HDTV in Europe

Executive summary

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Overview

This report investigates several key aspects of the high definition television business in Europe and is meant to supplement ongoing work of EBU Technical, which is at the forefront of technical analysis of HDTV. The report covers the HD display market in Europe which is at this point advancing at a more rapid pace than the availability of content. The most advanced European markets in the UK and France are explored in detail as well as Sweden which may be an indicator of how some smaller markets will develop. In addition, the report provides an in-depth analysis of how HDTV can roll-out on the terrestrial platform.

2008 was an important year for HDTV as key positive drivers kicked in and set the stage for continued development of the technology. HDTV is advancing on all fronts from production and technology to distribution and consumer equipment. Although the UK and France are leading other markets are not far behind.

- Production and content
  - Broadcasters increase investment in HD production
  - Olympics and other premium sports drive consumer interest
  - Blu-ray titles/sales expand
- Technology
  - MPEG-4 receivers increasingly available and affordable
  - LCD and PDP displays improved; OLED limited introduction
  - National analogue-shut-off progress in many markets
  - High definition disc format battle settled
- Distribution
  - Satellite HD channels show dramatic growth
  - Cable operators increase HD offers
  - Terrestrial HD launched in a few markets
- Consumption
  - Display prices continue to fall, spurring demand (for larger sizes also)
  - Flat panel sales exceed CRT (2007)
  - Consumer home HD equipment available
  - Games, d-cinema, Blu-ray increase consumer expectations

High definition television is happening. There are few who now doubt that HD will inevitably replace standard definition viewing just as colour television swept away black & white decades ago. HDTV represents a confluence of interests among all the major actors in the audio-visual value chain as each sub-sector of the industry moves towards HD in its own way.

- More and more broadcast content is being produced in HD and it is the de facto standard for global programme trade markets
- Satellite operators see HDTV as an opportunity to sell more capacity
- Network operators are relying on HD transmission to replace their analogue business after ASO
- Maturing pay TV operators (cable and satellite) need to increase revenue per unit as subscriber growth slows
- Broadcasters can better manage fragmentation effects and deliver a premium product for their core services
- Manufacturers and retailers may have the most to gain as they introduce new products with fatter margins.
- Blue-ray high definition discs, games, d-cinema have become robust business and are raising quality expectations

From content creators to equipment manufacturers commercial interests are coalescing around the growing popularity of HDTV and supporting its development. And on the demand side HDTV is acknowledged universally as a compelling consumer proposition limited only by availability, complexity, and price.

Meanwhile, the global economic slowdown will certainly hamper growth of HDTV. Consumers will be less willing to invest in HD equipment despite declining prices and many content producers, especially commercial broadcasters, will be reluctant to make new outlays in production and transmission with no immediate financial gain in the short term. The next six to eighteen months may be viewed as an interruption rather than an indication of waning demand for HD services.

In terms of channel provision, there are five types of operators that are currently developing HDTV offers in Europe: pay television operators through satellite (like Sky, Canal+); international players (Discovery, VOOM, HBO); pay television operators through cable and IPTV; commercial broadcasters (TF1); and Public Broadcasters (BBC, SVT).

The number of individual HD channels in Europe in mid 2008 was close to eighty and nearing one hundred by the end of the year.

HD channels in Europe (Mid 2008)

HDTV channels by country and launch year						
	2004	**2005**	**2006**	**2007**	**2008**	**Total**
Belgium				5	3	8
Denmark					2	2
France			4	7		11
Germany		2	3			5
Italy			4	1		5
Netherlands			2	3		5
Spain				1	1	2
Sweden			1	2		3
UK			10	1		11
pan-Nordic		1	2	2	2	7
Other (& pan-European)	1	1	6	10	1	19
Total	1	4	32	32	9	78
Countries where only international/overspill channels are available (e.g. Ireland, Luxembourg) are not shown in the table.						

Source: EBU based on ScreenDigest

Most Public Service broadcasters have or will launch HD services with notable actual or impending launches by Arte, VRT, NPO, ORF and TVP.

Most HD channels are part of a pay platform and reflecting this, the top genres are sports, movies, and documentaries.

Thematic HD channels in Europe

HDTV channels by genre and launch year						
	2004	**2005**	**2006**	**2007**	**2008**	**Total**
Children				1		1
Documentary			11	6		17
Entertainment		1	4	2	1	8
HD specialist[1]	1	1		2	1	5
Movies			6	5	2	13
Music				1	1	2
National[2]		2	3	8		13
Premium[3]			2	2	2	6
Sports			6	5	2	13
Total	1	4	32	32	9	78
Notes: [1] HD Specialist: e.g. HD1 [2] "National" channels: nationwide free-to-air general interest channels (e.g. BBC HD, TF1 HD) [3] Premium as a genre: "Canal+" type channels offering mix of premium movies and sports						

Source: EBU based on ScreenDigest

For policy makers, HDTV may be developing in an non-optimal way in two respects.

First, non-European content is growing and may dominate most HD viewing in the future. As HD channels proliferate, the demand for HD programming increases to fill schedules and platform bouquets. Non-European based players like Voom (Rainbow Media), Discovery, National Geographic, HBO (Time Warner), etc. offer ready-made HD productions as well as entire channels that offer a convenient way for broadcasters and platform operators to fulfill their HD product needs. Discovery has distributed its documentary channels throughout Europe against little European competition in this genre and HBO has expanded aggressively in Eastern Europe.

Second, there is a risk that HDTV will remain predominantly a premium pay service for a privileged part of the population. The pace at which HD channels move to free satellite and terrestrial transmission will be a critical determinant of not only how quickly HDTV develops, but also to what extent average viewers will have access to the new technology.

Public Service Broadcasters (PSBs) will be important in tackling both issues. Adequately-funded PSBs continue to invest in national HD content and are making their best efforts to make this content available on a free-to-air basis and ensuring the widest possible availability to the public. Meanwhile, some commercial broadcasters, faced with financial pressures at this particular point in time, are balking at the investment required without immediate gain. Many of them have scaled back HDTV projects.

Display market

The television set industry has been in good health in Europe in recent years driven by the switch to flat panel technologies. However, the product is re-entering a period of relative maturity as the novelty wears off and flat panel becomes normal. This is propelling consolidation of television manufacturers and component suppliers. Margins are falling in TV sets and price wars have challenged equipment makers. Television makers are now finding that they cannot revalue the market by selling larger screens and so stronger focus will have to be placed on understanding consumers better.

The current economic difficulties will dampen the market somewhat, but consumers in Europe see a TV set as an essential part of modern life. While set pricing and profits may fall, the underlying market is expected to remain fairly resilient.

The growth of HD broadcasting and downloaded programming offers significant opportunities. However, business models may have to change and embrace better understanding of delivery of programming, with possibilities of revenue sharing.

HDTV on the terrestrial platform

Before launching HD/DTT services, broadcasters will need to consider their minimum viewer threshold necessary to sustain the service. It will be much easier to attract viewers where both the penetration of HD-ready displays and the number of terrestrial households is high.

Broadcasters must also consider the cost of launching HD/DTT services. It can be expected that transmission costs will increase as more capacity is used, especially if it is necessary to simulcast services in both standard-definition and high-definition. Yet as compression technologies improve, transmission costs may decrease over time.

Production costs for HD/DTT services should not be an issue for broadcasters as many have already begun producing HD content. The majority of content will be produced in HD in a few years time. Delivery of this content to viewers will initially use the cable and satellite platforms.

However, public service broadcasters may be required to make their HD content available across all platforms, including DTT, especially if it is the only free television delivery platform.

As HD services becoming the "norm" for television services, it will be essential for the terrestrial platform to make such services available in order to ensure its competiveness with other television delivery platforms and future viability. In many countries it is the only free-to-air television platform, making it the only manner for viewers to access such services free-of-charge. Without free HD services, a two-tier system could develop where only those viewers willing and able to pay can receive HD content and other viewers must content themselves with a perceived "substandard" television service. This could also pose problems for public service broadcasters since funding derived from the television license fee payments of all viewers will be used to produce HD content.

It is possible that free-to-air HD services will be delivered by satellite in some countries. However, such an approach does not diminish the need for the development of HD services on the DTT platform.

First, the availability of HD services on the terrestrial platform will ensure a continued competition between the different television delivery platforms.

Second, it will ensure that broadcasters, especially public service broadcasters, have a means of directly reaching their viewers without needing to rely upon a satellite service operator. In some countries, satellite operators offer free services although viewers need to purchase proprietary set-top boxes including access cards and it is not clear how long this access will remain free of charge.

Finally, it is not always possible for viewers to access satellite services. For example, planning rules may not permit the installation of satellite antennas or viewers may be located outside of satellite viewing areas (i.e. in satellite shadow areas).

HDTV in the United Kingdom

Main findings

- Digital terrestrial TV (DTT) is the most prevalent platform in the UK, available in over 50% of households, followed by digital satellite TV (DST) in 36% and digital cable TV (DCT) in 13% of UK TV homes, with growing overlap between DTT and the other platforms, assisted by the strong sales of IDTV sets capable of being connected to more than one platform. The UK is on track for completing analogue switch off and digital switchover (DSO) on schedule in 2012
- The potential for HD reception is rapidly increasing due to the burgeoning sales of HD-Ready TV sets, estimated at over 13 million in Q3 2009
- The UK TV landscape is polarized between the pay-TV sector led by Sky and the free-to-air (FTA) sector represented by the PSBs. Following the completion of DSO, the

penetration of subscription pay-TV and free-TV is expected to stabilize at around 50/50 split of the TV household population

- Sky is the leading player on HD, viewing the increased picture quality as a key differentiator in relation to FTA services, especially DTT service Freeview. Sky offers 28 HD channels (£10/month) and is taken by over half a million UK TV homes. PSBs are intent upon closing the gap on the DTT platform
- Cable operator Virgin Media offers just one HD linear channel (BBC) to the 15% of UK homes that it connects, and its capacity constraint for SD and HD linear channels won't be lifted until its analogue TV service is switched off in 2010. TV over DSL operator Tiscali TV, taken by only 50,000 homes, offers no HD channels. On demand HD content is available to the 340,000 homes subscribing to BT Vision, as well as to homes supplied with VOD by Tiscali TV and Virgin Media
- The market for FTA HD services has only just started to materialize with the launch of the BBC-ITV Freesat venture in May 2008. It offers FTA HD channels by the BBC and ITV. The main expansion over the next year will most probably take the form of expanded transmission hours of the two existing channels rather than more channels due to a combination of satellite capacity restrictions and cost issues
- Capacity, or lack of capacity, is holding back HD growth. Ofcom's HD on DTT plan involves making more efficient use of the existing DTT spectrum: freeing up of one out of the six DTT multiplexes (Mux B) by moving all the services on that multiplex on to other multiplexes without any loss in quality or coverage; enlarging the effective channel capacity on the freed up Mux by adopting the more advanced MPEG-4 compression and DVB-T2 transmission standards
- On DTT, the first HD channels (one each for the BBC, ITV and Channel 4/S4C) are not scheduled to appear until the commencement of DSO in the Granada region in autumn 2009. In this respect the opportunity to broadcast in HD in the UK is largely tied to the DSO process
- The industry is optimistic that coverage can be extended more rapidly with the assistance of interleaved spectrum, and is also relying on technological change to reduce capacity constraints. Early trials of the new DVB-T2 standard open up the possibility of four HD channels on DTT some time before DSO, with the promise of a fifth at the completion of DSO in 2012.

HDTV in France

Main findings

- The main commercial and pay channels launched high definition versions on satellite in 2006 with very limited actual HD content
- The three most-watched national channels, plus cultural service Arte, launched HD versions on digital terrestrial TV (DTT) on 30th October 2008
- The DTT roll out will stimulate awareness of, and demand for other HDTV platforms such as satellite, cable and nascent FTTH, together with sales and marketing of HDTV sets
- Total end-2008 addressable HD market is estimated at 1.1 million homes, due to rise to over 6 million in 2009
- MPEG-4 tuners are mandatory in HDTV sets and satellite, cable and DSL/fibre providers are including HD channels and HD-capable reception equipment in their basic offers
- The DTT HD licensees are increasing their prime time HD content to 30-50% in 2009
- Most of the production of original fiction is being shifted from standard to high definition
- At analogue switch-off in November 2011, ‘digital dividend’ frequencies should allow for simulcast in HD of most channels, thus facilitating the later switch-off of SD broadcasts
- The CSA has reserved three HDTV channels per multiplex though error protection has been relaxed

HDTV in Sweden

Main findings

- High definition versions of existing premium Swedish channels launched on satellite and cable from 2006
- Public broadcaster TV4 launched an HD service in 2006, and gained limited terrestrial coverage from May 2007 – it is still the only HD channel available on DTT
- The October 2007 terrestrial analogue switch-off allows a reshuffle of frequencies due to lead to launch of a sixth national multiplex in 2009
- But the new multiplex will carry only standard definition channels
- In 2009 plans for a VHF multiplex could be issued, and it could be devoted to HD simulcast of existing SD DTT channels
- Regulator RTVV mandated terrestrial operators to start MPEG-4 migration by 2014

- There is no clear path for a migration from MPEG-2 to MPEG-4, even less so from SD to HD
- However, the large majority of terrestrial TV homes subscribe to the Boxer platform, which could eventually subsidize migration
- HD television set penetration may pass the 50% household threshold in 2008
- In the coming years demand for HD channels is likely to sustain the growth of satellite and cable television platforms already distributing a total of 13 HD services

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