valuable exercise, in order for, should it be necessary, media regulators, governors and professionals to promote and ensure its consolidation as part of the digital audiovisual system.

Due to the above, this study first proposed the detection of the interactive services offered by (public and private) statewide broadcasters in the aforementioned countries, and their subsequent analysis. Having observed the program schedules in said markets and verified the scarce or inexistent offer by German and French broadcasters, we made the decision to analyze the offer in the three remaining countries (Spain, Italy and the United Kingdom). To do this, secondly, we collected a sample of the DTT interactive programs in each of those countries over a full week and at three time times of day: morning (10:00), afternoon (14:00)

1 European Commission (2002). eEurope 2005 - An Information Society for all. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. Action plan for presentation at the Seville European Council, June 21-22, 2002. (COM(2002) 263 final). Available at http://www.csi.map.es/csi/pdf/eeurope2005_es.pdf

and night (22:00). After that, thirdly, we applied an observation model containing the following variables: 1.- Technical characteristics of the broadcast (*bandwidth and multiplex*); 2.- Ownership and characteristics of the broadcaster; 3.- Definition and description of the service or application; 4.- Genre; 5.- Availability; 6.- Update mode (timing and rotation); 7.- Return path characteristics, 8.- Associated commercial messages (Advertising) and 9.- Relation of the content with the television flow.

The observation model took as its reference the study made by Prado et al. (2006a)², especially in relation to the definition of the categories of the available services and applications. Said typology categorizes three types of main content services: a) *Autonomous Interactive Services (AIS)* that exist in their own right, and are available whenever the viewer wishes to access them and are authorized either by the broadcaster responsible for the channel or by a supplier of external services. These can be accessed directly from the basic application of the interface, or by being grouped into what are known as walled gardens. These are often only accessible to subscribers and some of the services may also require payment. So, Autonomous Interactive Services involve three states of access: universal, subscriber and paid services. A large number of these require the availability of return paths, although there are also several that do not require them; b) *Program Associated Interactive Services (PAIS)* that have been developed to be synchronized with the programs to which they are associated. Most were designed to enable users to be able to interact with programs that were designed to be viewed linearly, but where there is the additional benefit of complementary services that provide added value. Program Associated Interactive Services are only available to the viewer while the program they are associated to is being broadcast and often only during certain time periods of the same, depending on the degree of synchronization of the service designed. Most of the services in this category do not require a return path, but at the same time there are a wide variety of types of Program Associated Interactive Services that do need one, and c) *Interactive Audiovisual Programs (IAP)*, which are television programs that were conceived, designed and produced for viewer interaction. An essential condition of Interactive Audiovisual Programs is that the actions performed by viewers configure an individual or collective scripting, or put another way, what they do should have an effect on the configuration of the product they are watching.

Results: interactive offer of European DTT

² A summary in English of this study can be found in Prado et al. (2006b).

The first analyses, made using a definitive sample (which was made up of 150 services of different types: electronic program guides, digital teletext and a variety of applications), showed that the total number of interactive applications analysed was offered by 16 broadcasting companies and one independent editor, the British National Health Service (NHS)³. Moreover, they revealed that the availability of interactive services in the three markets studied (Spain, Italy and the United Kingdom) varied depending on three factors: the available bandwidth, the role of the public broadcasting service and the probability of the broadcasting channel managing an exclusive multiplex.

To go into a little more detail, the analysis showed that as the number of multiplexes dedicated to the transmission of DTT increased, so did the number of available applications (even when taking into account the fact that the bandwidth assigned to multiplexes varied between countries). The market in which the highest number of applications was detected was Italy (42), followed by the United Kingdom (38) and Spain (25) (table 1). It was precisely Italy that destined the largest number of multiplexes to the emission of DTT on a state level (8), ahead of the United Kingdom (6), and Spain (5). However, if we examine the number of interactive services in relation to the available multiplexes, the United Kingdom is the most active country in terms of the offer of interactivity (6.33 applications per multiplex), while Italy (5.25) and Spain (5) offer very similar figures. The outstanding operators in terms of the number of applications are the Italian *Mediaset*, which offered 27 different services on its 2 multiplexes and the British *BBC* (16) and *ITV* (13). In Spain, the market leader is *Televisión Española* (TVE) with 8.

Table 1. iTV applications in the main European markets

Italy			UK			Spain		
Broadcasters	N.	%	Broadcasters	N.	%	Broadcasters	N.	%
Mediaset	27	64.29%	BBC	16	42.11%	TVE	8	32%
Telecom Italia Media	9	21.43%	ITV	13	34.21%	Antena 3	5	20%
RAI	4	9.52%	Sky	4	10.53%	Telecinco	5	20%
DFree	2	4.76%	MTV UK	2	5.26%	Sogecable	4	16%
			UKTV	1	2.63%	laSexta	2	8%
			QVC	1	2.63%	Net TV	1	4%
			NHS	1	2.63%			
TOTAL	42	100%	TOTAL	38	100%	TOTAL	25	100%

Source: Authors' own research.

³ There is another independent channel called "Teletext", on the FreeView platform.

Observing the *Ownership* of the broadcasters that scheduled interactive services, two contrasting behaviors were detected among public service broadcasters: those that acted as engines of implantation and those that seemed 'reluctant' to go in for interactivity. To different extents, British and Spanish public television are examples of the former.

On the one hand, in the British case, the *BBC* was the operator with the largest number of available applications. As well as the *BBCi* service, it has a broad offer for children in the form of its *CBBC* and *CBeebies* channels. An addition to those, there is the *NHS Direct* service offered by the National Health Service (a public service that, although available via the *multiplex 2* and managed by the private operator Digital 3&4, is produced by the broadcaster). In total, the public offer of the *BBC's* interactive services represents 44.74% of the applications available in the United Kingdom. The other 55.26% were offered by private operators, who have twice as many multiplexes than the *BBC* (table 3). So, the *BBC* is revealed to be the most committed operator to the development of interactive services in terms of offer, but also of complexity and the resources used. Meanwhile, in the case of Spain, *Televisión Española (TVE)* has the advantage of being the only operator that manages a complete multiplex, which gives it more flexibility than the other broadcasters, who are obliged by law to share it at least until the analog switch-off planned for 2010. With 25% of the multiplex capacity on a state level, *TVE* offered 8 applications, 32% of the total available in Spain. The other operators offered a little less than what was essential to comply with the law. In the Spanish case, moreover, a large part of the role played by public service broadcasters in the introduction of interactive television was reserved for regional broadcasters, who reveal diverse levels of implication in assuming this function, with one outstanding case being *Televisió de Catalunya (TVC)*, which offered 13 different applications in its autonomous community, which fits in with its traditional support for technological innovation (Franquet *et al.*, 2008; Prado and Fernández, 2006).

On the other hand, Italy's *RAI* was qualified as having a 'reluctant attitude to offering interactive services', for it has one quarter of the state level multiplexes but only offered 4 of the 42 services available to the Italian market (less than a tenth). In fact, the operator's *multiplex B* did not offer any interactive applications, and these were only accessible through the general interest channels *RaiUno*, *RaiDue* and *RaiTre*, offered by *multiplex A*. In Italy, the most active operator was *Mediaset*, which with the same number of multiplexes as *RAI* (2) offered almost thirty services. A second private operator, *Telecom Italia Media*, offered a greater number of services (9) on its two multiplexes than *RAI* (9). But despite this recent data, it has to be remembered that, in the Italian case, the public sector has played a relevant role

through the promotion of interactive production in the form of programs financed for such purposes by the *Centro Nazionale per l'Informatica nella Pubblica Amministrazione (CNIPA)* and the *Fondazione Ugo Bordoni*. Many of these applications have been destined to the area of electronic administration and in many cases are available through local operators that did not form part of the present analysis.

Table 2. iTV applications by ownership and multiplex

Markets	Ownership	Multiplex		iTV applications	
		N.	%	N.	%
Italy	Public	2	25%	4	9.52%
	Private	6	75%	38	90.48%
	TOTAL	8	100%	42	100%
UK	Public	2	33.33%	17	44.74%
	Private	4	66.67%	21	55.26%
	TOTAL	6	100%	38	100%
Spain	Public	1.25	25%	8	32%
	Private	3.75	75%	17	68%
	TOTAL	5	100%	25	100%
TOTAL	Public	5.25	27.63%	29	27.62%
	Private	13.75	72.37%	76	72.38%
	TOTAL	19	100%	105	100%

Source: Authors' own research.

With respect to the *Type of services* variable, this study detected that autonomous services clearly dominated the available offer. More than 80% of the applications detected formed part of the *AIS* category, with very few variations between countries (table 3). Next in Italy were *PAIS*, while in the United Kingdom there was a predominance of applications that typically contained the characteristics of both *AIS* and *PAIS*, thus leading to a hybrid or mixed category involving the two types. This hybridization was also observed in Spain, with a similar presence (8%) of *PAIS*. Finally, Italy had the only example of an *IAP*. It was a multicamera application that made it possible to switch cameras in the *Grande fratello (Big Brother)* reality show on the *Mediaset Premium Extra 1* channel.

Table 3. Genres of iTV applications

Markets	AIS		PAIS		Hybrid AIS-PAIS		IAP		Total
	N.	%	N.	%	N.	%	N.	%	
Italy	34	81%	4	9.5%	3	7.1%	1	2.4%	42
UK	33	86.84%	1	2.63%	4	10.53%	0	0%	38
Spain	21	84%	2	8%	2	8%	0	0%	25

TOTAL	88	83.81%	7	6.67%	9	8.57%	1	0.95%	105
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Source: Authors' own research.

In relation to the *Timing* of interactive services, it was observed that this factor was determined by each broadcaster's policies with respect to its interactive strategy. First of all, *Autonomous services* tended to be available permanently, in order for the user to access them recurrently. A classic example of this kind of service is teletext. However, *Interactive services related to the content of certain programs* tended to be made available depending on the content to which they referred. However, there were also autonomous applications such as interactive advertising or services like *Nieve al día* (TVE), which provided information about the skiing conditions only on Fridays and weekends in winter. The quota of such temporary services in relation to the offer in general was variable, from 8% for the case of Spain to 36.84% recorded for the UK (table 4), a market that, like Italy, offered more dynamism and a greater sensation of the renewal of the offer of interactive applications.

Table 4. iTV applications by timing

Markets	Permanent		Temporary	
	N.	%	N.	%
Italy	30	71.43%	12	28.57%
UK	24	63.16%	14	36.84%
Spain	23	92%	2	8%
TOTAL	77	73.33%	28	26.67%

Source: Authors' own research.

Other relevant considerations: factors influencing the implantation of DTT in Europe

This section highlights some variables that affect the implantation of DTT and that help explain the level of development of interactive programming in the system. In fact, although DTT implantation processes in the analysed countries are disparate, and at different stages of development, the existence of common characteristics has been observed that make it hard for this technology to be accepted and, consequently, also the interactive services based on it. The barriers detected for the acceptance of DTT are the scarcity of differentiated audiovisual content, the poor offer of interactive services, the difficulties for acquiring devices equipped

with MHP⁴, and the audience's lack of knowledge or interest in the possible advantages of interactivity.

Table 5. Indicators of the DTT implantation process in the European context

Country	First year of transition	Year of analog switch-off	% population with coverage	% home with DTT	DTT sets (millions)
Germany	2003	2010	86% (Feb 08)	13.2% (Mar 08)	9 (Dec 07)
Spain	2005	2010	89.15% (Jul 08)	37% (May 08)	11.9 (Jul 08)
France	2005	2011	89% (Jan 08)	42% (Aug 08)	17 (Mar 08)
Italy	2004	2012	80% (Dec 05)	25.1% (May 08)	8.6 (May 08)
United Kingdom	1998	2008-2012	73% (Oct 06)	62.9% (Mar 08)	30 (Mar 08)

Source: Authors' own research based on data from the *Observatorio de la DTT* (October 2008).

During the early stages of the introduction of DTT, the offer of differentiated content with respect to analog transmissions was practically inexistent. Therefore, the potential audience did not feel the need to acquire the technological means required to receive it. As the implantation process has advanced in the different countries, rediffusions have become less frequent and it has become more common to find variations in the offer, access to alternative audiovisual products or even a specialized proposal in the form of thematic channels (especially for sports and children's programs). A significant example is that of the United Kingdom: after the failure of the private initiative to market DTT, the *BBC* became the main promoter of that technology and was the main player in the *Freeview* consortium (Starks, 2007). The creation of *Freeview* in 2004 led to attractive program schedules, which stimulated the purchase of digital receivers.

Meanwhile, it should be said that although the development of interactive applications and services is not particularly expensive, without a relative potential audience it is an unprofitable investment. European operators that decide to develop interactive applications mainly do so by cable or satellite, which are more consolidated systems, with a greater number of viewers and better technological capacity for interactivity than what is offered by DTT. In some cases, the public sector has attempted to stimulate the production of this kind of content: Spanish legislation, for example, reserved up to 20% of the capacity of every national

⁴ Devices that enable more interactivity options.

multiple DTT channel for additional services⁵, which included interactive ones. It also established the introduction of interactive applications⁶ as an incentive for the adjudication of additional channels to beneficiary concessionaries of state DTT. In Italy, the law considered the production of interactive services for public use to form part of the general public radio and television service⁷ and the promotion of interactive production was driven by specifically financed programs.

Another of the obstacles for the development of MHP based interactive applications has been the payment of MHP license fees that broadcasters will have to face from early 2009. *Via Licensing*, the standard licensing consortium, announced on June 12, 2008 that it would be releasing the royalties to free TV broadcasters⁸. So, broadcasters that observe a model based on the offer of free content financed by advertising (as in the Spanish and German markets), will not have to pay this fee. However, exemption from this fee does not seem to be a stimulating enough incentive to reactivate the production of interactive DT services.

Another of the major barriers to access to interactive services is the extremely scant offer of MHP decoders on the market and the difficulty for finding them. At the same time, the public's lack of knowledge of the characteristics of interactivity and the services offered, despite some information campaigns carried out by public administrations⁹, has meant that there is lack of interest in acquiring such decoders, which are also considerably more expensive than zappers. To illustrate, it can be said that of the 2,181,000 decoders sold in Spain over the last 12 months, only 0.2% featured MHP¹⁰. On this issue, it should be said that the Italian case is an exception. Thanks to state subsidies, the price difference between zappers and interactive receivers with MHP was reduced, such that the latter have generally managed to penetrate the market, creating a wide range of receivers capable of interacting with the services proposed by broadcasters. Usage is, however, highly variable (DGTV, 2007).

⁵ Fifth additional disposition of the Royal Decree 944/2005, of July 29, which passed the National Technical Plan for digital terrestrial television, *Boletín Oficial del Estado*, nº 181, July 30, 2005.

⁶ Fourth transitory disposition of the Royal Decree 944/2005, of July 29, which passed the National Technical Plan for digital terrestrial television, *Boletín Oficial del Estado*, nº 181, July 30, 2005.

⁷ Article 17 of the *Legge 3 maggio 2004, n. 112, Norme di principio in materia di assetto del sistema radiotelevisivo e della RAI-Radiotelevisione italiana Spa, nonché delega al Governo per l'emanazione del testo unico della radiotelevisione*, *Gazzetta Ufficiale* n. 104 of May 5, 2004 – Ordinary Supplement n. 82 [<http://www.camera.it/parlam/leggi/04112l.htm>].

⁸ http://www.vialicensing.com/licensing/MHP_fees.cfm

⁹ Study titled "Observatorio de la TDT" of July 2008 [<http://www.impulsatdt.es/pdf/CUALITATIVO-PRESENTACION.pdf>] (viewed on September 30, 2008)

¹⁰ Data from September 2007 to August 2008, obtained from the Observatorio TDT.

[<http://www.impulsatdt.es/observatorio/indicadores/indicador.php?id=8>] (viewed on August 28, 2008).

As well as these transnational obstacles, some territories, due to political decisions or cultural reasons, are suffering from severe barriers to entry that are particular to those regions. In the case of Germany, for example, there are other coexistent technological systems for the distribution of a television signal that have longer established traditions, which suppose an additional barrier to the expansion of DTT. Although Germany started the process of transition to DTT in August 2003 and considering that the analog switch-off is scheduled for 2010, its market share is low (13.2%). This has meant that the early impulse in the development of interactive applications has stagnated in recent years (Klimsa and Schneider, 2006).

As for France, although this was one of the countries that initially showed an interest in DTT based interactive applications, but the agents implied were ultimately unable to agree to a standard for the distribution of interactive content for the system¹¹. The *Groupement Télévision numérique pour tous (Groupement TNT)*¹² initiative to promote the development of DTT and its services did not manage to stimulate interactive production. So, despite the experience obtained from the implantation of interactive services on the satellite platform, this experience was not passed onto DTT.¹³ At present, interactivity on this platform has practically been renounced. Therefore, like in other European countries, the offer of interactive services is mainly being developed via satellite, followed by cable and finally IPTV. On the other hand, the United Kingdom and Italy are the leaders in the production of interactive television services in Europe.

Conclusions

The situation of iTV in the observed markets is different both quantitatively and qualitatively. First, we find some countries that have barely developed interactive services. Such is the case with France, which despite having sufficient experience of interactivity on other platforms, such as satellite, has not transferred this knowledge to the agents dealing with DTT (to a certain extent due to the lack of clarity in terms of the technological standard to be used).

¹¹ Despite the CSA's authorization. See http://www.csa.fr/actualite/decisions/decisions_detail.php?id=115454

¹² This association includes public and new broadcasters (AB, Grupe, Bolloré and NRJ32).

¹³ According to AFDESI (*Association for the development of enhanced TV services and interactivity*), France was the first country in the world to offer interactive television (iTV) commercial services via satellite (in 1997).

In Spain, the situation is different, partly because of private broadcasters, through the creation of two new analog channels (*Cuatro* and *La Sexta*), that have concentrated on consolidating their positions with regard to analog broadcasting and left a new offer on digital channels for a later date. This strategy has meant most interactive applications becoming residual. On these new channels we only find a token development of interactivity. As for the public broadcaster, *TVE*, the analysis has found that it is going through a restructuring process (involving early and voluntary retirements of all people aged more than 52 years), which has not produced the ideal situation for major innovative decisions. Therefore, practically all of the identified applications come from external data sources associated to other public services or analog teletext, which is now distributed on DTT. Dedication in human terms to interactive services via the system is almost inexistent (1 person), which illustrates what has just been just said.

In Italy the situation is very different, on the one hand thanks to the aid from the public sector for the purchase of more advanced decoders; on the other, due to the strategy by private broadcasters to seek attractive content like football to implement interactive applications and services. In the Italian case, private broadcasters constitute a large proportion of the engine for the implantation of iTV.

In the United Kingdom, the engine is public initiative. The *BBC* has achieved its leadership in the implantation of DTT by offering new contents and developing interactive services on its new channels. The extensive experience of interactivity in the sector, with the development of standard setting websites and human teams whose job is to devise and produce multiplatform content, has constituted the success of the currently available offer on DTT. In the analysis of this country, this situation of leadership can mainly be seen in quantitative terms, but also in qualitative terms. The United Kingdom is the player with the largest number of applications and also the most profoundly developed ones. In this market, the *BBC* has shared this leadership with satellite operator *Sky* (a major promoter of interactive applications). In Italy, *Mediaset* has shared the protagonism with the public sector and finally, in Spain, practically all of the applications found are at very early stages of development.

In relation to the technological variable, we could say that despite the existence of a standard of European origin in the MHP, it has not been consolidated in the markets, due to the lack of public intervention to guarantee a free market. The acceptance of interactive terminals by the public in the Italian and British markets (with an alternative technology) has

been a determining factor in the growth of the interactive offer. Meanwhile, in Spain there is an incipient offer with scant opportunity for consumption due to the lack of decoders.

Until now, attempts by the European Commission to extend the information society's services through universal networks like DTT have been made pulp due to the decided lack of political impulse beyond the nominal election of a standard (a situation that has not arisen in France, where no agreement has been reached, nor in Great Britain, which has opted for an alternative technology forced by the delay in the launch of MHP). Even so, the British case has enabled the implementation of the most complete services to date with a supposedly inferior technology. Despite regulatory efforts in this context, the market situation that has been detected by our analysis shows that the state of development of interactive services is independent of the technology and seems to depend more on regulations (e.g. available bandwidth) and the implied agents' desire in relation to their role in the market (public services as part of their function, commercial TV in search for returns on investment, etc.). This is shown graphically by observing that the highest level of complexity in terms of applications, such as the use of video, for example, is that observed in the United Kingdom using MHEG-5, a theoretically inferior technology to MHP.

Finally, we have observed major differences in Europe in terms of the expansion of the information society's services through DTT as a universal access network, to the extent that it is impossible to describe a possible 'European model', at least at the early stage that the market is at and despite the European Commission's rhetoric in this respect.

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