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Introduction

Digital Television (DTV) offers the potential to overcome some of the limitations of analogue television, such as spectrum scarcity and picture interference. The availability of bandwidth allows viewers access to hundreds of channels, each aiming at specific market segments and each catering for specific interests. For some (Gilder, 1992; Negroponte, 1995) digital networks will bring about vast opportunities for specialised production and distribution, which will eventually mean the end of dominance of centralised broadcasting systems. DTV also comes with the promise to lower entry costs for new broadcasters, thus allowing the entry of new, small and talented broadcasters, with fresh ideas, that will contribute to innovation, more choice and diversity. For these reasons the European Commission (EC) promotes DTV adoption[1] and has published two Communications to accelerate digital switchover as a main driver for DTV take-up (EC, 2003; EC, 2005; Iosifidis, 2006).

This study argues that digitalisation has led to more channels, increasingly interactive and personalised services, but the switchover to digital broadcasting has only marginally benefited the public in terms of access, choice and programming diversity. Free-to-air digital content is a late phenomenon and notwithstanding some notable exceptions (i.e. the UK) it has yet to make an impact on European citizens. As European media markets expand and more and more channels are available, there is consequently a massive increase in demand for programming, but this programming is dominated by foreign, often American, output. In turn, the penetration of European markets by American content inhibits European culture and denies European citizens their entitlement to a collective identity. The prevalence of domestic output in the new digital offerings, attributed to the national character of the TV market, is another factor inhibiting the creation of a "European public sphere". Thus the Television without Frontier's (TWF) objective to influence the flow of European programming among Member States so to motivate the emergence of a common culture could be flawed. Evidence suggests that the digital media have not enabled a borderless media flow and thus have not led to a strong sense of cultural belonging across Europe, not least because of the national character of the television market and the prevalence of foreign, notably US output. Market segmentation and audience fragmentation, two of the main characteristics of the digital age, reinforce the argument that social cohesion will be at stake.

In terms of structure, the first part of the article presents an overview of current developments of DTV across the EU. Emphasis is paid on the process of digital switchover and the role of digital terrestrial television (DTT) as the main drivers for encouraging digital take-up. Part two examines the programming of the new digital channels launched by established terrestrial broadcasters, including public broadcasters, in sample EU Member States. The third and final part discusses whether the new digital services can contribute to programming diversity and to a common European identity.

The process towards digital switchover and the development of DTV

Digital switchover (the progressive migration of households, from analogue-only reception to digital reception) has been put high on the agenda of both national and European regulators in recent years. The role of DTT, in particular, is underscored in the e-Europe 2005 action plan as one of the three main access platforms to the information society, together with UMTS and fixed broadband access.[2] According to the e-Europe action plan, all Member States were required to disclose their national strategies for the switchover from analogue to digital terrestrial television by the end of 2003. In June 2005 the European Commission published a Communication "on accelerating the transition from analogue to digital broadcasting" which urged EU Member States to bring forward the likely date of analogue switch-off and called for a coordinated approach to making freed-up spectrum available across the EU. The EC suggested the year 2012 as a possible target for the completion of switchover (EC, 2005). This Communication builds on the 2003 Communication "on the transition from analogue to digital broadcasting" (from digital "switchover" to analogue "switch-off"), which set the benefits of switching over to digital broadcasting and initiated the debate on EU policy orientations on the amount and future uses of spectrum potentially released at switch-off of analogue terrestrial television transmission (EC, 2003).

DTT has already been introduced in most of the countries of the EU, while some others are still in the planning stage. The dates for the analogue switch-off that have been set by national governments vary greatly, depending among others upon penetration of digital services, the infrastructure and public awareness of the process to switchover (see Iosifidis, 2005; Iosifidis, 2006). Table 1 shows that most EU Member States have stated their intention to switch-off the analogue frequency sometime between 2010 and 2015. The Netherlands, Finland and Sweden are expected to be among the first EU Member States to switch-off analogue terrestrial television at a national level. In the Netherlands, in particular, the switchover process was completed in the end of 2006; in Finland, the terrestrial analogue network will be switched-off on 31 August 2007 and Sweden is expected to switch-off in February 2008. However, with the successful completion of the first switchover process in August 2003 Berlin/Brandenburg has played a pioneer role in Europe and beyond. But taken as a whole, Germany is not expected to turn-off the analogue transmissions before 2010. At the other end of the scale, national governments which have not committed to a prompt fixed date for analogue switch-off include some of the Southern European countries as well as some of the new members which joined the EU in 2004.

Table 1 - DTT Roll out and Switch-off Dates of Analogue Terrestrial TV in EU Member States (May 2005)

COUNTRY	DTT ROLL OUT	SWITCH-OFF DATE
Austria	2006	2010
Belgium (Flanders)	2005	2012
Britain	available since 1998	2008-2012
Denmark	31 March 2006	To start 2009

Finland	available since 2001	31 August 2007
France	31 March 2005	2010
Germany	2002 - 2010	2003: Berlin/Postdam region 2004: North Rhine-Westphalia 2010: nation-wide switch-off
Greece	March 2006	2012
Hungary	envisaged 2007	31 December 2012
Ireland	Trials began in August 2006	2012
Italy	available since 2003	31 December 2012
Lithuania	2006 in Vilnius	2012
Luxembourg	April 2006	September 2006
Netherlands	since 2003 in Amsterdam	October 2006
Poland	no decision yet	no decision yet
Portugal	2004 (tentative)	2010
Slovakia	2006	2012
Slovenia	envisaged 2008	2012
Spain	available since 2000	31 December 2011
Sweden	available since 1999	1 February 2008

Source: Author research

A close look at digital TV penetration across Europe reveals that digital TV conversion depends on the adoption levels of the technology. Table 2 shows that most of the countries with advanced levels of digital TV penetration have also set early dates for analogue switch-off. Finland and Sweden for example, which are committed to making the switchover to digital in mid-2007 and early 2008 respectively, were expected to end 2006 with a digital TV penetration of above 50 per cent. Norway was also expected to end 2006 with more than half of its households accessing digital TV. All these countries consider making the switchover before the end of 2010. Exceptions to this are Britain, arguably the most advanced European country with a digital TV adoption well above the European average, and Ireland, which in 2006 had a digital household adoption of 52 per cent but has fixed a late date for switchover. The deployment of DTT in Ireland has had a long history, with the first tests being carried out in 1998, but no public trials until August 2006. The system is not expected to fully launch until 2008, although the state is committed to a 2012 analogue switch-off date. In Britain, the world leader in digital TV broadcasting, the government policy is to replace today's ageing terrestrial broadcasting network during 2008 and 2012. Britain seems to proceed to switch-off with caution, for the switchover will be contacted on a region by region basis, starting from the Border region in 2008 and completing with the Meridian, London, Tyne Tees and Ulster region in 2012. The relatively late timetable for switch-off is expected to allow plenty of time to manage the public information campaigns and coordinated industry communications through *Digital UK*, the body which manages the transition.

Table 2: Top 10 European Countries by DTV Household Adoption (June 2006)

Ranking	Country	DTV penetration rate (%)
1	UK	70
2	Norway	53
3	Ireland	52

4	Sweden	51
5	Finland	49
6	Italy	43
7	France	41
8	Spain	33
9	Germany	28
10	Austria	22

Source: e-Media Institute
Note: includes the four DTV platforms - satellite, terrestrial, cable and DSL

It is clear that the European market in 2006 remains fragmented with regard to the adoption of technologies and there is little sign that Europe is developing a homogeneous digital TV industry. These variations in the national structure of the TV industry create a dilemma for EC regulators in terms of the feasibility of introducing common digital switch-off dates. The rationale of EC's involvement in the field is to create a workable internal market. Without doubt, switchover will bring about benefits to viewers and broadcasters, stimulate innovation and growth of the consumer electronics sector, and therefore contribute to the renewed Lisbon agenda. Hence the earlier the switchover process is started and the shorter the transition period, the sooner these benefits are realised. However, the Commission's proposal for a common timescale may not be feasible, in view of the disparities of Member States' approaches and advances to digital switchover. It has been argued that the EC's proposal for the 2012 deadline for completing terrestrial analogue switch-off may lead some Member States to an ill-timed, insufficiently planned and unduly rapid introduction of DTT services to catch up with other more advanced territories (see Iosifidis, 2006).

However, DTV in Western Europe was expected to reach a new record by the end of 2006, according to market research from *Strategy Analytics*. Overall, 75 million homes in Western Europe were reportedly accessing at least one digital TV service by the end of 2006, up from 56 million at the end of 2005. Of these, nearly 19 million homes bought digital TV for the first time. The report suggested that the most popular option for new subscribers was DTT, with more than 10 million new homes added in 2006. The report forecasted that by 2010 digital TV penetration will have reached 77 per cent, or 127 million homes. The UK with 94 per cent penetration will remain Europe's leading digital TV market in 2010, with Ireland, Austria and Sweden next in line. DTT will overtake satellite to become Europe's largest digital TV platform by 2008, the report said. Internet Protocol Television (IPTV) is also beginning to make inroads and take share from established satellite and cable providers, but it is expected to remain a niche market for the most part (Strategy Analytics, 2006; see also Datamonitor, 2006).

Terrestrial broadcasters' new digital services – an overview

The wide availability of DVT platforms has enabled a rapid expansion of digital channels globally. In mid-2006 the US viewers had access to about 440 digital services, followed by the UK viewers who could watch some 416 channels. Meanwhile, the French, Italian, Spanish and German audiences could access 244, 205, 108 and 93 channels respectively, as the proliferation of DTV platforms in these territories prompted the entry of various channel operators. Terrestrial broadcasters have taken advantage of additional broadcasting capacity to launch channels that rely on their traditional source of revenue, such as free-to-air broadcasters expanding their advertiser-funded channel portfolios (for example, *France Télévisions* launching *France 4* and *Gulli* on the French DTT platform) (Ofcom, 2006). Table 3 presents an overview of the breadth of the terrestrial operator channel portfolios in a range of European countries and Table 4 shows the broad public service broadcaster portfolios in sample countries.

Based on the data presented in these Tables the following section focuses on the programming of digital services launched by public channels in the UK, France and Spain.

Table 3: Channel portfolios of terrestrial operators in sample European countries

Country	**Broadcaster**	**Channel portfolio**
UK	BBC	BBC One, BBC Two, BBC Three, BBC Four, BBC News 24, BBC Parliament, CBeebies, CBBC
	ITV	ITV1, ITV2, ITV3, ITV4, CITV, ITV Play, Men & Motors
	Channel 4	Channel 4, E4, More 4, Film Four
	Five	Five, Five Life, Five US
France	France Télévisions	France 2, France 3, France 4, France 5, Mezzo, Gulli, Euronews, Planete Thalassa, Ma Planete
	TF1	TF1, TF6, LCI, Eurosport, Serie Club, TV Breizh, Odyssee, Historie, TMC, TFOU, Ushiaia, Piwi, Eureka
	M6	M6, W9, Fun TV, Teva, M6 Boutique La Chaine, Paris Premiere, TF6, Music Hits, Music Black, Music Rock
Germany	ZDF	ZDF, ZDFtheaterjabakm ZDFFinfokanal, ZDFdocu kanal, 3Sat, Kinderkanal (with ARD)
	ARD	ARD, Das Erste, Eins Plus, Eins Extra, Eins Festival, Kika, 3Sa, Arte, Phoenix
	Pro7Sat1	Sat 1, ProSieben, Kabal eins, N24, Nine Life
	RTL	RTL, RTL2, Super, NTV, RTL Shop, Traumpatner
Italy	RAI	Pai Uno, Rai Due, Rai Tre, Rai Doc, Rai Utile, Rai News 24, Rai Sport Notixie, Rai Edu
	MediaSet	Canal 5, Boing, Italia 1, Retequattro
Spain	TVE	TVE1, La2, Teledeporte, Canal 24 Horas, Clan TVE, TVE 50 Anos

	Antena 3 Telecinco	Antena 3, Antena.Neox, Antena.Nova Telecinco, Telecinco Estrellas, Telecinco Sport
Sweden	SVT TV4 Kanal 5 TV3	SVT1, SVT2, SVT24, SVT Extra, Bamkalanen, Kinskapskanelen TV4, TV4 Plus, TV4 Film, TV400, TV4 Fakta Kanal 5 TV3, ZTV, TV8, TV6, TV1000, Nature, History, Crime, Explorer
Greece	ERT	CINE+, SPOR+, PRISMA+

Source: Ofcom, 2006; Leon 2006; Author research

Table 4: Public service broadcaster channel portfolios in sample European countries

Country	Operator	Services	Availability	Launch	Description
UK	BBC	BBC One	All homes	1932	Mixed genre
		BBC Two	All homes	1962	Mixed genre
		BBC Three	MC homes	2002	Mixed genre
		BBC Four	MC homes	2001	Arts & culture
		CBBC	MC homes	2001	Older children
		CBeebies	MC homes	2001	Younger children
		BBC News 24	MC homes	1997	News
		BBC Parliament	MC homes	1997	Political coverage
France	France Télévisions	France 1	All homes	1963	Mixed genre
		France 2	All homes	1972	Regional output
		France 4	MC homes	1996	Factual/education
		France 5	MC homes	1994	Arts & Music
		Festival	MC homes	1996	French & EU Fiction
		Mezzo	MC homes	1998	Music service
		Ma Planete	MC homes	2004	Documentary
		Planete Thalassa	MC homes	2004	Marine life
		France Arte	All homes	1992	Franco-German arts
Spain	TVE	TVE1	All homes		Mixed genre
		La2	All homes		Mixed genre
		Canal24 Horas	MC homes	N/A	News service
		Teledeporte	MC homes	N/A	Sports
		Canal Clasico	MC homes	N/A	Classical music
		Clan TVE	MC homes	N/A	Children's
		TVE 50 Anos	MC homes	N/A	TVE archives
Sweden	SVT	SVT1	All homes	1956	Mixed genre
		SVT2	All homes	1969	Mixed genre
		SVT24	MC homes	1999	News and Sport
		Barnkanalen	MC homes	2001	Children's
		Kunskapskanalen	MC homes	2002	Knowledge
Greece	ERT	CINE+	MC homes	2006	Movies
		SPOR+	MC homes	2006	Sport
		PRISMA+	MC homes	2006	Special needs

Source: Ofcom, 2006; Leon 2006; Author research

The UK

The *British Broadcasting Corporation* has invested heavily in the area of digital television technology. Encouraged by the current Labour government[3] which has a vision for an all-digital Britain, the BBC has launched an impressive portfolio of publicly funded niche digital services to ensure a smooth transition to digital broadcasting.[4] More specifically, in 1997 it launched the digital news channel *BBC News 24* and the parliamentary service *BBC Parliament*. In September 2001 it re-launched its digital services, *BBC Knowledge* and *BBC Choice,* as *Cbeebies* (a service for children under 6), *CBBC* (another service for children aged 6-13), and *BBC Four* (aiming at 'anyone interested in culture, arts and ideas'). In 2002 the government approved another digital television service for young adults, dubbed *BBC Three* (see Table 4). These services are funded by the licence fee and are available via digital terrestrial platforms, notably *Freeview*, digital satellite and digital cable. The cost of launching and operating these new digital services reached £115.8 million in 1999, the year that the corporation intensified its digital expansion strategy (7.9 per cent of the total allocation for television) and escalated to £270.5 million in 2002, the year that saw the completion of the above strategy with the launch of *BBC Three* (about 10 per cent of the total allocation for TV).

The corporation has general obligations to promote DTV, notably, to develop the market for consumers who want DTV but do not want to subscribe to pay-TV services. The rationale for launching the *Freeview* platform was to provide an attractive free-to-view package, appealing enough to motivate consumers to invest in the necessary receivers. It is also required to offer affordable free-to-view receivers which consumers can buy with no subscription strings attached. Indeed, in 2006 digital terrestrial television set-top boxes were sold from as little as £30. In addition, the BBC is committed to promoting and marketing its digital services and catering for consumer awareness and information over digital services. According to a 2004 BBC report, the Corporation's investment in its digital channels and promotions for them "has played a strong role in exciting consumer interest in digital, tackling consumer confusion and assuaging fears", and that the continuing consumer enthusiasm for DTV during 2003 "makes achieving UK-wide digital switchover with the Government's timetable an achievable objective" (BBC, 2004, p. 1). However, the report also acknowledges that, despite the high profile digital marketing to date, principally from BSkyB and the BBC's digital campaigns, many viewers remain confused about digital and unwilling or unable to migrate to DTV (ibid, p. 6). Converting these households will require more efforts, particularly towards raising customer awareness and knowledge about the likely benefits of DTV.

Research undertaken by Oliver & Ohlbaum (2004) confirms that the new BBC services have contributed greatly to overall digital take-up, which has increased by 2.1 million households since *BBC 4*, *CBBC* and *Cbeebies* were launched at the beginning of 2002, and 1.1 million since *BBC 3* launched in February 2003. While pay-TV take up has experienced some upheavals (particularly with the collapse of *ITV Digital,* but also with the financial problems of the two main cable operators *NTL* and *Telewest* – now merged) over the period, free-to-view DTV penetration has increased from 0.5 million households to about 3 million. The vast majority of these free-to-view households receive their services through *Freeview,* the BBC-led free-to-air digital terrestrial platform that was launched in late 2002, while a minority (about 200,000) is ex-BSkyB subscribers who continue to use their decoders for viewing channels.

The BBC services have been the lead driver of *Freeview* penetration. The extra BBC services available through *Freeview* and digital satellite and cable, have played an important part in the take-up of free-to-air digital reception and the rapid adoption of *Freeview*. The BBC services make up over one quarter of the extra channels on *Freeview* and the presence of the new BBC digital services are an important reason for consumer adoption of free-to-air digital services (ibid, p. 48). This is reinforced by the fact that the extra BBC services gain about 5.5 per cent of *Freeview* household viewing. However, the overall share of the new BBC services in all multi-channel homes was lower at 2.7 per cent.

Perhaps more importantly, evidence suggests that *Freeview* penetration has been largely additional to, rather than a substitute for, digital pay TV take-up (ibid, p. 17). Those considering getting subscription television services continued to do so, as evidenced by the rise of pay-TV (both cable and satellite) following the launch of *Freeview*, albeit at a slower rate than before. Without doubt, the healthy growth of *Freeview* reinforced competition between different platforms and established free-to-air digital reception as a viable alternative to pay-TV services. This may have reduced the share and reach of other digital platforms more rapidly than otherwise might have been the case. However, the relatively slow growth rate of subscription services may also be explained by the closure of the high profile digital terrestrial pay service *ITV Digital* in April 2002, as well as the stagnation and financial difficulties that the two main cable operators *NTL* and *Telewest* were facing at the time. It may also be explained by the fact that pay-TV has probably reached a saturation point as many of those willing to buy subscription services (most likely football fans) have already done so.

Analysis of the demographics of *Freeview* subscribers reinforces the notion that free-to-air digital customers are largely additional to pay-TV subscribers. A Quest survey in March 2003 gave demographic data on the types of households that were using each platform. It found that *Freeview* had a different profile to other platforms. In particular, the findings suggest that many of *Freeview's* customers are affluent, older people who have no interest in purchasing satellite or cable pay-TV services. Many of *Freeview* homes comprise of an age group of over 45, compared to satellite subscription television take up which is heavily skewed to the under 45s. The fact that the free-to-air package includes far less available channels made no difference to this group who have no interest in multi-channel TV (Quest Survey, 2003).

In sum, *Freeview* appeals to those who reject satellite and cable pay-TV services and to whom, as a BBC report states (BBC, 2004, p.10), "a terrestrial free-to-air service is a welcome bonus". It follows that the broad platform impact of BBC services on different types of commercial channels and networks was modest. The evidence presented here suggests that the growth of the new BBC services has not been achieved at the expense of pay-TV penetration. On the contrary, the new BBC services have probably made a small contribution to the take-up of digital pay-TV platforms by enhancing the overall offer.

They may have also contributed to the financial viability of some new thematic channels, by providing an alternative route to homes (i.e. free-to-view digital distribution in addition to carriage in the BSkyB or cable packages). Overall, the evidence suggests that "the new BBC services have made a significant contribution to bringing forward the likely idea of analogue switch-off and the release of large amounts of spectrum" (Oliver & Ohlbaum, 2004, p. 9).

Critic on BBC's digital services – is the investment justifiable?

A criticism often put forward regarding the new BBC services is that only a minority of viewers enjoys the full benefits of all BBC digital channels, whereas everybody pays the licence fee. As already noted, at the end of 2003 the four new BBC services (*BBC Three, BBC Four, CBBC*, *CBeebies*) had a share of about 2.7 per cent of all day multi-channel viewing. There is therefore a widespread perception that the BBC is spending disproportionate amounts of money on channels to which few people have access. In fact, in 2003 the BBC spent £271 million on its digital channels, which represented about 9 per cent of its total budget of £2.5 billion. Is this investment justified?

The answer is largely positive. Regardless of audience share, a distinction should perhaps be drawn between services offered by public channels, required by their statute to address a wide range of public interest criteria, and those provided by private pay television consortia, driven by audience ratings. The BBC offerings entail more innovative and distinctive programmes than those supplied by rivals. At the risk of simplifying what is a complex issue, a number of key things emerge from comparing the programming offered by commercial pay broadcasters with that of the BBC. First, the publicly-funded BBC has invested more on public service programming genres, such as news in peak, regional news, current affairs and other factual programming, original UK-made drama and comedy, children's shows, science, arts, religion and other minority programming. Second, the BBC provides a balanced TV diet of trusted and familiar programming with innovative, quality, original and high-risk output.

The assessment carried out by Oliver & Ohlbaum demonstrates the BBC's strong commitment to investing on original high quality, national and regional UK programming on its new DTV channels, which reflects and strengthens cultural identity. The study shows that each BBC television service is offering something distinctive to UK multi-channel audiences when compared with other thematic channels – and often to a distinct demographic. For example, the absence of advertising and imported animation on the BBC children's services is likely to have been attractive to families with children. This is evidenced by the relatively high levels of consumption of the *CBBC* and *Cbeebies* children channels, which had the highest absolute impact. The study goes on to show that *Cbeebies* utilises far less animation and shows more educational programming than its nearest rivals. *CBBC's* schedule has far more UK originated factual and current affairs programming than any near rival, and also more educational programming than its rivals except *Discovery Kids* whose educational output though is mostly non-UK originated.

In contrast to the channels addressed to children, the study found that the proportionate impact on digital adoption from *BBC 3* was relatively low as digital penetration in 2003 was already high among the 25 to 34 year old age group. Still, in terms of content, *BBC 3* has greater amounts of news, current affairs and factual programming than *E4, Sky One, ITV 2* and *Paramount*, and a greater variety of programme types and genres across the whole schedule. The vast majority of its schedule is made up of UK originated material. Finally, according to the Oliver & Ohlbaum analysis, *BBC 4* has a far greater range of programme genres and types than any factual, arts or performance focused thematic channel. In sum, the BBC digital channels content is qualitatively different to that offered by private pay television operators.

This is not to say that pay television consortia cannot provide programmes that meet public service purposes. In addition to the *Discovery Kids* service mentioned above, other channels like *Sky News, Arts World* and the *History Channel* deliver value through stimulating learning and engagement in society. However, these examples are the exemption rather than the rule. Even in today's multi-channel digital world, there is under provision of quality, original, innovative and hence high-risk programming, as pay operators often adopt a risk-averse approach in reducing innovation and marginalizing the specialist content that audiences tend to value less. This is evidenced by the content of the new digital services *Five Life* and *Five US* launched in late 2006 by commercial terrestrial broadcaster *Five* (see Table 3). *Five US* features a mix of America drama, films, documentaries, sport and comedy and *Five Life* broadcasts entertainment shows and drama series such as the Australian drama *Love My Way*. Viewers can also see backstage gossiping and special weekly omnibus of the Australian series *Home and Away*.

Returning to the BBC offering, in 2006 the corporation announced a change of its strategy with regard as to how content is created and distributed in order to reflect the changing audience expectations and on-demand delivery. Director General (DG) Mark Thompson outlined this need for a change in thinking as follows: the BBC should aim to deliver more public value by making content available in many media and devices, either at home or portable; the BBC should form a new relationship with its audience by starting viewing them as partners and participants. New cross-platform content strategies have been put forward for journalism, sport, music, children's and teens, entertainment, drama, knowledge-building, comedy and music, which allow for more audience participation and different forms of access. The DG emphasized the informative function, which would focus on continuous services across different platforms, the education function, which would enhanced when the BBC opens up its archive, and the entertainment function, with the BBC continuing to invest in "distinctive British entertainment" (Thompson, 2006).

It can be seen that the BBC new digital services, alongside some of the niche services of other commercial terrestrial broadcasters, have accelerated DTV take-up and added consumer value. The new digital offerings by the public broadcaster have enhanced diversity in key areas such as children's and education and learning and they have stimulated creativity and cultural excellence. Backed by the licence fee for now, the BBC does not have to concern itself with how users are going to pay for new services, and it remains unaffected by the downturn in advertising revenues, placing it in a better position to take risks. However, most of the programming of the new services of terrestrial broadcasters pays strong emphasis on domestic content, with the notable exception of *E4*, which is operated by Channel 4 and shows primarily American films, and *Five US*, which was launched by Five. Pan-European programming is largely missing from the offerings.

France

In France public broadcasters are increasingly dominated by commercial concerns and managed as private corporations. Their programming over the years tends to resemble those of their commercial counterparts, with the notable exception of *France 5* and *Arte* (EUMAP, 2005). Indeed, it is mainly *France 5* – which shares frequencies with the high-brow Franco-German joint venture channel *Arte*, which acts as a guardian of programme quality and diversity, whereas the programming of *France 2* and *France 3* increasingly emulates that of private rivals. A pan-European study by Leon (2004) found that there are still some differences between French public and commercial broadcasters in the area of cultural programming. Using a wide concept of culture, the study showed that *France 2* and *France 3* had more cultural output than their competitors *TF-1* and *M6*, but in prime-time the public channels' programming showed a strong orientation towards entertainment, and information to a lesser extent.

The difficulty faced by *France Télévisions* to adjust to a continually changing television landscape and employ a clear and stable strategy is also reflected in its digital initiatives as well as thematic portfolio. DTT in the country was only launched in March 2005, two years later than originally scheduled, owing to political upheavals, interminable conflicts on standards, and eternal differences between *France Télévisions, TF-1* and *Canal Plus.* The DTT service, in which the public broadcaster participates, is entitled *TNT* and the initial offering consisted of 14 free-to-air channels while in late 2005 two bouquets of pay-TV were added. Take-up of services exceeded expectations and by the end of 2005 1.3 million households were equipped to receive DTT. However, apart from *France 5* and *France 4* the other services do not make a great impact as they attract negligible audiences. *Historie*, the thematic service broadcasting documentaries with a good audience share, was set up in 1997 but sold to *TF-1 Group* in 2002 due to the public broadcaster's financial difficulties. The launch of the thematic services would have been more diverse if *France Télévisions* had adapted the guiding principles identified by Philippe Chazal in a 1996 study on behalf of the public broadcaster. In more particular, the author argued that the following should be adhered to by the public sector in setting up thematic channels:

- The content of the thematic channels should consist of *France Télévisions*' extensive archive
- Thematic channels should focus on specialised topics that would meet the preferences of the twenty-first century viewer

- Emphasis should be placed on showing programmes which, by definition, are not covered by the private sector (education, training, culture).

Most of Chazal's recommendations were inspired by Britain's *BBC*, but were not adopted by the then president of *France Télévisions*, Beauchamps, who believed that by launching niche services public channels could contribute to further fragmentation of society. Today, the digital offering of the French public broadcaster is quite diverse and covers different genres. *France Télévisions's* new services consist mostly of documentaries (*Ma Planete*, *Planete Thalassa*), music and arts (*Mezzo*, *France 5*), and factual/education (*France 4*). French and European fiction is depicted in the output of *Festival*, whereas *France Arte* shows Franco-German arts. But the digital offerings in France are not advanced as they are in the UK as the free-to-view digital services in the country only became available in 2005. Contrary to its British counterpart, whose digital services pioneered in the continent, *France Télévisions's* DTT have not made an impact. Despite the rapid take-up of DTT services their overall contribution to digital switchover is still minimal compared with other established platforms such as pay satellite and cable.

Leading commercial network *TF-1* controls the news channel *La Chaine Info (LCI)*, the documentary channel *Odyssee*, *TF6*, *Serie Club*, the regional channel *TV Breizh* and Eurosport, which broadcasts across Europe. It is also the majority shareholder in the pay digital satellite platform *TPS* with a 66 per cent stake (*M6* owns the balance). *M6*, the second most popular commercial channel, targets young audiences as well as housewives under the age of 50. In 1998 *M6* set up the thematic services *M6 Musique* and *Club Teleachat*. Table 3 shows that *TF-1* and *M6's* thematic portfolios are dominated by music hits, films and gossiping.

However, the digital offerings of some of the French terrestrial broadcasters take a European dimension, in contrast to the UK. In more particular, the public broadcaster is an owner (together with 19 more public channels) of *Euronews*, the Europe-wide satellite channel which broadcasts international news, and leading commercial operator *TF-1* makes available the pan-European sports service *Eurosport* and *Festival*. This is not surprising given France's concern about American cultural imperialism and advocacy of European culture and identity. The French are strong advocates of the TWF Directive and the imposition of quotas to prevent US material dominating Europe. They claim that audiovisual works are the expression of an identity and audiovisual policy should therefore favour the emergence of a European conscience and a greater cohesion at the level of the continent.

Spain

In Spain the collapse of digital terrestrial pay-TV platform *Quiero TV* in 2002 retarded the process of implementation of free-to-view services. Following a lengthy period of negotiations between the government and main TV companies for the allocation of frequencies, finally in November 2005 eighteen FTA digital terrestrial channels began to broadcast. As Table 4 shows, public television broadcaster TVE launched five channels:

TVE1 and La2 (the main channels which broadcast in analogue frequency); the 24-hour news service *Canal 24 Horas;* the 24-hour sports channel *Teledeporte;* the children's channel *Clan TVE* (which broadcasts from 7.00 am to 9.00 pm); and *TVE 50 Anos* (it shares the same frequency as *Clan* TVE and broadcasts programmes from the TVE archives. Commercial broadcaster *Antena 3* broadcasts three channels: Antena 3 (the same analogue channel); Antena.Neox (children and youth); and Antena.Nova (a family channel on lifestyle and entertainment). The other main commercial channel *Telecinco* also makes available its analogue service *Telecinco*, alongside *Telecinco Estrellas* (fiction) and *Telecinco Sport* (sports) (see Table 3). Furthermore, *Sogecable*, which controls the only digital satellite platform *Digital +* (the outcome of the 2003 merger of the formerly competing consortia *Canal Satelite Digital* and *Via Digital*), has launched the following services: *Quatro* (a generalist channel); *CNN+* (all news joint venture between *CNN* and *Sogecable*); and *40 Latino* (Latin music).

According to Leon (2006) the new digital terrestrial services have not resulted in more programming diversity and/or novelty for the Spaniards, for they only managed to attract negligible audiences and they offer content similar to that of the analogue services. The current DTT offering consists of channels previously available either on analogue free-to-air television (this is particularly the case with the new generalist channels) or on digital cable or satellite. These services cannot therefore be perceived as innovative, by means of developing new niche channels, specifically designed for the DTT platform. Programming diversity is enhanced by offering programming genres that are not adequately supplied by the analogue terrestrial channels and not by recycling or repeating material. But this is not the case in Spain as it is evidenced by comparing the top ranked programmes of September 2003 with those of September 2006. The comparison demonstrates that in both years the leading genres were drama series and sports events, whereas reality shows only appear in 2003. Leon (2006) argued that this can be interpreted as a signal of tiredness of the audience with the reality shows, rather than an impact of the new services. Among the top programming genres appearing in both 2003 and 2006 are domestic and European league football matches, and American series such as *CSI Miami*.

It is apparent that the creation of attractive content is at the moment the weak side of the Spanish DTT offer, for it has not yet been a priority. Instead, emphasis is given to the pay-TV market and the behaviour of the main players. According to Leon (2006) one of the reasons that could explain this deficit is that digitalisation in the country has so far been more an effort on behalf of the government and the main operators, rather than a priority for the Spanish people. The Spaniards are generally not involved in the digitalisation process as there are limited public forums and initiatives taken on behalf of the government on this front. Meanwhile the public TV broadcaster TVE has not really managed to adapt to the digital environment smoothly. It largely continues to behave as an analogue channel: most of its popular programmes are not available on digital format; its digital and online services do not provide a public forum where viewers can engage in a dialogue and exchange information and ideas.

Has DTV contributed to a European identity?

Modern electronic devices and the proliferation of new networks seem the ideal instruments to promote an imagined European community and identity. Yet despite the process of globalisation, the rapid development of the Internet and the proliferation of DTV channels across Europe, the media remain nationally entrenched and oriented towards national output. Broadcasting organisations (alongside public schools, the university and the Church) reflect deeply rooted national identities[5] which have a unique historic essence. Much European TV material reflects and addresses the tastes, interests, events, cultural preferences and languages of viewers in individual countries. As can be seen from the channels' thematic portfolios outlined above, very few new services (i.e. *Euronews, Eurosport*, *Eureka* and *Festival*) deal with pan-European programming that would disseminate political or cultural information at a European level and would therefore encourage participation and exchange of ideas among European citizens. Also the Franco-German *Arte* offers arts output appealing to two large EU territories. However, what is missing from the offerings in the new digital environment is the existence of content which could contribute to a unitary and universal form of addressing all Europeans. It is specifically news and cultural material, rather than feature films and television fiction that can enable EU citizens to share information, participate in trans-national and borderless wide-reaching forums, and engage in a public debate and exchange views. The media, especially television, provide the most important link between politics and the citizens (Entman and Bennett (2001). The focus on factual programming is limited and it is only available in the digital output of public broadcasters, with services such as *BBC News 24* (BBC), *Canal 24 Horas* (TVE) and *France 4* (France Télévisions), but it is not realised in the content supply of the commercial terrestrial broadcasters ITV, Channel 4 and Five in the UK, or those of Antena 3 and Telecinco in Spain shown in Table 3.

The broad absence of factual services with a clear pan-European content can be attributed to the national character of the television market, which has not changed much in this regard even after the introduction of digital TV services. The prevalence of popular American output in European digital TV networks is another factor inhibiting the dissemination of pan-European programming. US audiovisual material, particularly TV formats and Hollywood movies have succeeded in penetrating the European continent for a number of reasons: the export advantages attributed to the English language; the highly effective marketing and publicity; the dynamism of the American industry and the quality of much of its product. In Europe, on the other hand, cultural and linguistic diversity has resulted in demand for domestic, regional or local material which remains a strong feature of the content market in the digital era, alongside demand for certain 'global' products, such as blockbusters. The thematic services of most of the national terrestrial broadcasters are dominated to varying degrees by national and/or American material, while non-national European programming generally comes in a distant third place (see Table 3).

The inadequate coverage of pan-European issues by DTV thematic channels reflects the absence of a unified, common media agenda that interests citizens throughout the Union and signals the lack of a united European public forum. This contradicts with the idea of a common European TV policy launched by the 1989 TWF Directive, aiming at creating a single market for TV broadcasts across Europe and a European public space that would promote European identity and vision. The wording of Article 4 of the Directive that 'Member States must ensure where practicable and by appropriate means that broadcasters reserve a majority proportion of their transmission time for European works' does not apply to new services. Channel abundance, brought about by DTV has led to even greater market fragmentation and audience segmentation, thereby making it more difficult to form a common European identity. It seems that it will be difficult to achieve the aims of the TWF Directive to create a single market for European TV broadcasts, for the free movement of programming within the internal market has resulted in the dominance of US products. The efficiency of other policy initiatives, such as the MEDIA programmes which provide a series of support measures for the European audiovisual production, is also questionable.

Conclusion

Television is a cornerstone of modern democracy and cultural diversity, enhances our identity and capacity to live together and therefore contributes to social cohesion. The dominant audiovisual medium plays a major role in forming our cultural identity by determining not only what we see of the world, but also how we see it. Universally available terrestrial channels, particularly public bodies, have hitherto ensured high levels of investment in quality output, often taking risks with innovative programming and new forms of creativity. DTV offers a unique chance for the channels to continue this trend, carry programming from elsewhere in Europe and become active creators of both an own and a European culture with the launch of numerous new services. New channels with new content appealing to a variety of tastes and interests – for example, services on education, art, current affairs, music, cinema, science and history - are necessary for the enhancement of our identity as well as the promotion of content diversity. Re-cycling material from old programmes certainly wastes the opportunity offered by the new services to develop the nation and/or the continent's creativity via new and original content production.

This study of the content of the new digital services of established terrestrial broadcasters in sample EU countries had two primary goals. One was to establish whether the proliferation of digital services can enhance programming diversity. Diversity of TV supply can be defined as the availability of a whole range of content that can satisfy all viewers, including the minorities. The growing number of channels does not necessarily result in diversity of media or content. Yet, with the advent of digital broadcasting, media diversity remains a key policy objective that must be respected in the interests of democracy and societies' full cultural development (Council of Europe, 2002, p. 19). Another important aspect of diversity is granting consumer-citizens access to media services of their own choice on fair terms. From this point of view, the establishment of DTT is important, for it makes digital television accessible to a large part of the population, minimising the number of households which cannot access TV services when switchover takes place. The UK is the world leader in establishing the *Freeview* DTT free-to-air platform in 2002 (that succeeded the bankrupt pay DTT platform *On Digital*, later renamed *ITV Digital*), whereas France and Spain are lagging behind. Public broadcasters generally have an important presence on the DTT free platform as a result of "must-carry" rules adopted by governments, but with the exception of the BBC, the rest of the public channels are still trying to adapt to their new role are leaders of digital television services and primary contributors to switchover.

Turning to the descriptive findings, with the exception of the BBC services and France Télévisions output to a lesser extent, the content of the new digital channels does not comfortably sit with the diversity ideal. The BBC's original domestic content and provision of high quality services can be attributed to the strong public service ethos, the wide availability of free-to-air digital services, and the guaranteed funding. In Spain, on the other hand, the lack of a clear digital strategy by the main terrestrial broadcasters coupled with the financial difficulties of the public broadcaster TVE had an adverse effect on programming diversity and consumer choice. The traditional tenets of public service media such as diversity, breadth of content, the representation of a wide range of opinions and universal access is more an illusion then reality in the digital services provided by the main Spanish channels. However, taken as a whole the digital services of the public broadcasters contribute more to the programming diversity compared with the offerings of the private terrestrial outlets. This is evidenced by the BBC new children's channels as well as the news services which convey everyday national and regional politics to the UK viewers.

The second goal of the study was to investigate the potential influence of the new digital channels to the establishment of a "European public sphere". In terms of covering EU-related issues the findings suggest that the new digital services of all EU countries under scrutiny lack a clear commitment to European content. This verifies existing content analyses of the TV coverage of the EU (Norris, 2000; Kevin, 2003; Peter and de Vreese, 2004). European affairs, culture and politics are marginally represented in national digital networks, whereas the amount and prominence of American programming genres is more visible. The introduction of digital broadcasting has resulted in an explosion in demand for audiovisual content, but as Collins (2003) put it, "without a commensurate growth in broadcasting revenues". This has increased the proportion of foreign, often American, programmes on European screens. The French exception in terms of EU coverage is to some extent due to their strong resistance to the American cultural domination and the commitment to promoting European culture. The negligible coverage of European affairs reflects the absence of a communal and shared European culture and citizenship. It could be argued that Europe has made its presence felt only on an economic and monetary level.

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[1] EC's support for DTV is implemented through several instruments. For example, eEurope acknowledges and encourages the role of DTV in a multi-platform approach to the Information Society. The policy is expected to provide widespread access to advanced communication and information services for all EU citizens. eEurope required Member States to publish their switchover plans by the end of 2003. The new regulatory framework for electronic communications also promotes the roll-out of DTV networks.

[2] See http://europa.eu.int/information_society/eeurope/2005/index_en.htm

[3] The government has recognised the central role which the BBC had to play in convincing people to switch to digital. The February 2000 funding settlement was intended to support the BBC in this role: allowing a balance to be struck between maintaining the quality of core services and investing adequately in new ones. More recently, in 2004, the Department of Culture, Media and Sport and the Department of Trade and Industry welcomed the BBC's commitment to "building digital Britain" and said that the BBC, alongside with commercial public service broadcasters would have to play the "lead role" in achieving digital switchover (DCMS and DTI, 2004).

[5] Price (1995, p. 40) defined national identity as the "collection of myths, ideas and narratives used by a dominant group or coalition to maintain power in a society". He argued that definitions of national identity provide the community with a sense of who belongs and who is differentiated, what is the norm and who is the "other" (ibid, p. 42).