

Multiplatform Competition and State Aid in EU Digital TV: A Comparative Assessment

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Abstract

We analyse the recent EU experience in DTV policy-making, focusing on the introduction of the terrestrial platform (DTT) and the digital switch-over. The DTT launch campaign was actively supported by member states, while the EU Institutions have tried to shape the policy mix emphasising points such as market liberalization, facility-based competition, market-oriented and technologically neutral policy-making. The paper reviews the most important UE cases brought in front of the Commission, starting from the German case, which underwent the first negative decision concerning state aid in DTT deployment, since its policy was found violating the neutrality principle. Then, it moves to briefly sketch the France and UK cases, which were instead found compatible with the EU Treaty. Finally, it presents in detail the Italian case, where a peculiar mix of chronic policy mismanagement, institutional conflict and lobbying has significantly hampered new infrastructure roll-out and multiplatform competition. As a result, the country's DTT policy has been substantially challenged by the EU Institutions, both for illegal state aid and infringement to the UE law (especially in the realm of the New Regulatory Framework).

On overall, the paper argues that the implementation of the EU policy mix is dramatically complex, both conceptually and procedurally. Moreover, it requires careful fine tuning, and presents some grey areas of competence intersection, where the national interest still plays a big role. As a result, the new DTV policy framework remains intrinsically prone to member states' particularisms and abuses, especially in the realm of state aid. A few suggestions, aimed at implementing a more rigorous economic approach to state aid control in media markets, are then presented.

Finally, the Italian case stands as particularly multidimensional and complex to tackle, and requires a wider policy debate and treatment at the EU level.

JEL Classification: H71, L41, L51, L82, O38

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1. Introduction

Digital technologies and new communication platforms may promote new entry, raise market competition and, potentially, consumer welfare in converging TLC and media markets. Digital TV in itself implies a quantum leap in terms of market development, better services and new spaces to promote the principles of cultural diversity and social cohesion, underpinning EU cultural and media policy¹. This endeavour applies particularly to the digitalisation of the terrestrial platform (DTT) which, beside improved services (better video and sound quality), dramatically save on spectrum usage, thereby freeing space for new communication services and operators.

The EU Institutions have actively participated in the definition of the policy mix, putting a strong emphasis on the requisites of technological neutrality² and market-oriented policy-making. In fact, according to the EU plans, investment in alternative networks and facility based competition

¹ Since the Maastricht and the Amsterdam Treaties (respectively, 1993 and 1999), EU institutions have been entrusted with the task of policy-making also in the culture and media fields; before, the latter were within the exclusive competence of the member states.

² This policy gathers its guiding principle of technological neutrality from the architecture of the New Regulatory Framework on electronic communications (henceforth, NRF), enacted with the series of Directives of 2002, and currently under revision

remain the best way to ensure a fast and smooth transition to DTV, basing its diffusion on a multiplatform basis. In practice, spontaneous market dynamics and pro-competitive “light” regulation should be combined to guarantee a level playing field, to avoid that selective public support to one platform jeopardises the roll out of other, perhaps more promising, options.

EU member states have been strongly promoting the DTT launch campaign and the switchover transition, with various instruments: additional spectrum slots, compulsory deadlines for the analogue switch-off, simulcast transmission grants, network investment incentives and consumer equipment subsidies.

Most of these measures, however, potentially qualify as state aid. According to the EU law, selective interventions by member states might be justified only if motivated by clear general interests, and must be framed within the exceptions foreseen by the EU Treaty (Artt. 86 and 87): market failures, public service broadcasting (especially FTA), cultural and social goals (such as social inclusion of elderly and disadvantaged social classes), etc; as exceptions, admissible interventions should be strictly interpreted and scrutinised by the Commission.

Among the few exceptions contemplated by EU law, one is particularly important for our topic, that contained in the Art. 87(3)c of the EU Treaty, exempting state aid targeted at pursuing an objective of common interest. According to Art. 87(3)c, state intervention can be legitimate, provided that the aid is demonstrated to be the appropriate instrument to address the common objective, that is limited to the minimum necessary and that its distortions of competition and/or effects on trade are limited. Moreover, since 2005, the new State Aid Action Plan (henceforth, SAAP) has agreed on a refined economic approach to the evaluation of the admissible interventions, aimed at introducing a more encompassing welfare standard³ for the analysis of the engendered distortions of competition.

In practice, this complex law and policy framework requires careful fine tuning, and is intrinsically prone to interpretative ambiguities. Moreover, there is a large scope for member states’ particularisms and abuses: examples are the traditional protection of “national champions”, various purported “national interests”, private groups lobbying, or even political and institutional conflicts. The paper discusses a series of cases where the technological neutrality of the member states’ policy-making and its impact on multiplatform competition were particularly at stake. The main cases discussed⁴ share the common characteristics of concerning – with the exception of Austria - “large” and “old” members of the Union (*id est*, France, Germany, Italy and UK), where the process of harmonization of the internal law and practice should presumably be more advanced than in the more recent ex-accession countries. Moreover, the benchmarking exercise we propose here is meaningful because it refers both to “terrestrial” countries⁵, such as France and Italy, and “non terrestrial” countries, such as Germany and Austria, while the United Kingdom falls somehow in between⁶. Since the policy for the digital switchover refers particularly to the terrestrial platform, where the digital dividend mostly emerges, it is interesting to investigate if the implementation of the EU policy approach results different in different countries; and particularly, if a risk of “capture” of the EU or the national policy-maker is associated to the nature of terrestrial country.

³ As underlined in CRA (2006), past practice in State aid control has mainly interpreted the term “distortion of competition” as “effects that harm rivals”, while future State aid enforcement, following the SAAP, should be based on the concept of “effective competition”, which includes both the effects on the rivals’ profits and on consumers’ surplus.

⁴ A quick reference will be also made to the Austrian case, which was eventually cleared by the Commission. It consists in the setting of a financial fund for supporting different DTV measures; these measures have been subject to an *ex post* specification and quantification, according to stated Guidelines. Consequently, the Austrian case is rather a planning scheme for state aid. Moreover, two Swedish cases are omitted in the present paper.

⁵ We mean: countries whose broadcasting markets are mostly based on the terrestrial platform. In detail, for our purposes, we consider terrestrial countries those where, at the beginning of the Millennium (reference date for the formulation of the DTT national Plans in EU), the terrestrial platform was registering a majority diffusion.

⁶ This happens because the UK is now leading the EU for the digitalization of the terrestrial platform, and stands as a successful model to look at for the digital switchover.

Section 2 highlights the main passages of the recent EU policy documents, before sketching out the basic elements of the switchover experiences of France, United Kingdom and Germany, illustrated through the analysis of the available state aid cases. Section 3 deepens the comparative focus on the two national cases which underwent a negative decision by the Commission: Italy and Germany. Section 4 concludes.

2. DTV policy in the EU

2.1 Policies for DTV and the analogue switch-off

EU broadcasting markets widely differ, both for the multiplatform variety for the end-consumer and the available mix between FTA and pay-TV offers. Generally, terrestrial TV prevails in the EU: still in 2003, 43% of the European households were receiving TV services uniquely by the (analogue) terrestrial platform (henceforth, ATT see table 1)⁷. However, marked differences existed among countries; in Italy ATT was registering the highest rate of diffusion (84,2%) - almost double with respect to the EU average. The situation of France (67,6%) was similar, while Germany and Austria presented the lowest levels of diffusion (4,3% and 9.6%, respectively).

Table 1 – Diffusion of TV platforms in EU households (End-2003, %)

	ATT (a)	DTT (b)	Cable (c)	Satellite (d)
Austria	9.6	0	40.8	49.6
France	67.6	0	11.9	20.5
Germany	4.3	1.1	56.3	38.3
Italy	84.2	0	0.3	15.5
Spain	77,2	1,4	7,1	14,3
United Kingdom	41.6	11.5	15.6	31.3
EU-15 average	43.0	2.5	30.3	24.2

Legend: (a) Households with analogue terrestrial TV (only). (b) Households with digital terrestrial TV. (c) Households with cable TV. (d) Households with satellite TV.

Source: our computations on EC (2003a; tabb.1-2; sect.8)

The current policy focus on terrestrial TV is not justified by a superior technological performance, nor by a brilliant economic profile. In fact, there are reasons to believe that the terrestrial platform presents severe cost and service limitations⁸: we only recall the huge costs of digitalization of the terrestrial network, the heavy burden of its operative costs⁹, its intrinsic national boundaries and the inferior transmission capacity¹⁰. As a counterfactual, we observe that satellite has achieved a good diffusion and was first to complete the digitalization process at the end of the Nineties, without any

⁷ The rate of diffusion of the terrestrial platform is even higher if we consider that a large part of the remaining households, although having a set connected to cable or satellite, uses terrestrial reception for secondary or tertiary sets.

⁸ A similar view emerges from third party EU commissioned studies, which stress the general superiority of satellite: for example, Analysys (2005;chp. 2). A systematic assessment of the techno-economic superiority of satellite with respect to the terrestrial platform is contained in Matteucci (2004a).

⁹ A technical study for the EU Commission points that «[...] for the publishers of subscription-based channels or niche free-to-air channels, the fixed transmission cost of a nation-wide DTT broadcast is much higher than the satellite one. A typical budget for a thematic channel is in the range of 5 to 10 million euros, €20m for the top ones; a year of digital transmission through satellite typically costs 0.5 million euros, whereas the cost with nation-wide DTT transmission is about 5 million euros», see BIPE (2002; p.80).

¹⁰ Concerning capacity, we recall that there is a huge gap between the 40-50 national channels (at standard definition) which can be transmitted on a “representative” terrestrial EU country (such as Italy, UK, France) and the hundreds (more than 1000) which are already broadcasted on the EU-directed satellite transponders. Only on the Eutelsat fleet (the incumbent satellite network operator in Italy), there are currently 415 channels broadcasted in Italian, beside the other hundreds available in other languages.

particular state or supranational support¹¹.

Rather, the main advantage of the terrestrial platform stems from its position of incumbency or, in other words, its “first-mover” advantage, both in the market and in the political arena. Moreover, terrestrial TV is generally associated with universal and FTA TV services, so that non-economic issues (universal public service, cultural pluralism, but also political control of the electorate) – have been underpinning the regulation of this platform. A stricter regulation of terrestrial broadcasting by national policy-making has also been motivated by the nature of the electromagnetic spectrum, which is a rival and scarce resource. As a result, national spectrum policies have profoundly shaped the ATT market structure in the EU, and their discretionality has been challenged only recently, by the NRF¹².

Moreover, since the late Nineties, the future digital dividend associated to the completion of the analogue switch-off has revived the public attention on the terrestrial platform, and the EU Commission has taken a proactive policy to ease and accelerate the transition. In fact, broadcasters and network operators need to invest massively to digitalise the platform, and consumers need to buy decoders or new sets to receive digital services: since FTA broadcasting is a two-sided market (see Rochet and Tirole, 2003), being constituted of the audience and the advertising segments, coordination among operators and that between supply and demand might result difficult. In particular, the coordination difficulties are higher when broadcasters and network operators are vertically separated, so that the entire switch-over process can be delayed¹³. Finally, in order to render useful the digital dividend for new services, a higher degree of spectrum harmonization among countries is required, both to avoid border interferences and allow worldwide standardization of transmission and reception devices; consequently, beside EU, other supranational bodies like ITU lead this coordination process.

The EU support has been clearly spelled out since the “eEurope 2005 Action Plan”, and has been detailed in two Communications on the switchover (see EC 2003b and 2005a). In particular, EC (2003b) sets the general orientation of the switchover policy. Neutrality, its guiding principle, implies that the digital switchover in EU must be a market-led process, so that in the end should prevail the platform that offers the greatest benefit to consumers; however, a few exceptions are admitted, and member states in principle can adopt interventions designed to correct market failures specific to one platform. In EC (2005a), instead, the Commission evaluates the DTT progress and policies in member states, and sets the target date of 2012 for the completion of the analogue switch-off. In fact, a binding and credible switch-off date constitutes in itself an important policy tool, since it eases market coordination¹⁴.

Table 2 presents a preliminary assessment of the status of the transition to DTV, highlighting the progress of DTT; already, at the end of 2005, in a few EU countries – notwithstanding its late start - the terrestrial platform is close to be the most diffused digital platform.

¹¹ Moreover, this performance has been significantly hampered by the unviable business models chosen by most satellite pay-TV operators, which have been battling against each other in ruinous wars for premium rights acquisition and technical incompatibility, thereby lowering the platform diffusion.

¹² In particular, by the Framework and the Access Directives, which now request member states to assign spectrum according to criteria objective, transparent, non discriminatory and proportionate.

¹³ “Chicken-egg” coordination problems in DTV have been studied, with a variety of models, by Adda and Ottaviani (2005) (for UK), Gupta et al. (1999) (for US) and Harison and Matteucci (2008) (for EU).

¹⁴ In the model of Adda and Ottaviani (2005) the policy effectiveness of a firm commitment to a switch-off date (sunset date) is mainly influenced by its credibility, since the ATT universal service remit may engender strategic effects (to delay adoption) in forward-looking TV viewers. Similarly, Maier and Ottaviani (2006) demonstrate that, in a context of conditional sunset dates, expectations management become essential to ensure the switch-off.

Table 2 - DTV diffusion in selected EU countries – 2005 (3Q)

	DTV (total)	DTT	Digital Satellite	Digital cable	IPTV
Austria	9.2	0.0	7.2	2.0	0.0
France	25.5	2.6	16	3.8	3.1
Germany	18.3	6.4	6.3	5.6	0.0
Italy	30.7	14.5	15.1	0.0	1.1
Spain	18.3	0.0	12.8	4.9	0.6
United Kingdom	66.6	23.3	32.4	10.7	0.2
EU-27 average	23.8	6.8	12.2	4.1	0.6

Source: Daxis, Digital Television Data, Report prepared for the EU, 2006

Another element of the EU law and the switchover policy is the promotion of the diffusion of open standards for interactivity. In EC (2004) the Commission recognises the need to ensure the market availability of interactive DTV services, portable on different transmission platforms and reception equipments (so called interoperability). Interactivity and interoperability in DTV, beside being favourable to competition and pluralism, also address the need of enabling all European citizens – even those with low ICT skills, prevented from using computers and Internet – to achieve a certain degree of digital connectivity and social inclusion. In particular, EC (2004) also acknowledges the importance of open standards for API (*Application Program Interface*), which can facilitate interoperability. However, in 2004 the Commission does not consider necessary nor appropriate to mandate any open standard for TV decoders' API¹⁵. Instead, the Commission affirms that a more suitable and effective policy alternative is that of inviting member states to consider the possibility of offering consumer subsidies for “open API” decoders, due to the obstacles and incremental costs involved in the adoption of the “open” ones.

These choices have been reconfirmed in 2006 (see EC, 2006a), when the Commission maintains that voluntary and industry-led standardization initiatives would better serve the goal of promoting an interoperable market of TV interactive services. In fact, while in 2004 the only open and EU-certified API standard was the MHP, rather complex and costly, in 2006 the Commission recognises that other open alternatives have diffused in the meanwhile, the most important being the MHEG-5 in the UK, used by the successful platform Freeview. Beside that, the Commission also recognises that the market of interactive TV services has been developing slowly, and that complementary market conditions and policy measures are needed to reach such a difficult goal.

While this issue would deserve a deeper treatment, here we want to notice that the EU policy for Interactive TV, although genuinely designed to be market-neutral and avoid the past errors of dirigisme¹⁶, has involuntarily endorsed controversial implementations by some member states, *in primis* Italy, where it has *de facto* legitimized an “instrumental” subsidization campaign which was neither market-driven nor oriented at promoting technological progress in DTV¹⁷.

Finally, an important caveat to be stressed is that these EU policy guidelines should be interpreted “*cum grano salis*”, and not uncritically administered as “one fits all” receipt. We believe that, while on one side the respect of the NRF principles should be mandatory – and even more

¹⁵ In fact, the Framework Directive of the NRF (by Art. 18(3)) requires the Commission to examine the effects of Art. 18, concerning interactive television services. If a sufficient degree of interoperability and freedom of choice for users has not been ensured in one or more member states, the Commission may act in order to make certain standards mandatory. At that time the only example of eligible open standard for APIs was the MHP (Multimedia Home Platform) developed by DVB consortium.

¹⁶ The main example being the case of the EU support to the expensive MAC project, the selected standard for analogue High Definition TV, during the Early-Nineties.

¹⁷ More details on the purported interactivity of the Italian subsidized decoders and the failure of the T-government projects can be found in Matteucci (2007). Eventually, the main benefits of Italian choice of the MHP API have accrued to the pay-per-view offer.

severely and timely sanctioned – on the other the actual implementation of the EU policy remains inevitably country-specific, and should focus on a mix of initiatives, specifically tailored to the idiosyncratic drivers of the switchover (technological profiles, institutional setting, multiplatform competition, socio-economic obstacles and inertia) of the concerned EU member. The need for an idiosyncratic policy-mix for EU has been confirmed by recent simulation-based works (see Harison and Matteucci, 2008).

To perform this challenging goal, the EU state aid scrutiny should become more economics-oriented and perhaps more courageous, rather than relying on a (perhaps safer) formalistic legal assessment of the national policy. The state aid control area, following the new refined approach of the State Aid Action Plan of 2005, provides a good case and instrument for this necessity (see Buelens et al. 2007).

The latter point is mainly called for to handle the multiplatform competition issue engendered by the policy for the switchover. Since the public support is intrinsically biased towards the terrestrial platform – at least in its ultimate goal of reaching the analogue terrestrial switch-off – in our view state aid control should be particularly aimed at encouraging (policies aimed at) the endogenous competitive response of the other DTV platforms, to counterbalance this potential bias. In fact, since multiplatform competition is an important driver of the DTV diffusion, national measures promoting multiplatform competition are likely to qualify as a “win-win” strategy, since they would both cater for total welfare (via increased competition) and for an early terrestrial switch-off (via the engendered stimulus coming from the roll-out of alternative platforms). This policy would also be economically efficient, since it exploits the natural techno-economic complementarities existing among platforms: satellite or wireless networks (Wi-Max) are suitable for remote and mountainous areas, cable rings and IPTV networks for urban, terrestrial for flat wide areas of the territory, etc.

As an example, the neutrality principle of the DTV policy could be respected designing “new generation” incentive schemes, such as conditional incentives focused on the roll out of new networks in those areas mostly affected by the digital divide (for example, free network franchises or investment grants conditional on service coverage).

2.2. Selected state aid cases

Several state aid cases have been scrutinised so far by the Commission, following the DTV policy illustrated *supra*.

Austria

Chronologically, the first case to be considered was the Austrian one (see EC, 2005b) which, rather than a single measure, can be more properly defined as a general scheme for state aid in DTV and the switchover, setting up a financial fund and related guidelines to support a series of initiatives, falling into five main areas: grants to fund pilot transmission projects, grants for the development of EPG, interactive services and mobile TV applications, measures co-financing simulcasting incremental costs and decoder subsidies for consumers.

Indeed, the Austrian scheme was cleared only after revision, since the original draft submitted was considered by the Commission as selective and distorting the DTV platform roll-out in favour of terrestrial TV (see EC, 2005b; sect. 11.). Its actual implementation has to be detailed in a yearly report that the Austrian authorities must submit to the Commission, in order to monitor whether the measures actually implemented engender any excessive distortion of competition or trade.

Germany

The first “true” (*id est*, self-contained) state aid case can be considered the German one, relative to the digitalization of DTT in the two Länders of Berlin-Brandenburg (see EC, 2005c). The latter, in fact, was the first area to reach the analogue switch-off already in 2003, following the zonal approach adopted in Germany. The German measure consisted of subsidies (approximately worth 4 million €), awarded by the Berlin-Brandenburg Media Authority (henceforth, Mabb) to private broadcasters, in order to compensate for the switchover costs and make them switch to the new DTT network, owned and operated by T-System - a subsidiary of Deutsche Telekom AG. The transmission subsidies were in fact given to the broadcasters subject to the condition of committing to the use of the new DTT network of T-System.

Among the objections raised by the Commission, there is the fact that the amount of these subsidies was not clearly and transparently determined, and that it could be considered as overcompensating the incremental simulcast costs typical of the switchover phase, since it has been assigned after the analogue switch-off and would last for 5 years onwards. Moreover, the measure could not be even considered as a compensation for ending the analogue licences, since new digital licences were attributed to broadcasters free of charge; these new licences imply greater transmission capacity and lower transmission cost per channel, with respect to the previous. More generally, German cable operators, opposing the measure, were found to be selectively disadvantaged, since the measure, supporting the normal operative cost of digital transmission, was only targeted at the terrestrial platform. In the same decision, the Commission stated a few guiding principles to clarify its policy approach to the DTV and the switchover, stressing the principle of technological neutrality (see EC, 2005c; sect. 129-134).

While we will come back to the Berlin-Brandenburg case discussing the Italian one (see *infra*), we need to clarify that the importance of the first goes beyond the two concerned Länders, since it was a sort of model for Germany: in fact, similar measures were adopted in the Länders of North Rhine-Westphalia and Bavaria (see respectively EC, 2006b and EC, 2006c). In the case of North Rhine-Westphalia, grants (worth 6.8 € over 5 years) were financing commercial broadcasters using the DVB-T platform, conditional of their future permanence on that network. The Commission also in this case highlighted first that the measure – like the Berlin-Brandenburg one - was not justified by the compensation for the incremental switchover costs, nor was aimed at solving the specific problems raised by digitalisation, lacking any “incentive effect” to be exerted on the concerned broadcasters. Moreover, also in this case, the measure only addressed the terrestrial platform, thereby distorting competition against satellite and cable.

Similar were the concerns raised by the Bavaria case (EC 2006c), which however was eventually cleared, since the German authorities agreed to reduce the subsidies under the *de minimis* threshold contemplated for state aid by the recent Commission Regulation n. 1998/2006.

We now go to illustrate three other cases, concerning UK and France, where the Commission’s final decision was positive.

United Kingdom

The first case to be chronologically cleared was that of the UK. Indeed, the British case is dissimilar from those discussed in this section; in fact, in its assessment, the Commission argued that the basic criterion for a measure to qualify as state aid under Art. 87(1) of the EU Treaty is not met, since the UK measure does not confer any economic advantage to the concerned commercial broadcasters, not to the network operator.

The British measure (see EC, 2006d) consists of new financial terms for the holders of Digital Replacement Licences (henceforth, DRL); the latter have been assigned at the end of 2004, after the natural expiration of the previous ones. Basically, these new broadcasting licences¹⁸, to be

¹⁸ The new licences refer both to analogue and digital transmission, and will be valid for 10 years (until 2014).

attributed to the main terrestrial operators, contain several obligations related to the digital switchover and the final analogue switch-off. The UK regulator OFCOM, after having received the explicit licensees' complaints, agreed to set up a revision process which led to the reduction of the annual licence fees for 2005. This revision process was motivated by a variety of reasons: a) to account for the costs involved in the DRL obligations (conversion of analogue transmission plants to ensure increasing DTT territory coverage, zonal switch-offs at predetermined dates), b) to account for the increased spectrum availability gradually released during the switchover in the UK, diminishing the its scarcity and economic value¹⁹, and c) to consider the stronger competition arising from other digital platforms, lowering the overall TV advertising revenues²⁰.

To fully understand the UK model, we need to remind first that currently the NRF (in particular, the Authorization Directive) does not require national countries to assign TV spectrum at effective market prices. This situation is the heritage of the past system of national "command and control" on the TV spectrum, predominant in EU; still today, in various members, the TV spectrum is assigned with non-market tenders (the main example being beauty contexts), and the TV broadcasting licence fees are lower (sometimes much lower, like in Italy) than those paid for TLC spectrum bands (*in primis*, for GSM and UMTS). Following a stronger market orientation in spectrum management²¹, OFCOM has come to set a new refined methodology for calculating the new DRL financial terms - that notified to the Commission - which should ensure a transparent and objective re-determination of their (reduced) market value. According to this methodology, the license fee would extract the entire market value of the DRL, minus a reasonable return to the licensee on its use of capital (see EC, 2006d; sect.22). Consequently, the new DRL fee does not hide a discretionary measure aimed at relieving British licensees of their normal operative costs, which would indirectly configure an economic advantage (and hence a basis for detecting an illegitimate state aid).

The UK has managed to achieve the best EU performance in DTV diffusion and the switchover progress and, as showed in table 3, in 2007 85.1% of the British families are already digital. These results are particularly attributable to the gorgeous performance registered by DTT, which has recently gained momentum: in 2007, DTT stands as the most diffused digital platform in the UK, after having registered in the last three years the highest rates of net additions.

Table 3 – Take-up and net additions on primary TV sets in the UK (%)

	2005 (3Q)	2006 (3Q)	2007 (3Q)
Digital take up			
Digital cable	10.6	11.6	13.4
Digital satellite	32.1	33.9	35.9
DTT	22.6	27.7	36.6
ADSL	0.2	0.2	0.1
Net additions			
Cable	0.0	3.0	6.0
Digital satellite	17.2	17	37.3
DTT	79.7	80	56.7
ADSL	3.1	0.0	0.0

3Q: Third quarter of the year. Source : OFCOM (2007a; p.11).

Among the possible interpretations of the UK performance, we believe that the most convincing one is rooted in the favourable pre-conditions and the articulated mix of policy instruments used by

¹⁹ This condition, which should be the norm, is not met in Italy where, due to the spectrum chaos, simulcasting has aggravated the scarcity of free spectrum.

²⁰ Moreover, under the same rationale, the licensees could later apply for a revision of the annual fees, in line with the market value dynamics of the assigned spectrum

²¹ Also in the past, for analogue licences, a similar system of licence fees oriented to market values was used in the UK.

the UK Government. Concerning the first, the UK was presenting a favourable situation for the DTT roll-out, which can be summarised by the following elements: a mature and developed multiplatform TV market since the analogue era, a strong leadership of the principal public operator (BBC) (which was actively involved in the re-launch of DTT after the initial failure of the ITVDigital pay offer), a tidy and ordered spectrum managed by a unique network operator. Concerning the DTV policy-mix, it has been technologically-neutral and on overall market-oriented; regarding DTT, for example, the new Freeview formula (available since 2002) has correctly emphasised the FTA business model; it has been based on FTA content richness – the highest considering the number of channels²² (see table 4) – and reliable signal transmissions and reception by households.

Table 4 – Launch date and available channels (national) of EU DTT

	DTT launch	FTA	Pay TV
Austria	2006 (Oct.)	n.a.	n.a.
France	2005 (Mar.)	18	11
Germany	2002 (Nov.)	24	0
Italy	2003 (Dec.)	28	11
Spain	2000 (May). Re-launch: 2005 (Nov.)	20	0
United Kingdom	1998 (Nov.) Re-launch: 2002 (Oct.)	34	12
EU-27 average	1998 (Nov.): UK	-	-

Source: our elaborations based on E-media Institute, May 2006

Moreover, the British policy-mix has been focused on both supply and demand side instruments. Concerning the first, long-term careful spectrum planning and management have been fundamental for the smoothness of the ongoing switchover. Concerning the second, for example, on one side public intervention did not focus on mere monetary incentives (such as extensive decoder subsidization, like in Italy), but have included equilibrate information campaigns and public authoritative coordination of the market players (see the “Digital Switchover Programme” and the “Digital Switchover Bill”).

Indeed, the UK constitutes a benchmark model to assess the DTT diffusion, the degree of digital multiplatform competition and the legitimacy of state aid measures.

France

France, which is a terrestrial country, launched the DTT in March 2005, with a certain delay with respect to comparable EU members (basically, UK, Germany and Italy). In fact, preparations started almost 10 years before the launch, and have undergone a long series of revisions in order to solve the diffuse interference problems affecting ATT - mostly at the national borders with neighbouring countries (see Rapone and Raude, 2005). In the light of these problems, the national DTT launch policy was based on two fundament constraints: 1) in selected border areas, interference-free spectrum shortages would not have allowed the simulcasting phase (switchover), so that a direct transition (switch-off) from ATT to DTT would have been requested, and 2) for the whole country, a target of 80-85% of population coverage by DTT would have been the maximum feasible, so to request a multiplatform approach to manage the analogue switch-off and to serve the remaining portion of population excluded by terrestrial services.

Given these constraints, before launching the DTT, the French Government carried out an intensive and centralised spectrum planning and management, which has proved very effective for the solution of the many problems posed by terrestrial transmission in France: in fact, despite the

²² In table 4 Italy apparently comes second for channels variety in DTT. As investigated by Matteucci (2005) and recognised by DGTVi (2006), Italian DTT channels have been primarily simulcast of channels available elsewhere (both in ATT or FTA satellite). Moreover, most of them are niche channels (such as music or video-clip), unable to attract wide audiences. Primarily, in Italy pay-TV channels have driven the platform diffusion (see Matteucci, 2008).

initial launch delay, the following achievements in terms of both network coverage and incremental channels have been outstanding. Concerning potential coverage, in Autumn 2007 almost 85% of the population was served by DTT, and thanks to the satellite simulcasting, 100% of the population was potentially covered by the complete FTA DTT offer. Concerning channels variety, while French ATT is only broadcasting 6 FTA channels, DTT offers 18 FTA channels – mostly new, beside additional 11 pay channels. Consequently, thanks to the substantially improved offer, the French switchover plans are progressing smoothly and fast, and its centralised model can be considered effective; nowadays French DTT is a pluralistic platform, and it stands as a credible competitor to the other digital TV alternatives (see also OFCOM, 2007b).

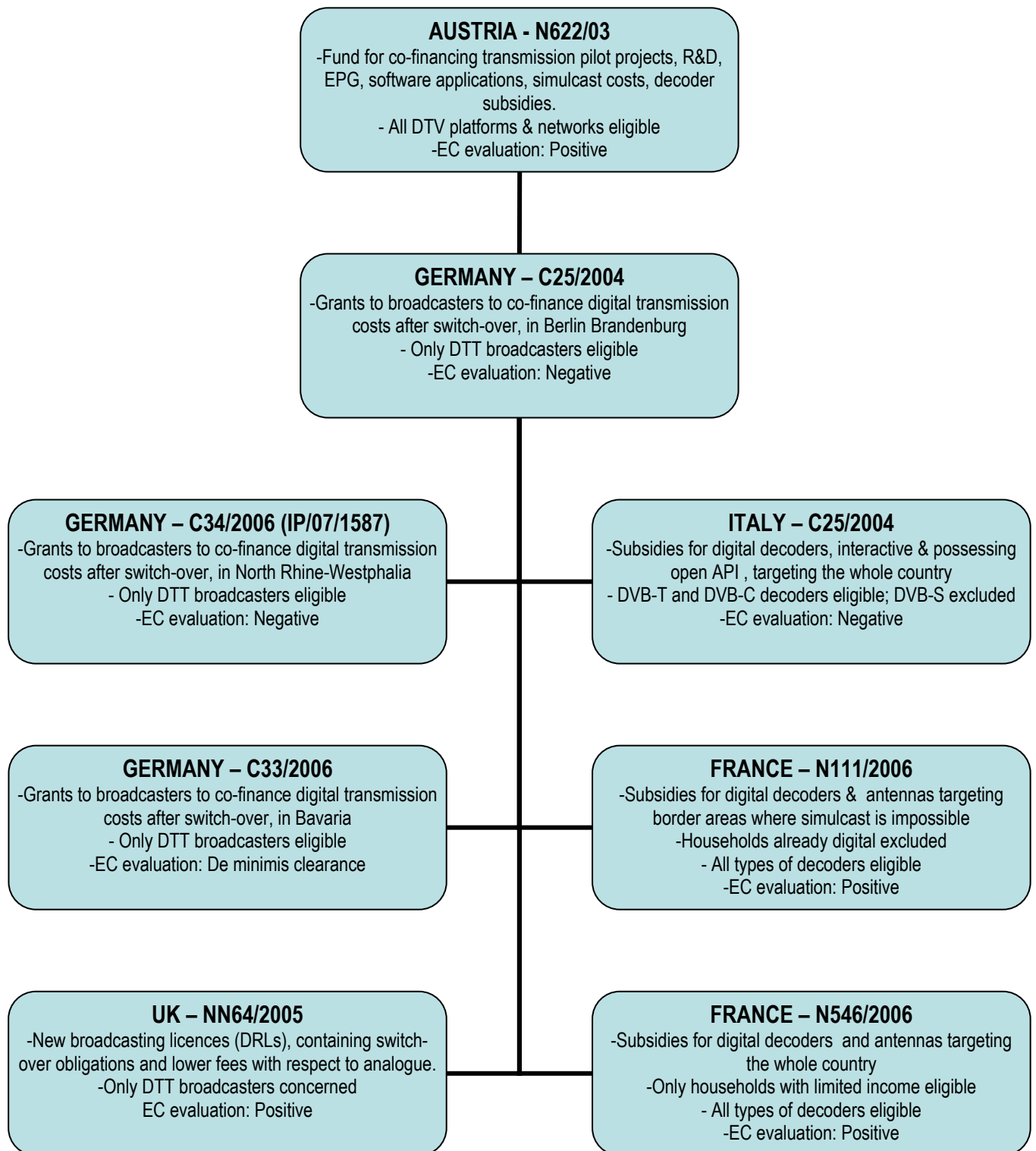
In this framework, the French government has also foreseen specific measures to ease the transition to DTT. In particular, two measures have been notified to the EU Commission; both have been cleared. Chronologically, the first measure (see EC, 2006e) assumes a “residual” character, both for its limited geographical coverage and financial amount (having a maximum budget of 30 millions €): in fact, it was mainly targeted at border areas (on the North and East of France), where spectrum interferences would not have allowed the simulcasting phase. Due to the technical necessity of switching directly from analogue to digital transmission, and to the resulting immediate deprivation of analogue terrestrial services for households located in those areas, the French Government decided to grant them a subsidy for the passage to another reception technology, letting them to choose which one. In fact, subsidies for the purchase of digital decoders and related complementary equipment and services (antennas, installation service or even subscription fees) were available for all the available platforms, thereby qualifying the French measure as technologically neutral.

Conveniently, although the measure did not possess an explicit social character, lacking any income requisite, the Government excluded from the measures those households located in the concerned regions having already subscribed to a digital platform; this implies that the rationale of the measure was to address only those households really deprived by the lack of the simulcasting phase, so to avoid subsidization of wealthier households.

A few months later, the French Government broadened the original support to DTT, introducing a new measure (see EC 2006f) with an explicit and enlarged social character, targeting any French household of the national territory, qualifying for “low income” conditions. Obviously this new measure was endowed with a much larger budget (140 million €, to be spent until 2011), and was framed in a way to assign a personalised subsidy, proportional to the actual income of the concerned household. Moreover, the proportionality of the subsidy was designed in accordance to the cost of the chosen technical platform, whose availability varies according to the concerned area. In practice, this new French measure contains an interesting incentive mechanism, since it determines the amount subsidized on the basis of the cheapest solution available in the selected area (see *ibidem*, sect.13); consequently, the measure stimulates multiplatform competition for the cheapest package offer (in fact, also subscription fees can be subsidized). The Commission recognises first that the measure qualifies as state aid, conferring an advantage to the network operator and the broadcasters, but in a technologically uniform way. Moreover, its social character is clear, so that it qualifies for the exceptions foreseen by Art. 87(2) of the EU Treaty.

Finally, it could also be argued that these French measures formally qualify also for the exceptions of Art. 87(3)c, concerning an objective of common interest, such as the switch-over. However, what is more dubious here is if the decoder subsidization for the poorest, beside having a important social function (that of democratic inclusion), can also act as a major diffusion driver. This role, for example, is questioned in the simulation exercise of Adda and Ottaviani (2005); this point will be further illustrated *infra*, while discussing the Italian case.

Figure 1. Synopsis of selected state aid cases in EU Digital TV



3. The Italian DTV policy (2001-2006)

3.1 A troublesome terrestrial model

Italy, the “most terrestrial” country in EU (see again table 1), is experiencing severe difficulties in managing the switchover phase. The national switch-off date, initially set for 2006, has been first deferred to 2008 (at the end of 2005), while, in 2006, the newly appointed Government has deferred it to 2012, in line with the ultimate deadline set by EC (2005a). Then, a new zonal approach has been introduced, aimed at switching off the analogue signal gradually, like in the German case; the basic idea was to start with the less troublesome regions of the country. Nevertheless, the first regional switch-off date, programmed for Sardinia (an isolated distant island) by the 1st of March 2008, has been already missed and newly deferred, face to the conflicts arisen among broadcasters, the local and the national Government on how to solve the intricate spectrum situation.

Currently, the DTT coverage of the country is highly uneven and national multiplexes widely differ for degrees of completeness²³. Consequently, various statistics (see *infra*) have uncovered that an important share of the installed decoder base has lain unused or technically troublesome; this, coupled with the poor FTA offer, has seriously weakened the initial social favour toward the new technology, mainly driven by the pay-per-view offer (see Matteucci, 2008).

However, these difficulties were largely expectable, due to the irrational and ineffective policy which preceded and accompanied the DTT launch at the end of 2003.

Spectrum policy comes first: basically, in the DTT launch, centralised spectrum plans did not play any role, although officially approved²⁴. Moreover, since the analogue era and the birth of the commercial TV (mid-Seventies), the country has been characterised by a *de facto* private occupation of the spectrum. This story is a rather peculiar case of chaotic and unregulated evolution of the sector, rooted in strong political lobbying by broadcasters²⁵, tacit compliance of political parties, permissive normative framework and lack of enforcement of the few (insufficient) antitrust provisions in place²⁶.

The chaotic situation of the TV spectrum has been coupled with an high degree of vertical integration of the TV value chain, which features hundreds of integrated network operators-broadcasters, mostly marginal. In reality, the integration choice was implicit in the way Italian broadcasters built their transmission networks: by frequency occupation, in an unregulated process also described as the “Far-West of the spectrum”.

This critical situation has never been tackled by the national policy-maker; a long series of Laws and Ministerial Decrees simply extended or even legitimised – as recently done by the Law n. 112/2004 (so called Gasparri Law) - the “*status quo*”. The TV duopoly between RAI (public operator) and Fininvest (private group, now financial holding of the Mediaset group) was basically set on these premises; further, it has been virtually unrestrained, since both operators maintained the privilege of broadcasting three channels each, and Mediaset that of facing an ineffective antitrust threshold in the TV advertising market.

The market concentration was later aggravated by the laws preparing the DTT launch. Both Law n. 66/01 (provisionally) and Law n.112/2004 (definitively) opted for the legitimization of the

²³ As a matter of facts, no official data have been published on the geographical coverage of each multiplex. The Italian Law itself has legitimised this situation: in fact, the controversial Law n.112/2004, regulating the introduction of DTT, has defined a national channel as that reaching at least 50% of the population.

²⁴ Moreover, the Digital Plan of 2003 featured a rather minimalist programme of spectrum management, so that it did not foresee any relevant digital dividend.

²⁵ An interesting anecdote is that in the Italian edition of Luis Cabral’ industrial organization textbook, the past relationship between the biggest broadcaster - Mediaset - and some Italian politicians is given as a main example of rent seeking behaviour and institutionally reinforced market power.

²⁶ A long run economic analysis of the sector is provided by Gambaro and Silva (1992), while the most recent period and the DTT transition is studied by Matteucci (2005) and (2007). The latter contains a longer analysis of the recent spectrum policy.

spectrum *status quo*, since they authorised incumbent analogue broadcasters to maintain their frequencies and even to trade them (so called private trading), in order to acquire the spectrum needed for experimenting and launching in *simulcasting* their DTT offer. As expectable, these Laws have ignited a speculative trend in spectrum prices, and *de facto* reserved frequency trading for the two major analogue operators: at the end of 2005, RAI and Mediaset do continue to possess a disproportionate share of the TV national spectrum (including analogue and digital): respectively 43% for RAI and 40% for Mediaset (see AGCM, 2006a; table 1). Moreover, no explicit regulation was given by law for the introduction of mobile (DVB-H) and the high definition TV (HDTV), so that major incumbent broadcasters simply feel free to use their spectrum – including that vacated by the on-going switchover - for entering these new markets.

Consequently, significant differences persist between the coverage of the networks of the duopolists and that of the other national broadcasters. And the high concentration of the spectrum, in turn, mostly explains the duopolistic distribution of the audience shares and advertising revenues²⁷. In fact, the higher the coverage of the network, the stronger is the competitive capacity of the carried channels.

The dynamics underlying this phenomenon are rather complex, but can synthetically ascribed to the joint working of network externalities²⁸ and increasing returns enjoyed by two-sided markets. In these markets, competition is subject to positive feedbacks (see Arthur, 1988), so that a “first mover” advantage acquired in a market side is likely to transfer to the other, and become irreversible. As an example, in FTA TV a larger audience enables an higher flow of advertising revenues; this flow can finance a richer and more attractive programming schedule, which in turn feeds back into a larger audience²⁹. Similarly, in pay-TV an early advantage in the platform diffusion enables a more aggressive premium content acquisition campaign, which in turn reinforces the initial platform advantage³⁰.

Finally, the most paradoxical aspect of the Italian chaos is that a significant share of the frequencies used by the biggest operators is redundant, while their centralised coordination would eliminate most of the reciprocal interference problems and sensibly increase the coverage of the neighbouring networks without compromising its own (see ACGM 2004; tab. 3.9) – definitely, a rather unique case of Pareto-optimality!

To summarise, the entire story reveals the Italian politics’ inability to solve the illegal concentration of the TV market and the lack of competition and pluralism, repeatedly sanctioned by the Italian Supreme Court (see its verdicts n. 420/1994 and 466/2002).

As in other cases, EU institutions have eventually tackled the Italian impasse, and initiated an infraction procedure against Italy under Art. 226 of the EU Treaty (see EC, 2006g). In the opening decision, the Commission censures the asymmetric treatment in favour of incumbent analogue operators contained in the Italian DTT norms, and warns the country about the resulting possibility that the digital dividend for new entrants and services is nullified.

A related recent ruling of the European Court of Justice (2008) on the Europa 7 case³¹ has

²⁷ While the dichotomous distribution of the audience mirrors that of the spectrum, the distribution of the advertising revenues is more asymmetrical, due to the binding ceilings (set by law) limiting the RAI’s collection.

²⁸ Network externalities materialize from the fact that the benefit from the marginal viewer joining the network exceeds its individual utility, raising the value of the whole network. This externality works differently, according to its direct or indirect nature. For the latter, see Katz and Shapiro (1994) and Gandal (2002). In TV, they mostly work connecting the content and transmission segments of the value chain.

²⁹ An application of the two-sided market modelling approach is provided by Gabszewicz et al. (2004).

³⁰ Strategic accumulation of premium content may also serve as an exclusionary strategy both for FTA and pay-TV, especially when content is acquired under exclusivity clauses. For a model addressing exclusionary content acquisition in pay-TV, see Matteucci (2004b).

³¹ This analogue terrestrial operator came out the winner of the analogue spectrum beauty contest of 1999 and got two national broadcasting licences. However, on the basis of their interpretation of Italian rules, the Communication Ministry and the national Authority did not assign the spectrum, occupied by incumbents. As a result, Europa 7 has been *de facto* excluded from broadcasting on a national basis by. Now, after nine years, its rights have been recognised by the European Court of Justice.

stated that in TV broadcasting national Authorities must grant not only broadcasting authorizations, but also the accompanying spectrum frequencies (and their actual availability). Any switchover regime (as, in particular, that set with Law n. 112/2004) which favours incumbent operators by granting them a privileged status, assigning spectrum on an exclusive basis without any time limit or usage restraint, must be considered illegitimate.

3.2. The Italian DTT subsidy campaign

The measure

Italy, during the Berlusconi Government (the second, spanning 2001-2006), as part of the DTT planning and launch campaign, decided to subsidize decoders for DTV. The subsidization campaign was successful, financing roughly two millions decoders; the amount of the unit subsidy was relevant, covering roughly half of the average market price of the representative decoder in each of the two phases of the “first” campaign (respectively, February-October 2004 and December 2004-November 2005)³². Thanks to the subsidy and the resulting economies of scale, the average price of an eligible interactive decoder (MHP type, *Multimedia Home Platform*) in Italy fell from 350€ to 150€ - a price similar to that of *zappers* (simpler models without CAS e API modules, unsuitable for pay-per-view services). The public subsidies of the first campaign were reserved to decoders able to receive terrestrial and cable digital services, and possessing certain technical requisites of interactivity and interoperability which were later interpreted as meaning the inclusion of the (EU open standard) MHP as API³³.

The Italian laws (2004 and 2005 Finance Acts) and implementing decrees containing the decoder subsidization campaign were immediately opposed by a small FTA terrestrial broadcaster (Europa 7) and later by the satellite pay-TV operator (Sky Italia), claiming that they were illegal state aid. After a long investigation, the EU Commission (see EC, 2007a) declares that these subsidies did constitute a state aid incompatible with the common market, and must be recovered from the indirect beneficiaries: in theory, the two terrestrial private operators offering pay-TV services and the IPTV operator. In a following decision, the EU Commission (see EC, 2007b) rules that the decoder subsidies granted with the 2006 Finance Act and reserved for subscribers located in the two “early switch-off” regions of Sardinia and Aosta Valley - henceforth “second campaign”, not analysed here - were legitimate, given that the eligibility criteria in the meanwhile had been changed and satellite decoders were no more excluded.

Further, the sanctioned subsidy campaign had a meaningful antecedent: in fact, in 2003 the Italian Government had framed a similar measure, but it was too early, since DTT services did not exist at that time³⁴: moreover, this measure was far more selective than the sanctioned one, since it was only targeted at decoders for DTT (DVB-T).

Beneficiaries and advantages

According to the comments submitted by Italy and those broadcasters involved in the decision (see EC, 2007a), the subsidy was legitimate and justified, mostly because (see *ibidem* sect.

³²More details on the subsidization campaign can be found in Matteucci (2005).

³³ In fact, the texts of the Finance Acts (and accompanying Decrees) were rather synthetic and cryptic. They were clearly requiring, as a condition to obtain the subsidy: 1) the regular payment of the annual TV licence fee, 2) the purchase or rental of a DVB-T decoder, or a DVB-C one retransmitting terrestrial services at no further costs for both viewers and content providers, 3) the presence of interactivity, without any further distinction between local or remote. See EC (2007a; sect.7).

³⁴ The measure was contained into 2003 Finance ACT, approved at end-2002. However, none profited from these subsidies, since DTT transmissions were still experimental and the first models of DTT decoders appeared on the shelves only in December 2003, date of the commercial launch of DTT in Italy.

38-61): a) the beneficiaries (network operators and broadcasters) did not receive any advantage and b) there was no distortion of competition. Also, these subjects argue that, even if the subsidy were an aid, the 2004-05 campaign would have been compatible under the exceptions of Articles n. 87(2)(a), 87(3)(b), (c) and (d) of the EC Treaty; in fact – they continue - the eligible decoders were required to respond to strict criteria – being interactive and interoperable, and possessing an open API³⁵. Mediaset also adds that the selectivity bias of the measure arose from Sky’s choice to use a proprietary technology (the NDS one).

The Commission, instead, rules that the Italian measure could not qualify for any of the exceptions to the state aid provisions contained in the EC Treaty.

The Commission’s analysis first points out that, although the direct beneficiaries were TV viewers, there also existed indirect advantages for broadcasters, network operators and decoder producers, which fall within Article 87(1) EC Treaty according to established case-law. The first main advantage given to broadcasters (see *ibidem*, sect. 84) consisted in the possibility to develop an audience in a new market (pay-per-view) through public funds. In fact, decoder subsidization is a widespread business practice in pay-TV, and the public subsidy had benefited some operators replacing its private cost. This monetary advantage is specifically related to two terrestrial broadcasters offering pay-per-view (Mediaset and La 7) and one IPTV operator offering triple play services (Fastweb). The underlying rationale is that pay-per-view is a distinct market from FTA, and the type of decoders eligible was specifically conceived to offer a wide range of services, including pay-per-view and interactive ones. Contrary, if the subsidized decoders were consisting of simple zappers, the advantage would not have materialised in this form³⁶, since this case involves only an intra-market audience replacement³⁷.

Secondly, the Commission detects a “temporal advantage” given by the measure to incumbent terrestrial operators, in terms of image branding and customer retention (see *ibidem*, sect. 88); again, this mainly applies to pay-per-view, the only service new to the market.

Moreover, the Commission points out that these two subsidy-led advantages (public financing of audience creation and “first move” commercial advantage) added to and amplified the strong discriminatory and exclusionary effects of the current Italian spectrum allocation discipline, as set by Law n. 112/2004. This discipline, as examined in section 3.1, blocks entry into digital transmission for new comers, and translate into DTT the concentrated and inefficient spectrum allocation of ATT, which in Italy has been chronically characterised by a “blockaded duopoly” between RAI and Mediaset.

In other words, the Commission’s opinion that incumbent terrestrial operators offering pay-per-view would cumulate two mutually reinforcing temporal advantages - one arising from the transmission market and the other from the emerging pay-per-view broadcasting, can be interpreted according to the categories of positive feedbacks and indirect network externalities among contiguous and two-sided markets (cf. again *supra*).

However, despite their implicit theoretical acceptance, the exclusionary consequences of these dynamic advantages appear to be practically understated, since the Commission forgets to consider that the public financing of the digital audience affects not only the profitability of pay-per-view³⁸, but also stimulates the take-off of advertising revenues from digital programming, be it

³⁵ However, its phrasing was rather synthetic and ambiguous, since it explicitly mentioned the sole criterion of interactivity: “for 2004, each user of the broadcasting service who has fulfilled his obligations regarding payment of the relevant subscription fee for the year in progress and who purchases or rents a device allowing the reception, free-to-air and at no cost to the user or to the content provider, of television signals transmitted using digital terrestrial technology (T-DVB/C-DVB) and the resulting interactivity shall be entitled to a public grant of €150” see EC (2007a; sect.7). Only the formulation of the second campaign (that cleared) explicitly mentioned the interoperability requisite (see EC, 2007b, sect.5), to be reached via the inclusion of open APIs, among those officially recognised by EU.

³⁶ In this case, the directly discriminated operators would have been only those terrestrial operators unable to transmit in digital.

³⁷ In fact, DTT FTA services in Italy are substantially similar to those of the analogue offer.

³⁸ Its early financial break-even, at least for Mediaset, is discussed in Matteucci (2008).

pay or free: in fact, since broadcasting is a two-sided market, any advantage acquired on the audience side is easily transferred into the advertising one. In this respect, Mediaset appears to have already achieved a leading position, being marketing new forms of digital interactive advertising, for which it was the first operator to acquire the relevant content rights (for example in football matches, see AGCM, 2006b).

Finally, a potential advantage is also detected for terrestrial network operators: in fact, the broadcaster's willingness to pay for the transmission service depends also on the profitability of its presence on the concerned platform, which is in turn affected by the potential audience. Now, the subsidy stimulates DTT audience, which indirectly might increase the bargaining power of terrestrial network operators.

However, several considerations lead the Commission to take a more cautious approach on this point (see EC, 2007a, sect. 96-98). First, it considers difficult to ascertain whether the potential indirect advantage for network operators has yet materialised; and even if this was the case, it would be difficult to quantify the differential willingness to pay of broadcasters for terrestrial transmission services, as caused by the measure. Moreover, the Commission recognises that in Italy the ownership links between the two subjects involved – in fact broadcasters and terrestrial network operators are vertically integrated – render the distinction between the two types of advantages less meaningful. The Commission therefore concludes that only if the selective measure would be repeated, a systematic distortion of the relative prices of the different transmission services would arise; and this occurrence should have been ruled out, because the Italian Government agreed to change the measure, including satellite decoders in the new campaign (since 2006).

The analysis of the point in EC (2007a) is partly convincing, and can be challenged on different grounds. Here we explore fully the theoretical argument, even though we eventually reach the same practical conclusion of the Commission: the main advantage is to be found on broadcasters, rather than network operators³⁹.

On one side, among the hundreds of Italian broadcasters (including local and regional ones, vertically integrated in terrestrial transmission services), only two are possessing significant market power and are able to charge monopolistic tariffs for their transmission services: RAI-Way (RAI-controlled) and Elettronica Industriale (Mediaset group). This dominance position was certified for analogue transmissions by AGCM (2004), and has later strengthened, thanks to the acquisitions of new frequencies for DTT authorised by laws n. 66/2001 and 112/2004. In 2006, after several waves of frequency trading dominated by the duopolists, the analysis of “NRF market n. 18” (that of radio-TV transmission services) carried out by AGCOM (2006) registers that two operators (RAI and chiefly RTI-Mediaset) have acquired a strong advantage in digital transmissions (in terms of multiplexes, coverage and frequencies – see *ibidem*, tables 15 and 16), which is likely to become a dominant position once the operators will be free to convert their analogue frequencies into digital.

This concentrated spectrum market is conducive to anticompetitive practices, especially when an effective countervailing regulatory system lacks: but this is what actually happens in Italy. In fact, for dominant network operators, Italian law has prescribed a regime of legal reserve (equal to 40% of their multiplex capacity), to be assigned by tender to independent content providers and broadcasters with insufficient network coverage. However, this guarantee system, initially designed in 2001, has been implemented with delay and under a very complex normative procedure: the first beauty context has been initiated only in January 2008. Eventually, its practical failure was even recognised by the concerned regulator (see AGCOM, 2007; sect. *Consideranda*). As argued by Matteucci (2008), the wide degrees of freedom and discretionary power left to network operators in the design of the terms of the tender (especially for the access price) are the principal reasons of its failure.

Despite the Commission's neglect of this point, it is rather clear that Italian dominant

³⁹ In fact, as we demonstrate *infra*, the methodological difficulties involved in assessing a possible indirect advantage for network operators, together with the peculiar vertical integration of the Italian TV, prevail on the theoretical argument.

operators do have the right incentives to restraint third party access to the DTT transmission market⁴⁰, and face a regulatory framework so weak to empower them to carry out discriminatory conduct. So, any measure stimulating the digital audience is likely to impact asymmetrically on network operators, reinforcing mostly the terrestrial and, among these, the dominant ones.

On the other side, the potential advantage for network operators is “more indirect” than that for broadcasters, so that it proves more difficult to be estimated. In fact, while the broadcaster’s advantage mainly works through the creation of digital audience and entry pre-emption, that of the network operator is estimated indirectly throughout the broadcaster’s differential willingness to pay for being on that platform. However, this differential willingness to pay is function of the platform diffusion, but also depends on a series of additional variables – *in primis* the content attractiveness of that channel - which are controlled by broadcasters. So, the analytical setting becomes rather complex, and the short duration of the campaign does not allow any robust estimation strategy. On the light of these methodological difficulties and the vertical integration of Italian DTT operators⁴¹, the Commission “solution” of considering proved only the advantage for broadcasters appears rather reasonable – and in any case without feasible practical alternatives.

Moreover, additional data confirm that the main advantage of the public subsidization campaign effectively run through pay-per-view services. In fact, table 5 confirms that pay-per-view revenues (mostly retail) represents the lion’s share of DTT revenues – especially for Mediaset - while advertising revenues, because of the low diffusion of the DTT platform and the small FTA audience, have been practically negligible.

Table 5 – Annual revenues of Italian DTT players

	2004	2005	2006
Advertising (gross of agency)			
Mediaset	≈ 0	3.700	4.500
Telecom Italia Media	0	≈ 0	≈ 0
(Other*) national broadcasters	0	1.000	n.a
Independent producers	0	[200-300]	n.a.
Pay-per-view (PPV)	2004	2005	2006
Mediaset	n.e.	44.000	108.000
<i>Wholesale of broadcasting rights (for DVB-H, etc.)</i>	n.e	4.400	18.100
Telecom Italia Media	n.e	10.400	31.500

Legend: Thousands of €, rounded. n.e.= service not available; n.a. = data not available.

* = Data includes Telecom Italia Media, RAI, HCSC Italia, Espresso Group.

Sources: AGCOM (2006; sect. 368) for 2004 and 2005 (advertising). Company accounts: 2005 (for PPV) and 2006.

Selectivity and distortion of competition

Next, the measure appears critical also under the “selectivity” and the “distortion of competition”

⁴⁰ As affirmed by the third Italian player (small compared to the duopolists) “La 7” during an AGCOM public consultation, each of the Italian duopolists has incentive to fill the legal reserve of 40% of its multiplexes with weak channels, to avoid the “*business stealing*” effect. In fact, transmission revenues are negligible compared to the potential lost of advertising revenues engendered by a successful competitor transmitted on its network.

⁴¹ Additionally, for Italy this estimation exercise is made more complex by the shadow prices used in the group accounts for evaluating the intra-group transfers of transmission capacity.

dimensions. Concerning the first, satellite broadcasters *in toto* cannot profit from the increase in the digital audience brought about by the subsidy. The Commission also remarks (see EC, 2007a; sect. 110) that neither a potential current unavailability of MHP satellite decoders would justify the explicit exclusion of this platform from the measure, given that national policies must be technologically neutral and stimulate the spontaneous offer of TV services on whatever platform, without reflecting the *status quo* of the equipment market.

Concerning competition distortion (*ibidem*, sect. 102-112), several considerations apply. First, as with selectivity, the “distortion of competition” effect materializes against those operators (both broadcasters and network operators) using platforms other than DTT or unable to transmit in simulcast (such as many analogue terrestrial broadcasters lacking or excluded *in toto* from digital frequencies).

Second, there is a distortionary effect of the measure specific to the pay-TV market. In its reasoning, the Commission first clarifies that pay-TV (characterised by monthly subscription fees) and pay-per-view services are substitute – although partly at the moment⁴²; this implies that the public subsidy modifies the relative terms (*in primis* the prices and margins) of the two services and thereby their competitive strength. After all, also the Italian antitrust Authority has recently confirmed that different pay-TV offers constitute a single relevant market, independently from their delivery platforms (be it satellite, DTT, or IP-TV) (see AGCM, 2006c; sect.52). In other terms, the subsidy campaign broaden selectively the pay-TV market, favouring the pay-per-view offers via DTT.

Moreover, the Commission convincingly remembers that there is another connected distortionary effect of the subsidy measure: its influence on the platform choice, acting via the reduction of the household’ set-up costs of DTV in favour of DTT. Further, this effect has unfolded in a rather sensitive period, that of the digital switch-over, when the bulk of the viewers of analogue TV (in Italy mostly terrestrial) needs to choose which digital platform to switch to. On this point, the Commission also adds that, given the *switching cost* and inertia implied by any future change of platform, this second type of distortionary effect is likely to have a prolonged duration.

According to us, the latter possesses far more perverse consequences than those mentioned by the Commission. First of all, the acquired platform advantage is permanent, and cannot be recovered at any time by the discriminated competitors, who lost potential customer base. In fact, the standard remedies available under the EU state aid control regime – merely the recovery of the monetary subsidy – by definition cannot affect the installed customer base. Second, and more important, the illegitimate platform advantage is self-reinforcing, since broadcasting is permeated by scale and network effects: in the meanwhile, the subsidized platform has enjoyed positive dynamic feedbacks (for example, those between platform diffusion and content acquisition). Third, these distortionary effects on the platform choice take place in a country where terrestrial TV is already dominant, and where the national policy on TV since the Seventies has been biased in favour of it (for an historical reconstruction, see Matteucci 2007; sect.2). As a result, the permanent distortion of competition in favour of the terrestrial platform and hence dominant broadcasters stands out clearly.

At the same time, the distortionary influence of the subsidy on the platform choice translates almost automatically in the discrimination of competing delivery networks, which again sees the terrestrial platform favoured by the measure over satellite. This happens because the subsidized decoders were almost entirely mono-platform, so that a direct causal link among subsidy, eligible decoder, platform and network arises. However, for the same considerations made under the “advantage” test (see *supra*), for network operators the Commission does not consider proved the distortionary effect of the measure (see EC, 2007a; sect.112) .

The Commission’s position appears - once again - procedurally legitimate. However, another line of reasoning is possible, and suggests a more profound assessment of the Italian policy

⁴² Indeed, the degree of substitution is going to become stronger, since recently Mediaset has declared the intention to extend its DTT services introducing the subscription formula, beginning with the TV season 2007/08.

on the basis of its potential for multiplatform competition and a rapid switchover. Basically, the *de facto* preferential treatment given by Italy to the terrestrial transmission qualifies as technically and economically inefficient. In fact, this treatment is at odds with the respective technical ability of the platforms to secure a quasi universal coverage. First, achieving the entire coverage of the national territory, beside being uneconomical, is also impossible with terrestrial transmission (be it analogue or digital), particularly where – like in Italy – there are serious unsolved interference problems (stemming from its chaotic distribution of the spectrum) and a difficult orography of the territory. Instead, digital satellites since the mid-Nineties have reached an EU-wide footprint, much larger than national coverage, at affordable costs and without public support. As a consequence, should a preferential policy be adopted, it would call for satellite; and a multiplatform approach would be required to secure the coverage of the most difficult parts of the territory. This hypothetical alternative approach is in fact at odds with the mono-platform orientation permeating the Italian DTT policy⁴³.

To summarize, the Commission's findings on the ability of the decoder subsidy to distort inter-platform competition are right, but incomplete; in fact, we believe that the engendered distortion is more serious than that detected by standard (static) antitrust analysis, prevailing in the Commission's reasoning. Finally, our opinion is widely supported by empirical evidence, provided by both interested (Sky) and independent third parties. Even dismissing Sky's estimates on the business stealing effect of the public subsidy as not neutral⁴⁴, a few financial reports were forecasting a positive impact of the measure on the PPV diffusion and company's accounts. For example, at the beginning of 2005 Deutsche Bank (2005; p.26) argues that, thanks to the subsidies, «Mediaset can develop DTT as a low risk/low-cost way of entering the pay-TV market». One year later, the same institution revises its forecasts, upgrading its positive outlook on Mediaset PPV (see Deutsche Bank, 2006). First, it notices that, thanks to the subsidies, in 2005 DTT diffusion experienced a stellar growth, outpacing that of satellite and cable (IPTV): in particular, DTT attracted 82,3% of the new DTV households (net additions), while Sky, despite its massive advertising campaign, got only 13,8% of it (see table 6). Second, despite a lower-than-expected PPV customer base – we believe mainly due to the permanent DTT reception problems – in 2005 Mediaset's offer collected a higher cash revenue: the two facts imply that the actual ARPU (average revenue per user) in 2005 was more than double of what was forecasted (100€ instead of 40€). Another confirmation about the increasing power of attraction of the PPV offer comes from data on the rate of recharge of Mediaset smart cards – a rate which almost doubled between August 2005 and the first quarter of 2006 (see *ibidem*, p. 21)⁴⁵.

⁴³ The acknowledgement of the DVB-C platform by the subsidy measure was merely formal, since this platform in Italy was covering a negligible portion of the territory.

⁴⁴ Nonetheless, Sky's estimates about a relevant "business stealing" effect seem to be more correct than Italy's considerations. In fact, Sky considers the two directly competing products, pay-per-view on DTT and Sky sales of the "Premium Sports" package, finding a negative impact of the subsidy on the latter. Instead, the generic dynamic of the satellite pay-TV platform (+7.4% of subscriptions during the first semester of 2005), cited by Italy as a proof of the not distortionary effect of the measure (see *ibidem*, sect.46), appears to be not directly relevant, since in the first semester of 2005 pay-per-view on DTT was only made of football matches.

⁴⁵ In this period, beside Premier League football matches, another fundamental premium content was added to the PPV offer: library and first release movies, priced at competitive levels (respectively 2-4 € each).

Table 6 - Italian DTV households: stocks and 2004-05 net additions

Platforms	2000	2001	2002	2003	2004	2005	Net add. (%)
Satellite pay-TV	2524	2492	2848	2000	3100	3604	13,8
IPTV	-	-	-	-	85	227	3,9
DTT	-	-	-	-	875	3890	82,3
Cable	64	62	62	61	61	61	0
DTV homes	2588	2554	2910	2061	4121	7782	100
TV homes	22425	22426	22427	22428	22432	22433	-
DTV penetration (%)	11.5	11.4	13.0	9.2	18.4	34.7	-

Legend: End of year data, in thousands, except last row and column, in %. "Net add.": Platform's % share on total net additions, between 2004-05.

Source: Deutsche Bank (2006).

The findings of this analysis seem to be confirmed by the recent conclusions of the Italian Communications Ministry (2007), which was responsible for the calculation of the portion of the illegitimate state aid to be reimbursed: basically, only Mediaset was found to receive a net positive indirect benefit, to be reimbursed.

3.3. The compatibility assessment of the subsidy campaign: between economics and politics

Once established that the Italian measure constitutes state aid, the Commission further evaluates if the exceptions contained in Artt. 86 and 87 of the EC Treaty apply. These are here summarised in three main points.

First point. Art. 87(2)(a) provides a derogation for aid with social character granted to individual consumers. The Commission first notices that the Italian measure did not mention any social or income criterion of eligibility for the subsidy (see EC, 2007a; sect. 125): moreover, it points out that, being Art. 87(2)(a) an exception to a general rule, its requisite of "social character" cannot be extensively interpreted. Finally, it recalls the conclusions of the AGCOM survey on the diffusion of DTT (see AGCOM, 2004), according to which the decoder price – even without public subsidy – was affordable for a large part of Italian population since 2004: coherently, any aid with "social character" should have targeted the most disadvantaged share of the population. Consequently, the Commission rejects the Italian argument that the subsidy campaign was targeted at disadvantaged social classes.

We agree with the Commission's opinion; further, we believe that the Italian measure was intentionally designed without any income criterion, at least for two main reasons:

- a) Aid directed to socially disadvantaged classes becomes economically meaningful once DTT coverage has reached a quasi-universal level and analogue transmission is about to be switched off, since it prevents that low-income households are excluded from the reception of TV services. This was not the case of Italy, where, still today, DTT diffusion stagnates and a credible switch-off date is missing. The "social" rationale of the DTT aid, instead, was clearly stated in the Austrian measure (see EC, 2005b), which contemplates two kinds of consumer subsidy: those aimed at supporting the "early adopters" of DTT (see *ibidem*, sect. 4, category IV), and those reserved to low-income households (see *ibidem*, sect. 4, category V) – the latter also implemented in France (see EC, 2007f). According to the most

influential economic theory⁴⁶ (correctly reflected in the Austrian measure), the incentive mechanisms and eligibility rationales needed in the two cases are different. The first type of subsidy, that for “early adopters”, is aimed at building the critical mass for the new technology and fuelling the subsequent imitative bandwagon: consequently, it should be limited to the early steps of the DTT market development, and be designed on degressive terms; however, it should not require additional eligibility conditions, other than verifying that the market price of the subsidized equipment represents a significant purchase barrier for potential consumers – including “innovators”. Conversely, the second type of subsidy, that for low-income and socially-disadvantaged classes, typically face innovation and risk-adverse recipients (“late comers” or “followers” consumers, such as elderly people): therefore, according to the life-cycle of a new technology, this social subsidy should be allocated at a later stage, when the analogue switch-off is close and the DTT technology is stable and mature.

- b) In the light of the pay-TV model soon adopted by the two Italian DTT operators, the second type of subsidy would have been rather useless, since pay-TV services is a consumption of the wealthier social classes.

Definitely, a social subsidy was also economically useless for Italy, especially in 2004-05, when the DTT platform was largely unknown or unavailable in the country. However, we want to stress that also the first type of DTT subsidy - which in principle should aim at a universal mass-audience and a FTA business model - might prove critical and yield unintended and perverse effects. In fact, if the subsidized early adopters remain unsatisfied by the low technological or entertainment performance of the new TV platform, they may turn in opposers, and even delay its adoption by their negative informative spillovers; indeed, Italian data support this hypothesis and the idea that the DTT diffusion has been mainly driven by the pay-TV offer, not capable of ensuring the mass-scale diffusion of the platform enjoyed in the analogue mode. After all, recent data continue to highlight that, on overall, the FTA offer is plagued by a low degree of attractiveness: in the second half of 2007, despite the fact that the DTT platform has reached 19,2% of Italian TV households, only 15,1% has its decoder effectively connected; moreover, this 15,1% of the TV population generates barely 2,7% of the total audience share⁴⁷, and this gap between DTT diffusion and effective audience is the highest compared to other similar EU countries.

Second point. The Commission states that the Italian subsidy does not qualify for the derogation established for a project of common European interest, jointly planned by Member states – under Article 87(3)(b) - since the measure was designed as the initiative of a single member, and was not coordinated with anyone other to avoid any possible adverse effect on trade and competition.

Third point. The Commission analyses if the measure can be deemed compatible under Art. 87(3)(c), stating an exception for measures that pursue an objective of common interest; additional qualifications are that the aid fulfils the criteria of necessity and proportionality (see EC, 2007a; sect. 132-171). This test implies the verification of three basic steps: 1) the objective of common interest is well-defined, 2) the design of the aid is appropriate to address that objective (be it a market failure or a social objective), and 3) the distortionary effects of the aid on competition and trade are limited, so that the final net balance of the effects of the measure is positive.

The Commission argues that the first step is clearly met by the Italian measure. In fact, following several EU documents (reviewed in section 2.1 of this paper), both the promotion of the digital switch-over and the diffusion of open standards for interactivity qualify as well-defined objectives of common interest. In particular, since interoperability via open standards was recognised as a facilitator of interactivity, the Commission itself invited member states to consider

⁴⁶ Particularly, we refer to a large body of recent works from the economics of innovation, both mainstream and evolutionary. For a recent coverage, see Stoneman (2002).

⁴⁷ Data from DGTVi (2007; chp.5) relative to September 2007. The 2,7% TDT audience share includes both FTA channels simulcasted in digital (1,86%) and new DTT channels (0,83%).

the possibility of offering consumer subsidies for this kind of open decoders. These points, considered *per se*, suggest that the EU policy would allow in principle a subsidy like that offered by Italy.

However, the Italian measure appears critical under the last two steps of the test, those verifying the appropriate design of the aid and its limited distortionary effects on competition and trade. These elements are clearly developed in the new EU approach to state aid, following the State Aid Action Plan of 2005, setting a refined economic framework of analysis for clearing members' state aid initiatives (see Buelens et al. 2007). Concerning the second step of the test - the assessment of the correct design of the aid - it involves three stages of analysis: the existence of the basic problem (be it a market failure or a social cohesion problem), the appropriateness of the aid as a remedy, and the parsimony of the measure with respect to the objective ("the minimum necessary" criterion). The Commission' analysis of the possible market failures arising from digital switch-over in Italy pinpoints four possible types⁴⁸:

1) Coordination failures between market players.

These failures can be of two types. First and foremost, due to the rival and scarce nature of the spectrum, and the additional costs of transmission implied by the simulcasting regime, broadcasters need to coordinate the spectrum blocks used and then to agree on common deadlines for the analogue switch-off⁴⁹. This type of coordination mainly affects the supply-side. Further, consumers might delay the DTV adoption until a sufficient number of broadcasters or varieties of channels is available on the new platform: this interdependence between hardware and content - technically, an indirect externality - requires coordination between demand and supply, but also interacts with the first type of coordination, which acts as a precondition⁵⁰. According to the Commission, both the German and the Italian measures (respectively, a transmission cost subsidy and a decoder subsidy), are technically inadequate to address these coordination failures (see respectively, sect. 102 in EC, 2005c and sect. 146 in EC, 2007a). In particular, in the case of Italy, the Commission affirms that a legislative deadline is a sufficient instrument for market coordination and an early analogue switch-off, and that, given the dominant position of the terrestrial platform in the Italian TV market, the second type of mis-coordination (that between demand and supply) is unlikely.

The Commission' position appears incomplete and potentially misleading. Undoubtedly, it is right in affirming that demand-side instruments⁵¹ (such as subsidies) are inappropriate to solve supply-side coordination problems. However, its reasoning is less rigorous when it comes to analyse effective alternatives, found in a legislative deadline for the analogue switch-off. This passage is rather simplistic, and fails to acknowledge the complexity of the Italian DTT coordination failures. First, Italian broadcasting policy has chronically lacked enforcement, so that any single drastic measure, such as a close legislative deadline for switch-off, has already failed – in several occasions, see section 3.1 - to appear a credible commitment⁵². Second, a legislative deadline alone does not remove the obstacles preventing a prompt networks' roll-out: basically, the chronic spectrum chaos and the countervailing policy measures (which in Italy have been based on

⁴⁸ The structure of the analysis of the Italian case closely resembles that carried out in the Berlin-Brandenburg decision (see EC, 2005c; sect.101-120).

⁴⁹ This coordination requires as a precondition a suitable nation spectrum management policy. Usually, Western countries created digital slots reserved to DTT experimentation and launch, and then assigned them to broadcasters. This did not happen in Italy, as illustrated *supra*.

⁵⁰ Models addressing coordination problems in the digital switchover are those of Adda and Ottaviani (2005), Maier and Ottaviani (2006) and Harison and Matteucci (2008).

⁵¹ Demand-side instruments typically address static distribution aims and consumer welfare targets; here their efficacy is generally proved.

⁵² The credibility of the policy is lowered in this particular sector by the public service nature of TV and its socio-political influence. Operators and TV viewers expect that analogue transmissions will not be switched off until a quasi-total share of the population is equipped to receive digital services. These expectations need to be counteracted with more powerful incentives, than simple decoder incentives.

decentralised private spectrum trading) do not guarantee any effective, country-wide and timely spectrum redistribution and coordination. After all, the same AGCM (2004; p. 137-9) had previously warned Italian Government and Parliament that centralised operations of spectrum reassignment were the unavoidable precondition for enabling the deployment of a sufficient number of national and local multiplexes in Italy. Finally, additional supply-side conditions – mainly antitrust measures⁵³ - need to be guaranteed, before a smooth and pluralistic DTT take-off can occur.

2) Positive externalities from the switch-off.

Basically, total benefits from switch-off may largely surpass broadcasters' private incentives to migrate to digital. This point is particularly complex for Italy, as shows its comparison to Germany (Berlin-Brandenburg case). In EC (2005c, sect. 103-107), the Commission objects to the Federal Government' argument that the German transmission subsidy is an appropriate instrument to stimulate a prompt switch-off and the release of analogue frequencies. First, it holds direct spectrum regulation to be the most appropriate instrument as, for example, to limit the validity of the analogue licences to the switch-off. Second, it argues that German incumbent broadcasters need not to be further compensated for releasing analogue spectrum, since they were awarded DTT licences in exchange. Moreover, digital transmission is cheaper than analogue, and allows to carry more and improved services (pay-TV, interactive services, portable reception), so that broadcasters do internalise some of the positive externalities of the switch-off; this further reduces the need for their compensation with public funds. These considerations equally apply to the Italian case, in a reinforced way. The first reason is the preferential legislative treatment given (mostly by Law n. 112/04) to Italian analogue incumbents on spectrum. In particular, contrary to the German ones, Italian broadcasters were left maintaining all their analogue spectrum (including that redundant!), without any limit⁵⁴ or binding restitution obligation⁵⁵. This is also the main reason why Italy is likely to miss any digital dividend, and the Commission opened an infringement procedure under art. 226 of the EC Treaty. Similarly, while the analogue switch-off might potentially promote competition and reduce the oligopoly rents enjoyed by existing broadcasters, these potential pro-competitive effects do not entitle incumbent broadcasters to claim any public compensation; nor – adds the Commission - does the fact that the open technology subsidized by the Italian measure is prone to some free-riding by competing broadcasters⁵⁶, and therefore unattractive for strategies of private subsidization. More generally, the relation between multiplatform competition (as stemming from analogue switch-off) and state aid unfolds other aspects, worth to be further analysed.

3) Strengthening of competition between transmission platforms.

This point specifically addresses the influence of state aid on market power and multiplatform competition. Market power typically reduces consumer surplus, so that any state aid measure which reduces the former could be conducive to the latter; at least, this effect is likely to emerge in a static

⁵³ Among these, Matteucci (2005) recalls the de-concentration of the advertising market (to enable other national broadcasters to finance the relevant DTT investment) and the break-up of some anticompetitive ties which link the private incumbent with some of the smaller players.

⁵⁴ The only constraint imposed by law was the compulsory assignment of 40% of the new digital capacity to independent producers, but this measure has not been practically effective (cf. *supra*) – and in any case the capacity assignment has to be remunerated at market prices.

⁵⁵ For example, Mediaset has reallocated part of its TV spectrum for the launch of the new mobile TV services (DVB-H). Moreover, in the region of Sardinia, where a partial analogue switch-off has been reached, Mediaset has announced to have reallocated its digital dividend to HDTV trials.

⁵⁶ In any case, also the Commission acknowledges that the likelihood of entry and the “risk” of free-riding in Italy appears rather limited, because of the concentration (spectrum and economic resources) and vertical integration of the TV value chain.

setting of analysis⁵⁷. However, the Commission (2007a, sect. 153-4) does not explore this point. It simply argues that the Italian measure cannot be considered legitimate on the basis of its pro-competitive effects in the pay-TV market; and remembers that pro-competitive conditions (mainly behavioural remedies) were already imposed as part of the clearance of the Sky' merger case (see EC, 2003c). Then, it synthetically concludes that in general state aid is not an appropriate instrument to solve competition deficits. Indeed, while we cannot disagree with the last sentence, we believe that the relation between state aid, market power and competition would deserve a much deeper evaluation, so that the Commission' reasoning appears superficial.

Paradoxically, a fuller treatment of the same point was provided by the Commission in the first German DTT case, where it would have been less compelling, due to the higher level of TV multiplatform competition existing there. In fact, in EC (2005c; sect.108-114) the Commission notices that in the Berlin-Brandenburg TV transmission market there is no evidence of a competition deficit: several platforms guarantee both intraplatform (within cable) and multiplatform (cable, satellite and IPTV via DSL) competition. Since there is no patent market failure, the German transmission subsidy for DTT broadcasters appears not justified to the Commission. Moreover, it warns that any selective support to DTT might deter investment in competing networks (such as the emerging IPTV via DSL), thereby contradicting the general NRF principle of technological neutrality and its related goals of facility-based competition and investment: as effectively summarized by the relevant Commission's Communication (see EC, 2003b; p.15), during the switchover "in principle, each network should compete on its own strengths".

Traditionally, the neutrality principle admits a few exceptions. First, multiplatform (or intraplatform) competition may lack. As the Commission hypothesizes in the German case, if there were a competition problem at network level, specific state intervention could have been legitimate, but the measure should have targeted that level, with transparent measures aimed at the development of the concerned platform⁵⁸. Second, other well-defined general interests may justify selective aid to a particular network⁵⁹. To summarize, also in these exceptions to the technological neutrality principle, state aid would be subject to the proportionality test.

Italy situation seems to be eligible for both exceptions, so that in principle appropriate state aid could have been called for. In fact:

- a) Differently from Germany, in Italy at the launch of DTT (in 2003) multi-platform competition was negligible, because of the absence of cable, the monopolization of satellite (following the merger of Sky), the technological backwardness of DSL and the "blockaded duopoly" in terrestrial TV (RAI-Mediaset). Moreover, the high level of vertical integration existing in Italian TV (both in the pay-TV and FTA markets), enabling foreclosure of the downstream broadcasting markets, would have called for asymmetric measures favouring new entrants, as provided for by EU regulation in TLC markets (retail and wholesale).
- b) Additionally, the general interest would clearly legitimate interventions aimed at rendering more pluralistic the Italian incumbent FTA platform - a necessity advocated by the Italian Supreme Court's rulings, both in 1994 and 2002.

So, it seems to us that the Commission's argument that state aid is not an appropriate mean of stimulating competition is not true for Italian TV, which is indeed plagued by severe market failures mainly attributable to market power and reinforced dominance. Rather, a more appropriate argument – perhaps too politically sensitive to be spelled out - would have been that the actual

⁵⁷ In fact, in a dynamic setting further conditions need to be verified. Moreover, in two sided markets or in vertically related markets, the analysis must carefully model and explore the so-called "effect on rivals" implied by the state aid measure. On this point, see further *infra*.

⁵⁸ As an example, the Commission suggests that an open tender procedure for the award of the network licences could have determined the extent of the aid needed for the take-off of the terrestrial platform.

⁵⁹ As reminded in EC (2003b; p.15) , « any public support for one particular option cannot be excluded but should be justified by well-defined general interests, and implemented in a proportionate way. Otherwise it would appear discriminatory and could jeopardise investments in other networks». This provision also caters for the principle of subsidiarity permeating EU broadcasting policy.

Italian measure did not address at all multiplatform competition and vertical integration concerns, although potentially it could have done, if it were conceived differently.

In fact, its actual design overtly favoured incumbent operators, and in particular Mediaset, controlled by the family of the Prime Minister Berlusconi, as recently recognised by the Italian Communication Ministry (2007). Moreover, several limitations of the actual measure can be highlighted. First, the subsidy design was too simplistic, while the Italian market structure is far more complex and vertically integrated than the representative European one, where the network is neither owned nor operated by the broadcaster⁶⁰. Further, the Italian DTT policy (including its subsidy campaign) was not prepared by suitable industrial and antitrust intervention, as instead recommended by several authoritative institutions. Specifically, demand side state aid instruments (subsidies and informative campaigns) should have been carefully preceded by supply side measures: at least, centralised spectrum coordination and refarming were necessary, to avoid that the existing spectrum bottlenecks asymmetrically had channelled the benefits of state aid, directing them to the sole benefice of a few private incumbents (in practice, only Mediaset, according to the Communication Ministry, 2007).

So, rather than merely dismissing the pro-competitive effect of the subsidy in pay-TV, the Commission should have compared it with the effect in the FTA market, where competition and pluralism concerns have always been bigger. As explained *supra*, here the effects of the subsidy (and the overall DTT policy) have been perverse. In fact, in FTA TV, dominant terrestrial broadcasters have been able to pre-empt the digital market – while waiting for its spontaneous take-off – and at the same time maintain an unchallenged dominant position in the analogue one, using its rents to cross-subsidize strategies in emerging markets (pay-TV). This unpleasant outcome, rather than de-legitimising state aid *in toto*, recalls the need for a more comprehensive test of state aid control, stressing efficiency criteria, the “effects-on-rival” of the measure, and also performing a more comprehensive welfare analysis (see Friederiszick et al., 2007).

To conclude, we believe that, once designed appropriately and accompanied by coherent regulatory policy (such as the “ladder of investment”, see Cave 2006), state aid intervention can effectively stimulate the roll-out of alternative and more performing platforms. The fact that this has not been possible in Italy, and has even dampened emerging multiplatform competition, should be attributed to its peculiar institutional and interests conflicts, rather than to the inadequacy of state aid *per se*.

4) Promotion of innovation.

We believe that this point is crucial to understand DTT policy in EU. After having considered the intrinsic innovative potential of DTT, the Commission needs to assess if a market failure is preventing the platform deployment and thereby the diffusion of DTV; if this is the case, the Commission must allow state aid to legitimately and proportionally compensate for it, to avoid that innovation is stifled and the achievement of the social goals from Information Society prevented.

Again, the Berlin-Brandenburg case provides a suitable benchmark for the Italian one. In the former, the Commission develops a rather harsh critique of the techno-economic profile of DTT (see EC, 2005c; sect.115-119). However, what is primarily at stake in the German case is not the presence of a market failure (which is indeed not found), but the very innovative potential of DTT, which is severely belittled. First, the Commission argues that interactivity is not an intrinsic feature of DTT, since, as for satellite⁶¹, it needs a separate TLC return channel. Moreover, the Commission questions the actual effectiveness of the other purported technological advantages of DTT; in fact, it

⁶⁰ With vertical integration between broadcasters and network operators, any measure targeting the latter is immediately reflected into the former: so, the cautionary guideline of the Commission in the German case – that of conceiving a state aid measure targeting the network level, in Italy would be useless.

⁶¹ This claim of the Commission is not entirely correct, since new generation satellites can provide a wireless return channel. In the future, these services will become economically viable also for household reception.

notices that in Berlin-Brandenburg neither the market developments nor the subsidy's conception are targeted to the introduction of the new media and telecom services, thereby reducing the DTT technological novelty. However, the most striking sentence is found in section 119, where the Commission, after having affirmed that the delay in the DTT roll-out is not hindered by market failures (but rather by its mediocre technological profile), concludes that «public support of DTT [...] may hamper the roll-out of other platforms, e.g. DSL, which might have other advantages in terms of innovation and technology and are capable of developing autonomously». The moral of the German case, indeed, is rather clear and drastic: the low diffusion of DTT is not the by-product of a failure of the market (which cannot provide a better alternative), but quite the opposite: is the normal outcome of the market functioning, which marginalises an inferior platform. In this context, asymmetric public support to DTT would be distorting, since it creates an artificial advantage that hinders the better performance of competing platforms (mostly DSL and digital cable), and channels households to a second best alternative (DTT).

Since the technology of the concerned platform is identical in the two countries (being based on the same European standard DVB-T) while the actual implementation in Italy far worse, one would have expected a similar conclusion, also for the Italian case. Surprisingly, in EC (2007a; sect. 161-65) the Commission does not evaluate at all the techno-economic characters of Italian DTT (coverage, reception, interactivity, interoperability, innovative services), neither assesses if these characters are really worth the generous subsidy they got from the Government. It only argues that the reasons adduced by Italy to justify the satellite exclusion are flawed, since interactive and interoperable satellite decoders were technically available (at least for FTA services⁶²).

So, the Commission avoids examining the many technical criticalities displayed by Italian DTT services. Moreover, it ignores the patent failure of the interactive and interoperable projects via DTT, which was the core original justification for its public support and subsidization. In fact, according to the stated plans of the Berlusconi Government, interactive services – both private and public, such as the T-Government – should have been developed and delivered primarily via the DTT platform, despite the substantial immaturity of the technological platform and the tentative nature of their business model⁶³. Nor the Commission discusses the strong ambiguity intrinsic to the multidimensional “standard openness” criterion (see West, 2003), on which Italy has simplistically based the interoperability requisite, requested for the subsidy eligibility in the decoder campaign.

In time, there has been a mounting evidence witnessing the unrealistic ambitions surrounding the Italian T-government and T-business projects, most of which are now frozen. The Commission's neglect of this point is quite surprising, and irreconcilable with the increasing evidence on the poor performance of DTT interactivity and its negligible use by TV viewers⁶⁴.

In conclusion, in the Italian case the Commission refrains from using the same line of reasoning applied in the German one, both for the distortionary impact of state intervention on the roll-out of alternative more promising networks, and for the comparative techno-economic merits of the subsidised platforms. In other words, apart from sanctioning the illegitimate satellite exclusion from the decoder campaign, the Commission decision does not spend a word to question the Italian

⁶² In reality, truly interactive services (not MHP based) were already available at the end of Nineties also in satellite pay-TV, as part of the Stream bouquet. They were later discontinued by Sky, after the merger. Moreover, the Commission's satellite-DTT comparison appears rather superficial, since there are other techno-economic elements (beside interactivity and interoperability) that contribute to qualify satellite as a superior digital platform, with respect to DTT. For a fuller treatment, see Matteucci (2004a; chp.4).

⁶³ Concerning the first: narrowband of the TLC return channel, insufficient memory of the decoder, absence of shared standards and solutions for the delivery of T-government services. Concerning the second: lack of complementary technical services, lack of consumer' skill for e-commerce and e-government via DTT, unsuitable marketing strategies; on these points, see also Matteucci (2008).

⁶⁴ Recently, the DGTVi (2006; p.88) study has remarked that the role of interactivity in DTT was overstated. A small share of decoder holders keeps connected the decoder to the telephone socket, and fewer use interactive services. Most of the services accessed qualify as local interactivity: quizzes, games and reality-shows. They work as traditional TV-text, for which a MHP module for remote interactivity is redundant. Similar conclusions regarding T-government initiatives have been drawn by the CNIPA President in a recent Parliamentary hearing on DTT (see CNIPA, 2007).

DTV policy, entirely focused on the promotion of the terrestrial platform, and perpetuating the past analogue legacy⁶⁵.

Indeed, in the present case the Commission's cautiousness does not come as a surprise, and can be easily understood. In this respect, we believe that two layers of problems can be identified, one valid for the generality of the EU cases, and one particularly specific to Italy.

First, state aid in media markets is a peculiar green field for the application of antitrust principles, and especially for those of the NRF, which are mixed with regulatory stances. The difficulties arise from a variety of causes. NRF principles are themselves multifaceted and pose policy trade-offs between different goals. Moreover, strict exceptions to fundamental principles (for example, those to the technological neutrality of the policy) are likely to become generalised and gratuitous derogations when the Commission faces the bargaining power of a member state - rather than of a company, as in standard antitrust cases.

Second, as anticipated in various sections, in the Italian state aid case another important factor seem to constrain the Commission's reasoning and sanctioning power: the strong and complex mix of institutional and interest conflicts underpinning the Italian media policy, since Berlusconi's descent into the political arena in Italy⁶⁶.

As a result, the antitrust interpretation of the Italian state aid case (and its overall DTV policy) is more difficult and multifaceted than that of similar EU members (such as Germany), where the Commission's analysis indeed appears more robust and straightforward. Another element to consider, which would deserve a larger treatment, is that the potential of the Commission's scrutiny is considerably reduced when it faces non-independent national Authorities.

Face to the serious problems affecting the NRF implementation in various countries, the current projects on a centralised EU communication Authority could offer a viable solution.

4. Conclusions

This paper analyses the recent policy experience of digital television (DTV) in EU, focusing on the introduction of the terrestrial platform (DTT) and the digital switch-over. Generally, the launch campaign was strongly promoted by member states, with various instruments: additional spectrum slots, compulsory deadlines for the analogue switch-off, public investment incentives and consumer subsidies. The EU Institutions have actively participated in the policy mix, and put a strong emphasis on technological neutrality and market initiative: in fact, investment in alternative networks and facility based competition remain the best way to ensure a fast and smooth transition to DTV.

The basic problem explored here is that members' state aid measures, if non appropriately scrutinised at the EU level, might be captured by private interests and national particularisms. This, beside affecting the single country, might also compromise the achievement of the common market; moreover, since national communication markets are increasingly integrated and interdependent, also EU members can be reciprocally affected by neighbours' decisions: the case of the DTT spectrum harmonization is a case in point. However, state aid control is a sector where the EU antitrust scrutiny proves traditionally complex and difficult, due to the bargaining power of the member states. Moreover, state aid control in media markets adds to it, due to the sensitiveness of the field and the novelty of the sector's phenomena for the established legal practice; in fact, the latter often relies on a static framework of analysis.

⁶⁵ As argued by Matteucci (2007), Italy stands as an exemplary case of captured and distortionary policy-making, which largely accounts for the politically protected and abnormal supremacy of the terrestrial platform in the analogue era.

⁶⁶ Berlusconi's political party, Forza Italia, is the biggest in terms of votes both at the Italian and European Parliaments (within the Italian representation). Moreover, in Italy the Antitrust and Communication Authorities – the EU Commission's counterparts for the application of the NRF – have been renewed by the Parliamentary majority of the Berlusconi's coalition.

Nevertheless, the Commission's decision on the first German case appears robust and logically straightforward. It highlights several technological criticalities of the DTT platform, which should be taken into account particularly in those countries where the terrestrial platform prevails. Moreover, the paper reviews other national measures (those of UK and France) which were found compatible with the technological neutrality principle. In particular, the UK case stands as an ideal benchmark for other countries, due to its participatory model and the balanced policy-mix adopted for the roll-out of DTV on a multiplatform basis. The France case provides another promising example, despite its late start.

Then, the Italian DTT policy experience is analysed. Here a centralistic approach, mainly composed of massive DTT advertising campaigns and public subsidies targeted at digital decoders was adopted. Obviously, the generous subsidization campaign was successful, but it did not stimulate a substantial diffusion of the DTT platform, and has mainly resulted functional to the pay-TV offer. Basically, demand side policies are vain when the supply side of the industry is unfit to offer a valuable FTA service. Further, the Italian campaign was not technologically neutral, since it excluded satellite, and as such it was eventually sanctioned as illegal. Then, a deeper analysis of the Italian DTV policy uncovers several additional flaws: discriminatory spectrum policy, uncritical support for DTT and selective bias against the roll-out of other more promising platforms.

Moreover, contrary to the other members, DTT in Italy does not help to solve its chronic problems of concentration and lack of multiplatform competition, since it was left pre-empted by incumbent operators. Consequently, Italy represents a good example of the fact that the NRF priority of establishing a level playing field among communication platforms and the quest for a neutral switchover may result *de facto* impracticable.

More generally, the Italian case stands as a paradigmatic example of political complexity, lobbying and institutional conflict. These tensions are likely to spread over if not appropriately addressed at the EU level, due to the inability of the national politics.

These problems also call for a broader and urgent discussion on the future of media policy in the EU.

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