

Transition to DTT in Western Europe

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DVB-T in Europe

The main phases of development in Europe

- ❑ 1998 to 2002 - emergence and failure of pure pay TV platforms; delays and aborted launch plans; limited, then stagnant growth.
- ❑ 2002 to 2005 - introduction and success of primarily free-to-air platforms; important role of public broadcasters; emergence of funding controversies; high growth.
- ❑ 2005 to 2008 - last western European countries launch; mixed models develop; new technology adopted; funding controversies resolved; growth continues but slows
- ❑ 2008 to 2010 - mature platforms stabilize; HDTV trialed; eastern Europe launches; the approach to analogue switch-off (ASO) refined; several countries achieve ASO; growth dependent on stimulus
- ❑ 2010 to 2015 - all countries converted; HDTV becomes widespread; mobile TV and interactive applications grow

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DTT Timetable In Europe

	Legislation	Soft launch	Full launch	Switch-off date
Fully Launched Platforms				
UK	July 1996	September 1998	November 1998	2012
Sweden	May 1997	April 1999	Sept. 1999	2008
Spain	October 1998	May 2000	May 2000	2010
Finland	May 1996	August 2001	October 2002	2007
Netherlands	1999	April 2003	April 2003	2007
Germany	Spring 2002	November 2002	May 2004	2010
Italy	November 2001	December 2003	January 2004	2008
France	August 2000	March 2005	December 2005	2010
Limited Launches				
Switzerland	November 2002	2005	2006	2009
Belgium	2002	2004	2006	2010
Not yet launched				
Austria	2001	2006	2007	2010
Norway	March 2002	2006	2006	2009
Denmark	December 2002	April 2006	2007	2011
Ireland	March 2001	2006	2007	2010
Portugal	2000	2007	2008	2012

sequence by full launch date



ASO Strategies

- ❑ Dominant model is a free-to-air platform with some pay elements
- ❑ ASO date is determined arbitrarily in some cases
- ❑ All countries are using MPEG-2 (except France for pay channels)
- ❑ Marketing and coordination have been recognized as crucial
- ❑ Many countries have established economic incentives/support for consumers and broadcasters
- ❑ Contingency plans are not well developed (publicized?)
- ❑ Most countries are adopting a region-by-region approach
 - need to free up frequencies to extend coverage
 - limited rate of digital build/upgrade
 - decentralised regulatory structures
 - limit risk
 - learning from mistakes

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ASO timeline in Europe

	Full launch	ASO Type	ASO Approach	First ASO	Last ASO
Fully Launched Platforms					
UK	October 2002	target	regional	2008	December, 2012
Sweden	September 1999	firm	regional	September, 2005	February, 2008
Spain	November 2005	target	regional	December, 2007	April, 2010
Finland	October 2002	firm	national	December, 2006	December, 2006
Netherlands	April 2003	government fiat	national	2007	2007
Germany	May 2004	target	regional	August 2003	2010
Italy	January 2004	target	regional	January 2006	December 2006
France	December 2005	target	regional	2007	March 2010+
Limited Launches					
Switzerland	2006	government fiat	regional	2007	2009
Belgium	2006	government fiat	regional	2010	2010
Not yet launched					
Austria	2007	target	regional	mid-2007	2010
Norway	2006	firm	fast regional	2007	2009
Denmark	2007	firm	national	2011	2011
Ireland	2007				2010
Portugal	2007				2012
Greece	NA				2015

Note: Spain and UK based on re-launch dates

Source: EBU



Denmark

- There will a soft launch in April 2006 with one multiplex carrying DR, DR2, TV2,; the official ASO date is October 2009.
- Details on the status of the three additional multiplexes and other issues are still under discussion,
- The entire population could be covered in 18 months by 4 multiplexes. Just two regions (Copenhagen and North Jutland) represent 40% national coverage.
- A phased ASO will not be necessary and a national switch-over is likely. A few regional trials will probably be conducted first.

Norway

- A consortium (NTV) backed by leading broadcasters and Telenor may launch DTT by the end of 2006 as a pay service.
- Eleven regions will launch and switch-off in rapid succession over a thirty month period ending in late 2009.
- Norway would become the first country in Europe to launch a DTT platform entirely based on advanced compression technology MPEG-4.
- All players agree that the biggest threat to success is the delay in availability of MPEG-4 set-top-boxes.
- With transmission costs the highest in Europe, Norway is relying on a short simulcast. ASO could be 2009.

Finland

May be first country in Europe (the world?) to achieve national ASO

- ❑ Target date is August 31, 2007
- ❑ Household penetration nearing one third
- ❑ MUX A and B already at 100% coverage, MUX C since September
- ❑ Not implementing region-by-region approach
- ❑ Determined to convert cable households (must carry rules)

Digital Television Transmissions in Finland

MUX A for public service	MUX B	MUX C
YLE TV1	MTV3	Sports Ch.
YLE TV2	SubTV	Canal+ 4 channels *
YLE24	Nelonen	The Voice **
YLE Teema	MTV3+ ****	Regional ***
YLE FST	Nelonen Plus	2 radio channels **
4 radio channels	Data/ MHP- services	Data/MHP-services
MHP-services		

A fourth multiplex will be used for mobile purposes. Pilot project started 8 March 2005.

* Pay-tv, network coverage at least 70% and thus not must carry channels (operating licence held by C More Entertainment (former Canal+ Finland), as of Feb 2005 owned by SBS Broadcasting.

** Owned by SBS Broadcasting

*** Over Turku, Lahti and Kuopio.

**** Partly pay-tv

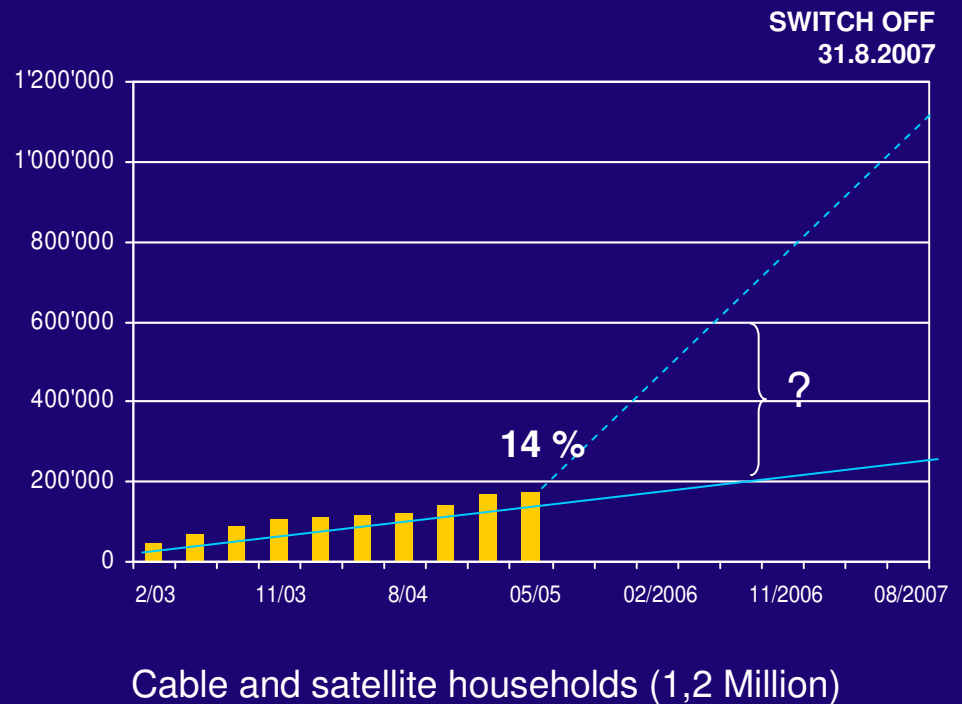
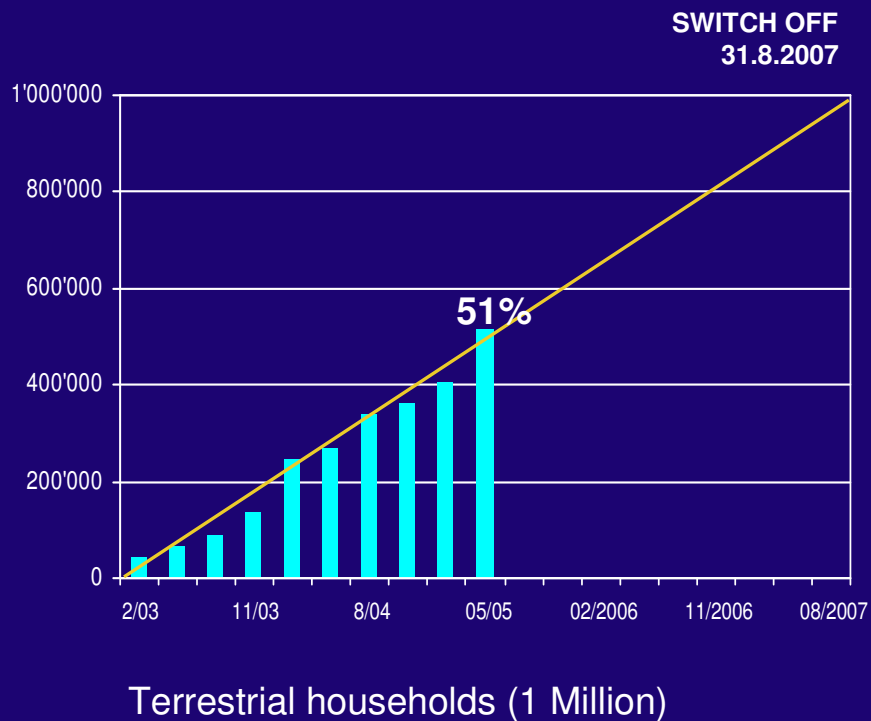
"Estradi" for short-term broadcasts using leftover capacity. SexTV.fi max 4 hours/week

Transmission network

(Coverage 2001: 72%=>A & B: 94% June 2004, 99% 2005)



Digital reception in terrestrial and cable households



Source: Finnpanel 2002...2005

The key elements are in place – success will depend on effective marketing and resolution of the cable issue.



France

- France's target for the beginning of the process of digital switchover is 31 March 2010, a date implied by statute.
- DTT launched on 31 March 2005 after the CSA licensed 14 FTA channels (now 18), to broadcast using the MPEG-2 compression.
- Initial DTT take-up has been strong, with over 600,000 STBs sold by the end of Q3 2005; more than 1 million by year-end.
- Pay TV launch window ends March 2006. There are delays in production of MPEG-4 STBs, but Canal+, TPS are to launch pay DTT offers soon.
- 85% coverage is targeted in 2007, but many believe further expansion would require financial support; possible delay in ASO.

Germany

- The German government took the decision to switch from analogue to terrestrial broadcasts in August 1998, setting a deadline for nationwide conversion to digital of 2010. Actual ASO may be earlier.
- The federal government has set national digital switchover policy in co-operation with the governments of the 16 regional Länder.
- Adoption of an “island by island” switchover policy with a short simulcast period between the launch of DTT services and complete analogue switch-off.
- The Berlin-Brandenburg ASO success set precedent. Included controversial transmission subsidies.
- The EC judgment is unlikely to alter the progress of switchover.

Italy

- The DTT platform launched in December 2003 had achieved approximately 14% household penetration by the end of Q3 2005. There may be close to 3 million DTT homes by the end of 2005.
- In late 2005, Italaly extended ASO date from 2006 to 2008
- Sardegna and Valle d'Aosta are the first of Italy's 20 regions to switchover, with target dates of July 2006. However, some controversy has developed concerning promised government support for local broadcasters.
- A set-top-box subsidy program since 2003 to support the purchase of interactive set-top boxes may be extended in 2006.

Spain

- After a 3-year hiatus, Government plans on a new free-to-air DTT platform were adopted in mid-2005. Platform launched end November 2005 and the ASO date has been moved to 2010.
- Challenges include the cost and delays of aerial upgrades. Multiplex operators will also have to incur significant costs to digitalise networks to meet coverage targets at switchover.
- After switchover, eight national multiplexes are to be allocated as follows: RTVE will be granted two multiplexes; one multiplex will be made available to each of the six national TV operators expected.

DTT Households in Europe (000s)

Country	1998	1999	2000	2001	2002	2003	2004	mid-2005
UK	247	552	774	1'240	1'260	2'997	4'593	5'178
Sweden		15	35	85	100	200	375	533
Spain				200	150	100	80	170
Finland				10	40	200	395	564
Netherlands						15	60	100
Germany						170	1'700	1'806
Italy						25	1'000	2'700
France								582
TOTAL	247	567	809	1'535	1'550	3'707	8'203	11'633

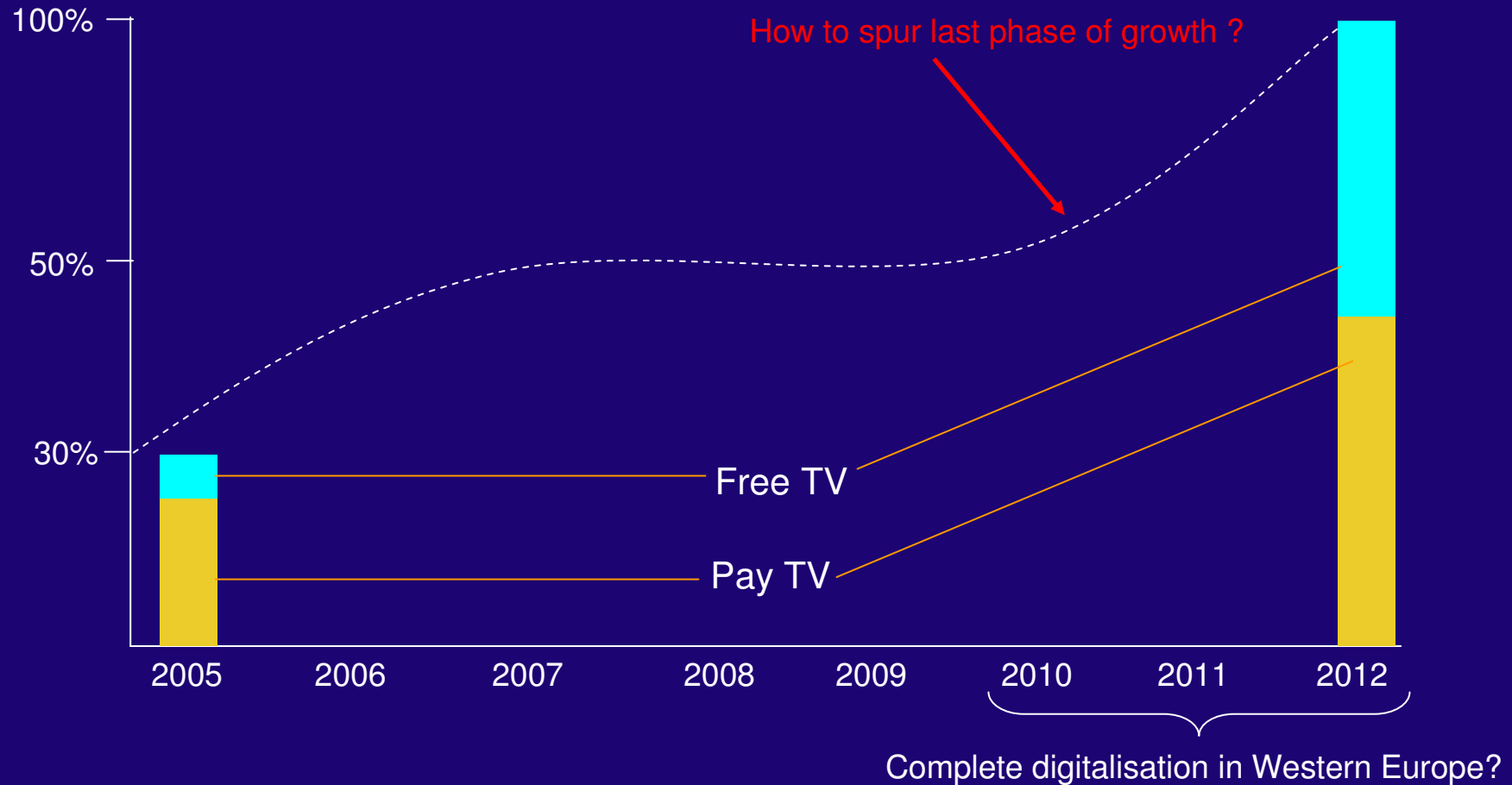
Source: EBU

Household penetration

Country	Penetration 2005	Years after full launch
UK	22%	7
Sweden	13%	6
Spain	1%	4
Finland	25%	4
Netherlands	1%	2
Germany	5%	2
Italy	13%	2
France	3%	<1

Source: EBU

Digital TV Penetration Scenario in Europe



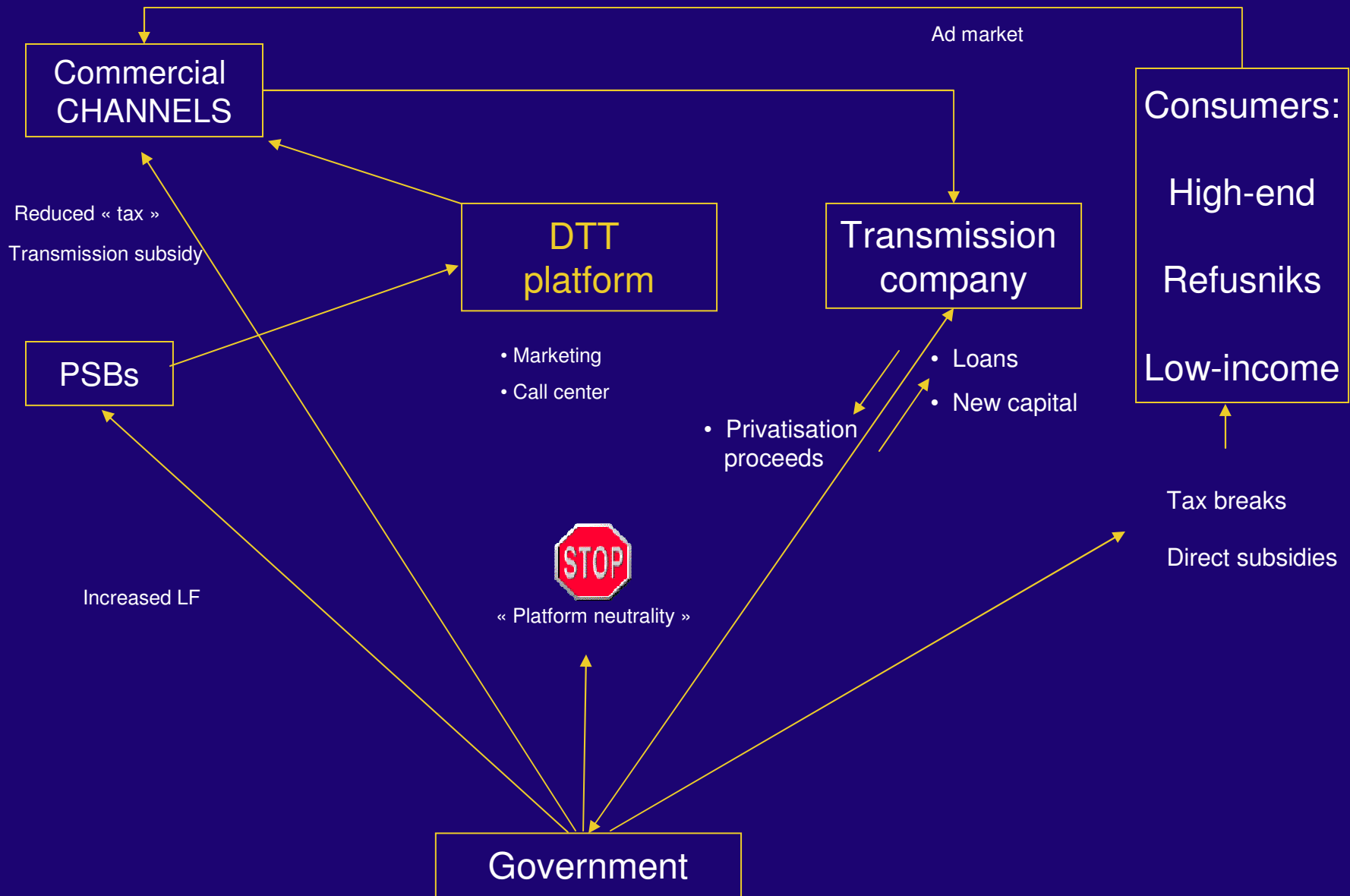
Market driven growth may hit a natural ceiling.

Facilitating ASO

- ❑ ASO dates should remain flexible and contingent on market conditions, but be fixed at soon as possible.
- ❑ communications and marketing budgets are inadequate, and lack sufficient coordination.
- ❑ Financial incentives and other supports promoting ASO may be necessary.
- ❑ The European Commission may consider creating an environment where Member States are permitted maximum flexibility to implement measures promoting ASO.
- ❑ Ensure that obligations placed on Public Broadcasters concerning ASO are commensurate with adequate funding

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Financial incentives promoting ASO



The political dimension

Benefits for policy makers, regulators, competition authorities

- ❑ Promotes competition in the electronic communications area;
- ❑ Contributes to Information Society objectives;
- ❑ Stimulates content industry;
- ❑ Gives prominence to public service broadcasters;
- ❑ Improves enforcement regulation of broadcasting content;
- ❑ Diversity and access for a wider range of the population;
- ❑ “Digital Dividend”, the economic value of released prime spectrum

European Commission's Push for Digital Switch-over

- The European Commission has urged EU Member States to accelerate switchover from analogue to digital broadcasting. The Commission expects transition to digital to be well advanced by 2010 and proposes a deadline of early 2012 for phasing out traditional analogue terrestrial broadcasting.
(24 May 2005)

Strong political signal from Brussels.



Main Obstacles identified by EC

- ❑ Absence of necessary political decisions
- ❑ Lack of European approach
- ❑ Need for consumer incentives
- ❑ Reluctance from operators to make necessary investments

At the same time complaints are being raised throughout Europe (mainly from cable and satellite TV operators) concerning incentives and indirect support for the development of DTT and accelerating progress towards ASO

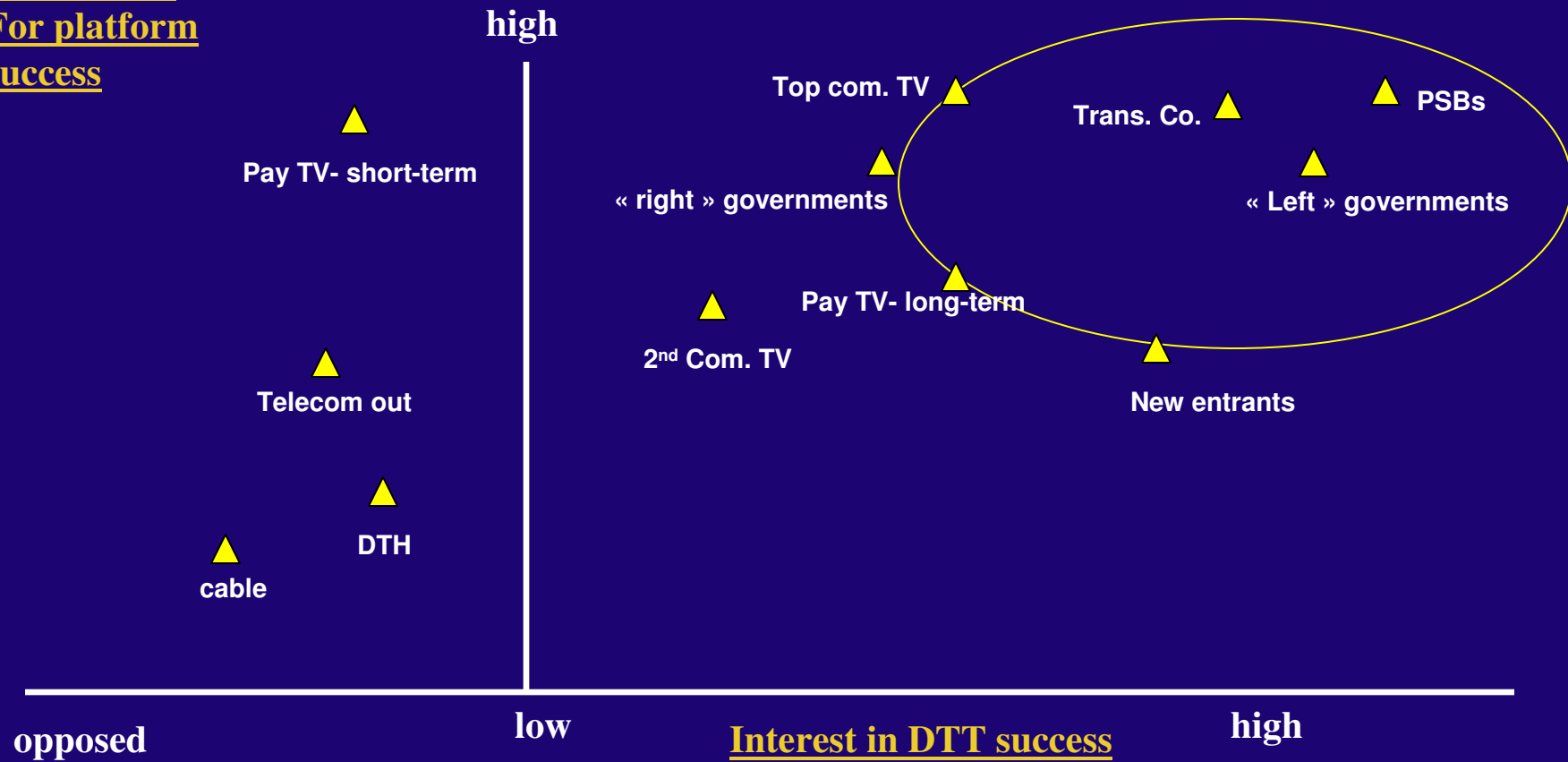
May, 2005 « Switchover Process in Member States »

The Berlin decision unlikely to affect development in Germany, but may inhibit other countries.



Motivation of Main Players for Switch-off

Importance
For platform
success



General model of main players interest and importance to the success of ASO.

ASO timeline in Europe: Will the targets be met?

	ASO Date (official or estimated)	Expected range
Fast Track		
Finland	2007	2006 to 2008
Sweden	2008	
Netherlands	2007	
Germany	2010	
Middle Term		
Belgium	2010	2009 to 2012
Norway	2009	
Denmark	2011	
Switzerland	2009	
Austria	2010	
Ireland	2012	
Last		
Italy	2008	2012 to 2015
UK	2012	
France	2010	
Spain	2010	
Portugal	2012	
Greece	2015	

Source: EBU