Final Report

# Ofcom

The development of free-to-view television in the UK by 2024

May 2014

## We are working with Ofcom to analyse the future evolution of free-to-view television in the UK over the next 10 years; we set out below a summary of our key findings...

**The legacy FTV landscape faces challenges in a crowded, complex and competitive market**

- Platform operators are evolving their propositions to incorporate new functionality as technology develops – FTV platforms must evolve to maintain share
- Shifts in audience behaviour are extending the battlegrounds between free and pay to new devices such as tablets and smartphones
- Bundled provision across TV, broadband and telephony is now a cornerstone of the platform market as operators seek vertical integration to lock in subscribers – this is creating pressures towards an all pay-TV world
- The upgrade path for foundational Freeview to a connected world will be determined in part by the decisions taken by broadcasters within YouView and Freeview
- Stakeholders (including platform operators, broadcasters, content owners, advertisers and new entrants) hold different interests and influence in relation to the balance of free and pay:
  - From pay TV platform operators' perspectives, the key challenge will be to maintain market share of high ARPU homes but actively segment by price/package to grow overall penetration even at the expense of ARPU
  - From broadcasters' perspectives, the key challenge will be to maintain viewing share despite fragmentation via platform distribution trends, and to manage the transition from a linear to a non-linear world (and a FTV to a pay world)
- The degree to which mass-market broadcasters manage to withstand transitional pressures may determine the extent to which public service objectives (around content, plurality, impartiality) can be achieved, absent a change in the levers in the control of regulators and Government

# A summary of our key findings (2)...

**A number of conditions must exist in order for legacy platforms to be replaced by alternative technologies**

- There are multiple determinants of the success of IPTV, including scale/scope of infrastructure investment, corporate strategies, the viability of business models and consumer preferences – therefore its potential role in substituting for broadcast is uncertain in any medium-term timeframe
- Those territories that have invested heavily in IP infrastructure are able to boast the highest levels of IPTV penetration; however, this largely reflects the ability of IPTV operators to compete by replicating the service offerings of existing platform operators in these territories, as opposed to offering a unique set of customer propositions
- A number of necessary technical conditions are required to enable market traction by IPTV operators – but technical factors alone do not alone account for the differences in IPTV penetration across territories

**A transition to DVB-T2 standards may fundamentally shift platform dynamics**

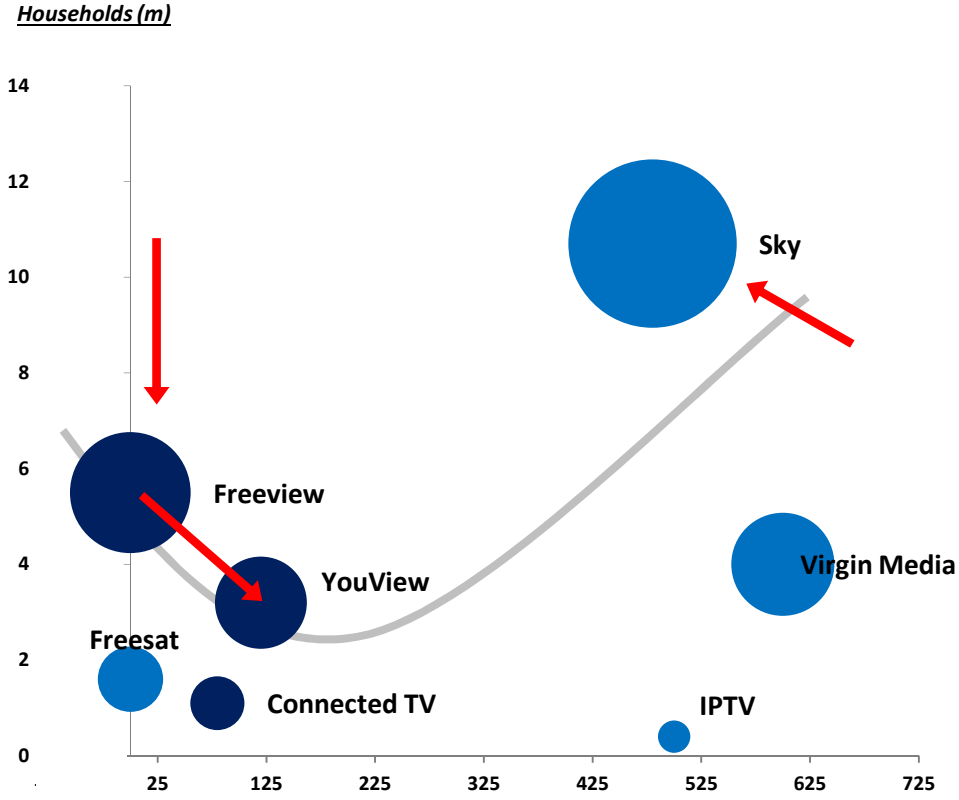
- If HD standards emerge as a critical requirement of viewers in the future, then a transition to T2 may prove necessary for the DTT platform to maintain its competition position – particularly following a clearance of 700 MHz
- A T2 transition (involving a hybrid DTT-IP proposition) would represent a more efficient use of spectrum, the delivery of consumer choice and competition in the platform market: these benefits are difficult to assign to particular stakeholders, suggesting a potential misalignment of incentives around the timing of any transition to T2
- A market-led "natural" progression to T2 is possible, although the timescale (well beyond 2020) implies that the benefits of a T2 world would only materialise at a point that is potentially many years beyond the timetable for 700 clearance

# A summary of our key findings (3)...

**Platform competition will intensify...**
**...new categories of pay-TV will emerge..**

- The prime battleground in coming years will be in a low to mid ARPU market segment
- ..i.e., those looking for greater functionality and control but unwilling to pay premium prices (via a traditional pay-TV offer)
- This is driven in particular by the evolution of consumer demand and technology to favour TV 2.0 propositions (content delivered *where*, *when* and *how* consumers choose)
- This battle will be joined by key bundlers (Sky, BT, Virgin) and will be complicated by new entrant economics (content aggregators, OTT propositions, etc.)
- The key change is likely to be the growth of *enablement pay* – incremental payments to ensure quality of service, easy navigation, portability, inter-operability – at home and on the move

## A less polarised market in future: households vs ARPU (2024)



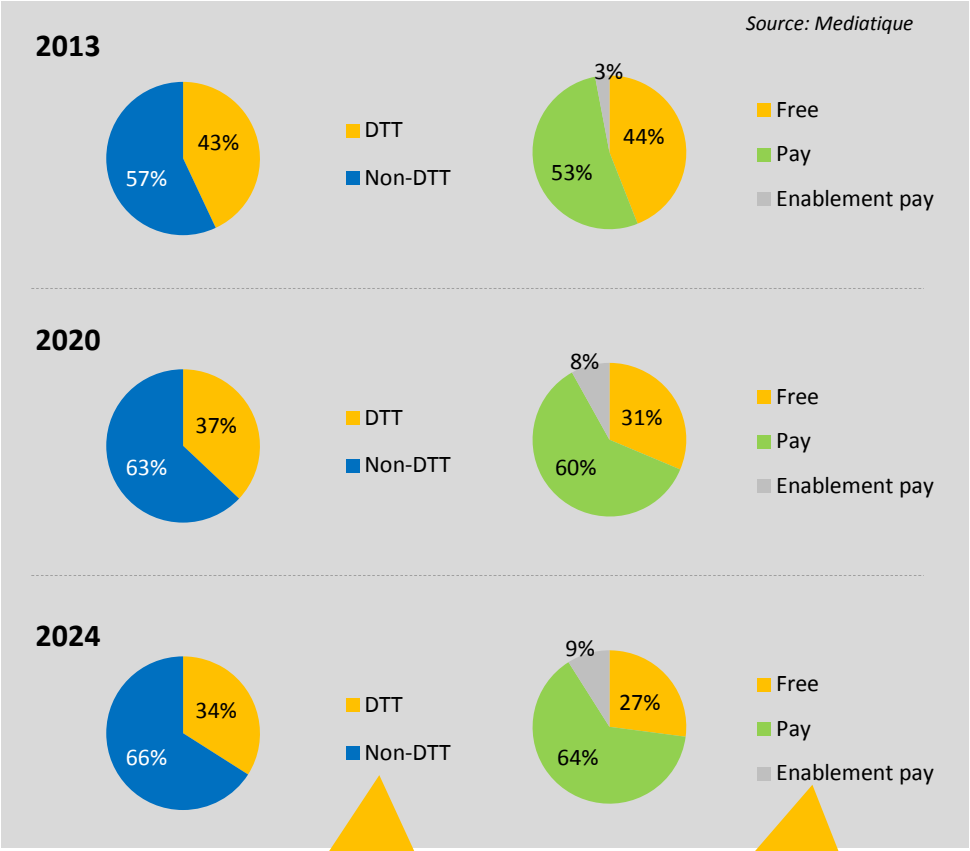

*Source: Mediatique*
*Dark blue bubbles refer to platforms that are rooted in DTT*
*Red arrows illustrate direction of travel relative to 2013*

# A summary of our key findings (4)...

**"Pay" homes will increase – although DTT will retain a significant role**

- We forecast that pure FTV homes (i.e., those receiving TV for payment of the licence fee, equipment and electricity bills only on the primary set) will represent just 27% of the market by 2024, while traditional (as opposed to enablement) pay homes will be 64% of homes
- DTT will still be the primary means of receiving TV in a third of homes, and even more important in delivering TV services on second sets
- ...although this will depend on its ability to meet viewers' changing needs (e.g., its ability to launch/sustain HD services)
- Such an outcome implies that broadcast will remain an important route to market for TV services throughout the next ten years (and beyond); nevertheless, IP will become a crucial distribution network – largely in combination with broadcast networks, rather than a substitute (except for minority audience services)

**DTT vs FTV penetration: 2013, 2020 & 2024 (% of homes, 1e sets)**




*DTT homes include Freeview, YouView, connected TVs and pay-TV services from BT and TalkTalk*

*FTV services/channels (including from the PSBs) will remain a cornerstone of consumption across all platforms*

# A summary of our key findings (5)...

**A more radical shift away from FTV is possible, were certain conditions to be met**

- Our base-case assumption of a migration of homes to a pay/enablement pay environment is rooted in presently identified dynamics, including main set connectivity, triple-play bundling models and robust linear viewing
- The key determinants that might alter this trajectory are changes to content economics, distribution dynamics and consumer behaviour
- ...other scenarios might emerge as a result of shifts in the scope, scale and speed of change in these key determinants
- These scenarios might include a far greater role for pay (characterised by a significant role for gatekeepers and aggregators of premium content) or free (characterised by agnostic content availability, linked to search/advertising-driven models)

## Drivers of a more radical outcome

| | |
|---|---|
| **A break with traditional content economics** | ▪The extent of upstream unbundling of rights and erosion of exclusivity arrangements between platform operators and content suppliers will alter the mix of pay and free |
| **Displacement of broadcast networks by enhanced IP network speed and coverage** | ▪A shift away from broadcast networks to a greater use of IP delivery (for all content, including linear and non-linear) will shift traction away from legacy players and enable new entrants to emerge<br>▪...these entrants are likely to operate a mix of free and pay models, however – e.g., Netflix (SVOD), Apple (discretionary pay), Google (ad-funded) |
| **Fundamental changes in mass-market consumer behaviour** | ▪ A more fundamental shift in consumer preferences away from long-form content to new forms of engagement will mitigate the role of legacy players and lead to new business models<br>▪ Such behaviours may allow new entrants to gain traction, and empower new business models, including both free and pay models |

1. **Introduction**

2. The battleground for FTV TV
   - Current dynamics in the platform market
   - Strategies of the major stakeholders
   - The challenges facing FTV TV

3. The role of IPTV in international territories

4. The transition towards DVB-T2 standards in the UK
   - The role of T2 in the platform market
   - Drivers of transition towards DVB-T2

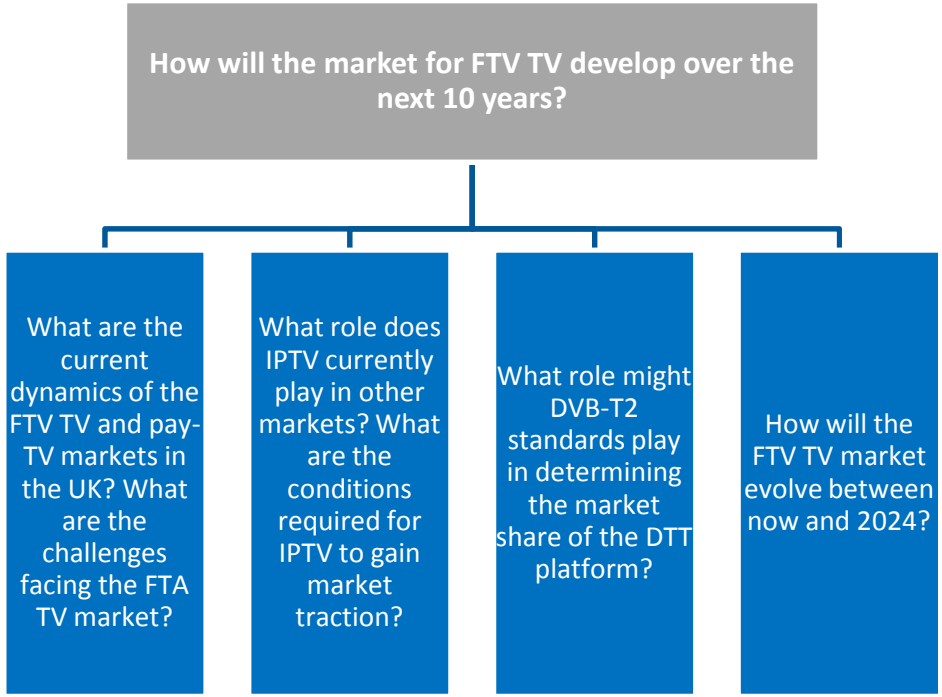
5. The evolution of the platform market to 2024

6. Appendices
   - A framework for considering the strategic incentives of multiplex operators towards a T2 transition
   - Profiles of selected markets

# We are working with Ofcom to consider the future evolution of free-to-view television in the UK over the next 10 years...

- Ofcom is undertaking analysis to understand the development of free-to-view ("FTV") television delivery in the UK and the consequences this might have for policy and regulatory decisions over the next 5-10 years
- Mediatique is working with Ofcom in four key areas:
  - To consider how the current television landscape is structured, and how the FTV and pay-TV universes will evolve in the future
  - To understand the development of IPTV in various international markets where there are similar demands for spectrum that might suggest the need to displace broadcast services in favour of other spectrum uses
  - To understand the options of key DTT stakeholders in upgrading the DTT platform to more efficient standards, and in particular the scale and speed of the transition from DVB-T1 to DVB-T2 absent any regulatory intervention
  - To forecast the development of the UK platform market, including the role of FTV TV over the next 10 years

## Key elements of our analysis



# This report is based on Mediatique's own analysis and the conclusions stated herein are those of Mediatique...

## Important information

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**Scope of our work**

- Mediatique was engaged by Ofcom to provide research and analysis of the UK platform market in 2013
- Mediatique prepared three separate reports to Ofcom: (1) an analysis of the future evolution of the UK platform market, (2) a comparative assessment of the penetration of IPTV platforms in selected international territories, and (3) the prospects for a transition to DVB-T2 in the UK; these reports were provided separately to Ofcom under a single mandate. This report represents a consolidated version of all three areas of analysis, and has been updated where appropriate
- All estimates and forecasts are stated as of December 2013 unless otherwise indicated

**About Mediatique**

- Mediatique is a strategic advisory and research firm specialising in the communications industries in the UK and internationally. Mediatique provides bespoke advice and market intelligence to companies across three main areas: strategy consulting, commercial due diligence and independent research
- The firm has worked for major UK, US and European media companies, and has particular experience in platform developments, commercial strategies and public policy

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# We have agreed a broad definition of "free" and "pay" to account for recent changes in the structure and dynamics of the distribution market...

- No TV service is entirely "free", and all households must pay some initial or incidental costs in order to watch TV content
  - The BBC's licence fee applies to all households where linear TV is watched by whatever means
  - All households must pay electricity charges relating to powering devices used for TV reception
  - TV sets, aerials, dishes and digital tuners can represent one-off costs. For example, a DTT home equipped with a digital tuner bought from Tesco or a YouView box purchased from John Lewis would be considered a "free-TV" home
  - ...*although* some pay-TV providers will charge/amortise the cost of kit via a monthly subscription: e.g., Virgin Media charges £5/month for PVR capability, BT TV/Sky costs implicitly include a re-charge for upfront subsidised kit
  - Householders that seek to access on-demand content or stream live channels require a broadband subscription – although in most cases this is a similar utility to electricity (unless explicitly linked to a subscription to watch additional content or benefit from increased functionality for an incremental fee)
- As a consequence, we define "pay" homes as those that are required to make an **ongoing,** *incremental payment* to receive audio-visual services...
- Our definitions of the key categories of TV service are set out opposite

## Categories of TV service: free vs. pay

| | |
|---|---|
| **"Free"** | ▪ No ongoing subscription for access or content<br>▪ ...includes free-to-air DTT and Freesat<br>▪ ...and iPlayer, ITV Player, etc. (for the free window) |
| **"Pay"** | ▪ Ongoing subscription to pay operator for basic and/or premium content<br>▪ ...includes Sky, Virgin and non-entry level packs for BT/TalkTalk<br>▪ ...also includes subscription on-demand services like Now TV and Netflix |
| **"Discretionary pay"** | ▪ A one-off payment to secure a piece or portfolio of content<br>▪ This has always existed (e.g., DVDs, VHS, PPV movies)...but is even more prevalent with "true" on-demand – with download-to-own options via iTunes or DTR archive/premium from ITV Player<br>▪ These are technically "pay" services, although they include no ongoing subscription and are almost entirely complementary to existing free/pay services |
| **"Enablement pay"** | ▪ Finally, we have introduced the concept of "enablement pay" to account for a payment that enables a household to efficiently receive quality services via their TV (such as as VOD players) that are otherwise available (e.g., online) at no charge<br>▪ Examples are the basic TV services from BT/Talk Talk |

## We have considered how different stakeholders in the TV market determine their attitudes towards free and pay services...

### Drivers of attitudes towards free and pay for consumers, producers, and distributors

**Consumer**

- **Exclusivity**: access to content or services that are not available elsewhere
- **Ownership**: ownership of content that can be stored, re-watched and shared
- **Convenience**: convenient access to content on an anytime basis, or an anywhere (any-device) basis
- **Habit**: consumers are reluctant to pay for content that they have typically received for free

**Producer**

- **Profitability**: pay or free models may be more profitable depending on the price elasticity of demand
- **Prestige**: pay models have historically been associated with higher quality content
- **Exposure**: producers seeking the greatest exposure for their work may prefer FTV distribution
- **Fan-dom**: FTV or variable/voluntary pricing can be a source of good will toward fans

**Distributor**

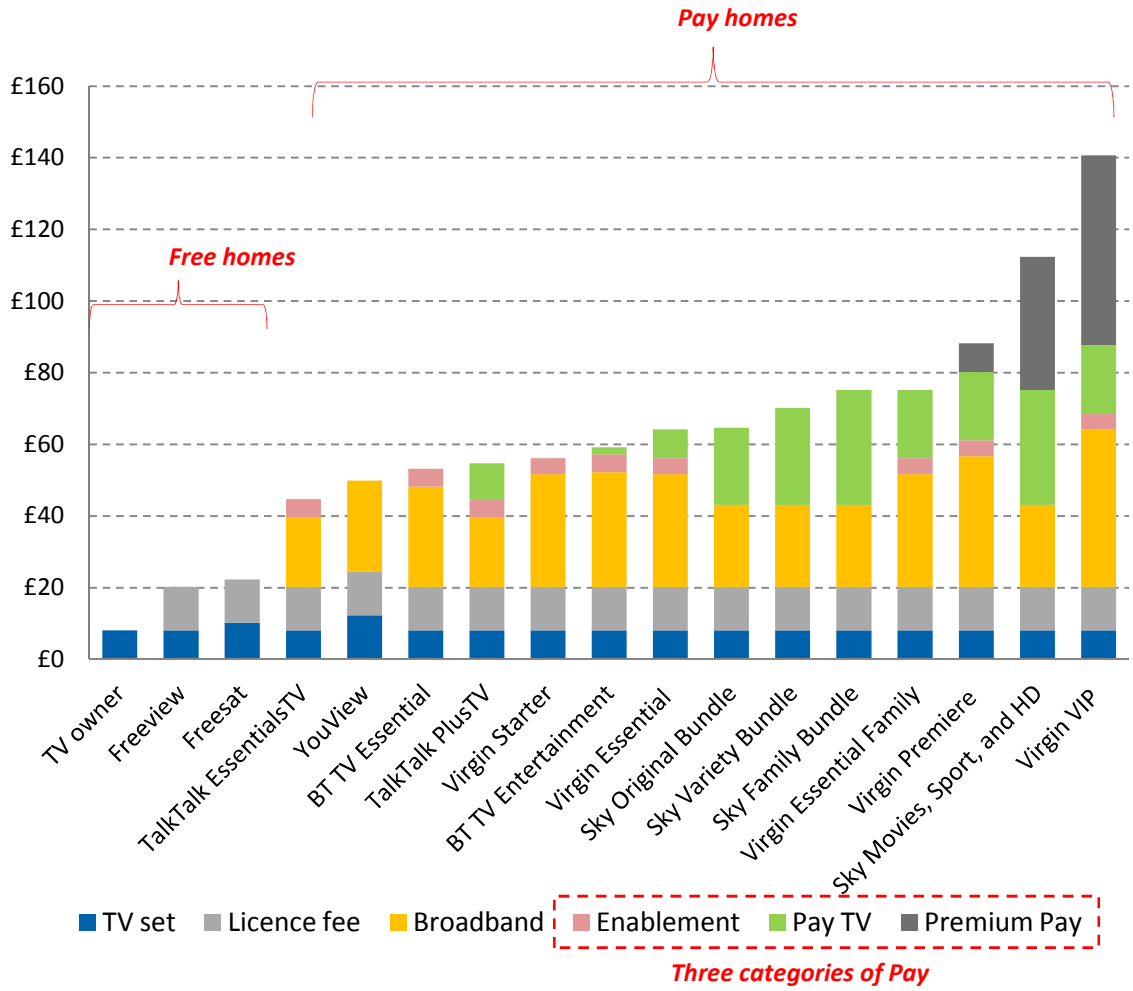
- **Efficiency**: pay models typically deliver higher revenue *per hour* than free models
- **Competition**: pay/free models of competitors (and new entrants) will influence existing models
- **Scale**: distributors can be more able to secure payments from smaller (niche) audiences
- **Reach**: distributors seeking to maximise reach will typically require FTV distribution

*The drivers of attitudes for producers and distributors have traditionally been linked across the value chain; however developments in IP-enabled distribution have afforded content owners heightened control of pricing decisions, and more weight to their free-pay attitudes (we explore this in more detail in section 3)*

# The entry level prices for each category of TV home provide a current snapshot of the continuum between free and pay...

- We have adjusted hardware and subscription costs for access to a range of TV services to render them on a comparable monthly basis (using market data and standard amortisation*)
- All TV owners must pay the initial upfront cost of the TV set, tuner and/or aerial or dish if required, as well as the cost of electricity (included in "TV owner" on the figure opposite)
- Any households where broadcast television is watched are also obligated to pay the universal licence fee
- Households that access catch-up or on-demand services through their set or another device require a broadband connection
- Enablement refers to the cost of kit enabling catch-up and on-demand services, implicitly included in many pay-TV subscriptions (e.g. TiVo included in Virgin Media packages, and YouView boxes included in BT TV and TalkTalk packages)
- Additional content available at a premium beyond that offered by the free-to-view channels and their associated on-demand services constitutes "pay TV"; while "premium pay" refers to the breadth of content and functionality offered in the highest pay tier (normally incorporating movies and sport)

## Cost structure of free and pay services (monthly £)

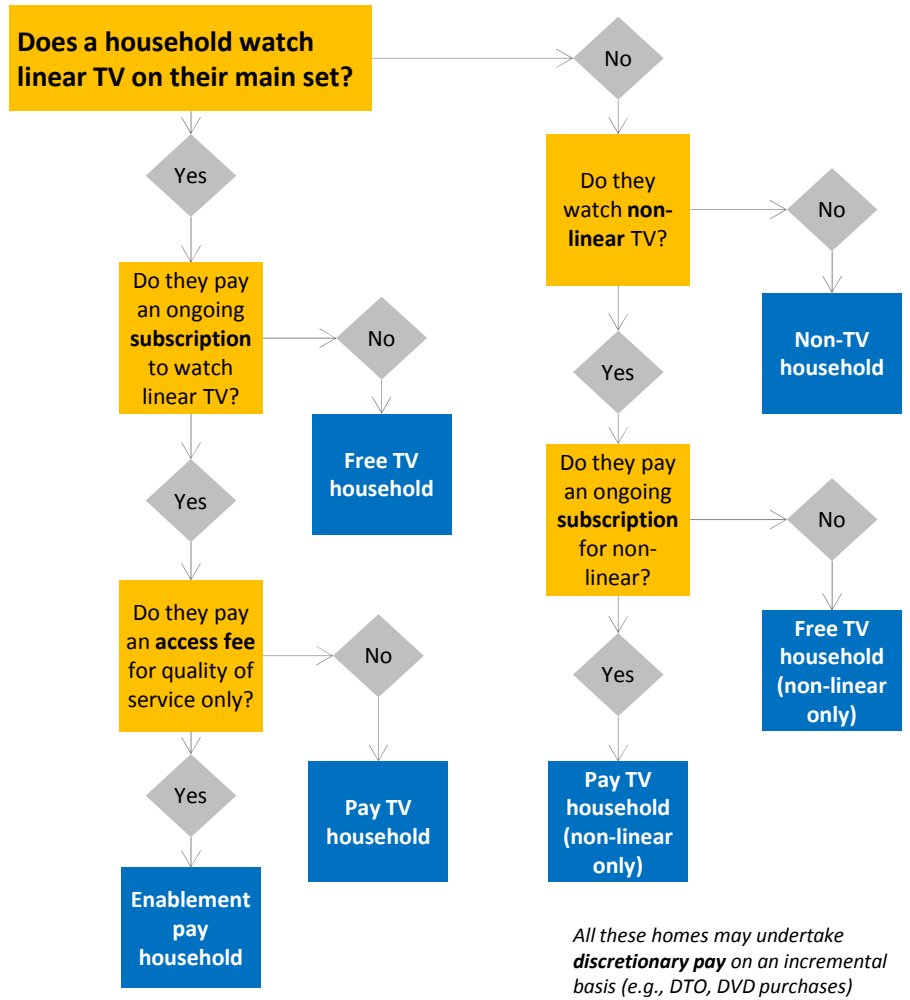



*Source: Mediatique, operator websites*

# We have sought to capture existing, emerging and future consumption habits within our definitions of free and pay...

- We apply our definitions initially to the main set – thus if there is a linear TV service from Sky, Virgin, BT, etc. on the main set that requires an incremental, ongoing payment, then the home is defined as a pay home (irrespective of whether other sets have free or pay services accessible on them or whether other subscription services are available in the home)
  - This approach allows us to capture a range of behaviours, including the increasing (and potentially substitutable) role of non-linear viewing
  - ...as an example, a home that uses a broadband connection to access Now TV or Netflix (and therefore pays a monthly subscription) is only considered to be a "pay" home if the main set has no other means of receiving broadcast TV (e.g., there is no linear DTT tuner)
- A particular definitional complexity is presented by the case of YouView and generally by all examples of what we call *enablement pay*, where consumers are invited to pay an incremental ongoing subscription to ensure quality of service and functionality (and to benefit from subsidised receiving equipment)
- A flow-chart illustration of our approach to defining TV homes is set out opposite

## Flow chart approach to defining TV homes




*All these homes may undertake **discretionary pay** on an incremental basis (e.g., DTO, DVD purchases)*

# The platform market in the UK is supplied by many players, across a range of distribution technologies; the propositions offered by these providers include a mix of free and pay services, breadth and depth of channels

## Key propositions in the UK platform landscape

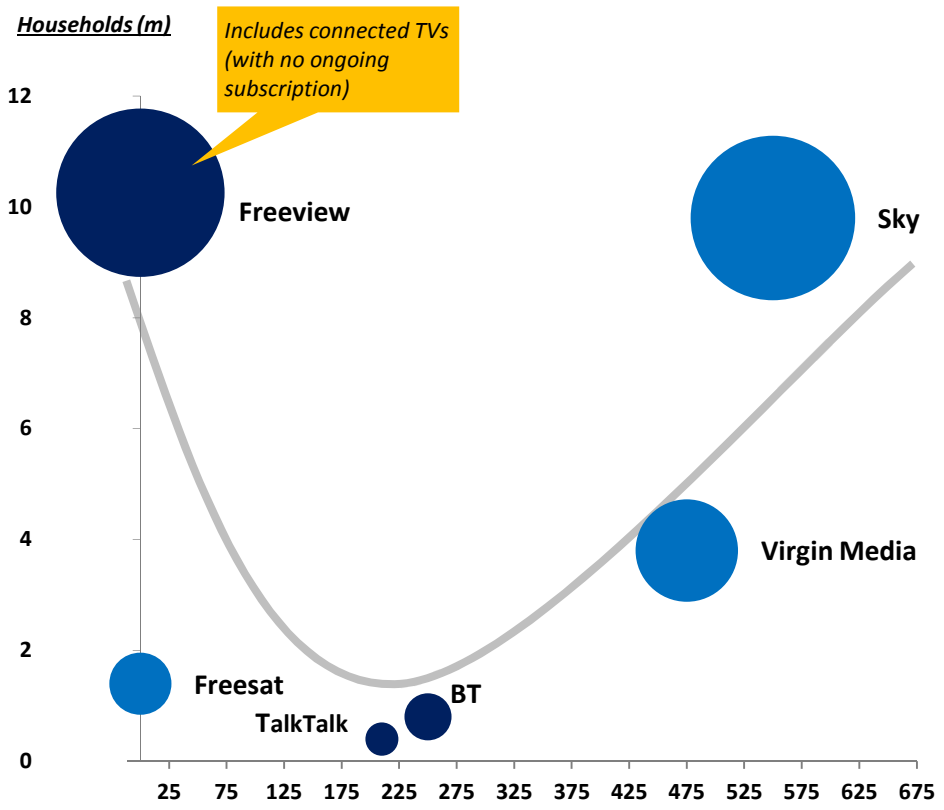
| | Summary | Key services | Core network | Model |
|---|---|---|---|---|
| **Sky** | ▪ Pay platform offering breadth and depth of content, including basic and premium content<br>▪ Strong functionality offer, including bundled triple-play services | 450 channels, including c70 HD; movies, sport, PVR, IP on demand | Satellite (and IP to deliver on-demand) | Pay |
| **Virgin Media** | ▪ Pay platform with multiple tiers, focussing primarily on triple–play offering with a focus on superfast broadband | 175 SD and HD channels featuring both basic and premium; also TiVo on-demand functionality | Cable (largely fibre optic) | Pay |
| **Freeview** | ▪ Default TV platform supplying over-the-air broadcast services including all PSB<br>▪ Wholly a horizontal market although addressable by hybrid IP-delivered services<br>▪ Smart TVs from Samsung, Panasonic etc. typically use Freeview as foundation | 55 video streams (c70 channels) including all FTV networks; some homes have HD, PVR, IP connectivity via Smart TVs | Terrestrial broadcast (DVB-T1 or DVB-T2) | Free |
| **Freesat** | ▪ Free-to-view service from either BSkyB or ITV-BBC available for a one-off hardware payment<br>▪ Some homes now connected to hybrid IP-DSAT (via Smart TVs or STBs) | 120 channels, including all “Freeview” plus additional HD and FTV satellite channels (adult, religious, etc.); some IP via G2 | Satellite (and IP to deliver on-demand) | Free |
| **BT & TalkTalk*** | ▪ Suppliers of A/V propositions alongside broadband/telephony, currently bundled with a DTT tuner – key consumer brand is YouView* | DTT tuner-delivered SD and HD plus IP-delivered on demand and selected linear over IP pay channels | Hybrid (terrestrial broadcast + IP) | Pay* |

**BT operates both BT TV (BT Vision) and YouView propositions (depending on whether household is in an Infinity area and/or wants Sky Sports 1,2); TalkTalk offers YouView only; both require incremental payments to access A/V services and receive subsidised kit*

# The UK market is currently heavily polarised between free and pay – with Freeview and Sky accounting for the vast majority of TV homes...

- With the completion of DSO in late 2012, the TV market in the UK has reached a milestone, with all 26m households now receiving their TV in digital form
- Despite the range of platforms and propositions offered to viewers, growth in digital platform penetration has been dominated by Freeview and Sky
- ...between them, Freeview and Sky are responsible for 85% of the growth in digital TV between 2002 and 2012, and currently account for almost 80% of homes between them
- The UK market is therefore characterised by significant polarisation between free and pay platforms

## Polarisation in the UK platform market (2012 outcome)




*Source: Mediatique*
*Dark bubbles refer to platforms relying on DTT for delivery of linear services*
*BT and TalkTalk include YouView-affiliated services; BT also includes BT Vision*

# FTV platforms have historically been sustained by a regulatory structure that secures the universal availability of high-quality free content from the PSBs...

## Drivers of FTV TV

**Free quality content**

- The public service broadcasting compact in the UK continues to ensure that the leading networks (including all BBC channels, ITV, Channel 4 and Channel 5) are freely available
- The Freeview and Freesat platforms have also benefited from carrying quality extension channels from the PSBs and other FTV channels from multi-channel operators
- Freeview currently offers 70 services, and the line-up includes channels from UKTV (4 channels), Discovery, Sky and MTV

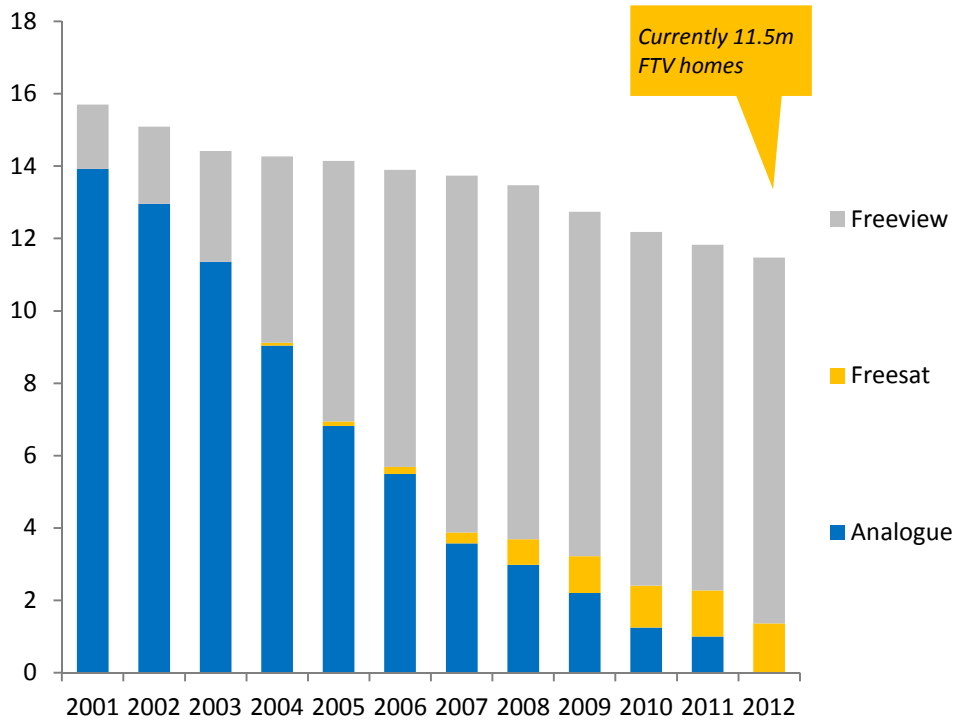
**Low entry price points**

- The principal FTV platforms operate in a horizontal market, with multiple manufacturers competing for market share in the sale of set-top boxes and TVs (with integrated tuners)
- These platforms allow a simple "plug-and-play" model (subject to the fitting of an aerial or a dish) at typically low, one-off entry prices

**Public policy**

- Public policy has always sought to ensure that there is a competitive platform market including FTV alternatives
- The PSB compact is also rooted in ensuring the free and universal availability of channels from the BBC and commercial PSBs

## Growth in FTV platforms (m, primary sets)




*Source: Mediatique*
*Freeview includes all DTT homes that do not have a pay/enablement pay subscription (i.e., excluding BT Vision, TalkTalk, YouView)*

# Pay-TV platforms have been sustained by the availability of premium content and a drive to bundle functionality to lock in subscribers...

## Drivers of pay TV

**Breadth and depth of content**

- Pay platforms have typically provided significant choice to subscribers, initially via the bundling of multiple channels/genres across basic and premium tiers (layered on top of the free-to-air channels provided by the PSBs)
- Indeed, the main drivers of Sky's subscription growth, historically, have been its exclusive grip on Hollywood movies in the pay-TV window and its leasing of major exclusive sports rights (led by Premier League football)

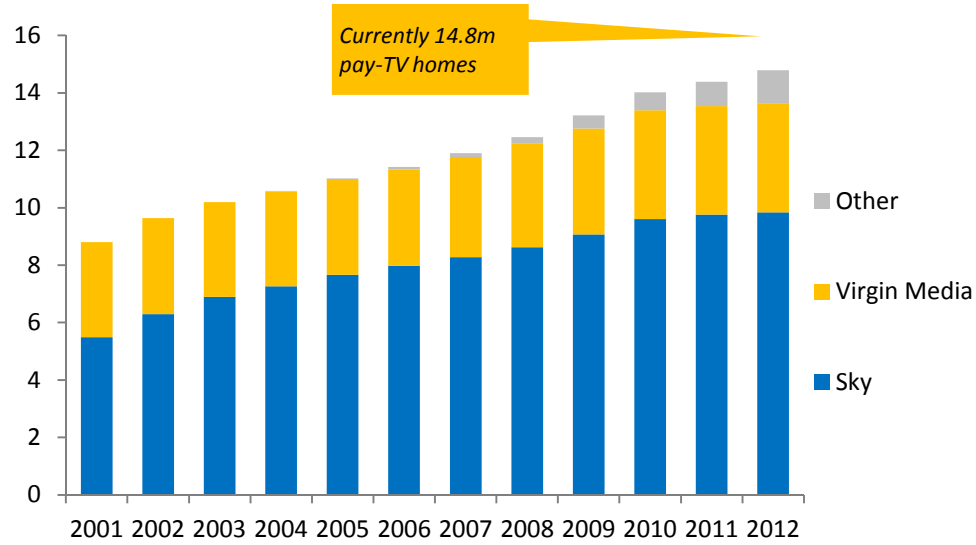
**Functionality**

- Pay operators have invested heavily in evolving their propositions, giving consumers increasing control over viewing opportunities, in addition to increasing choice
- The offer of time-shifting capability, advanced EPGs, HD and on-demand functionality in and out of home addresses underlying consumer demand for control and drives subscriber growth and churn reduction

**Bundling**

- Major platform players have sought to extend the range of services they offer beyond TV in response to slowing growth in their core maturing markets and in light of consumer preferences
- ...for example, growth in standalone pay-TV subscriptions has slowed, leading platform operators (e.g., Sky) to target the cross-promotion of fixed line and broadband services to core TV subscribers
- This is turn has encouraged broadband/telephony players to improve their own bundle services (specifically by adding A/V elements)

## Growth in pay platforms (m, primary sets)




*Source: Mediatique*
*Other includes BT and TalkTalk (including YouView homes)*

## Evolution of Sky's consumer proposition

# Broad developments in technology, consumer behaviour and commercial strategies are creating pressures on the current balance of free and pay...

## Drivers of change in platform propositions

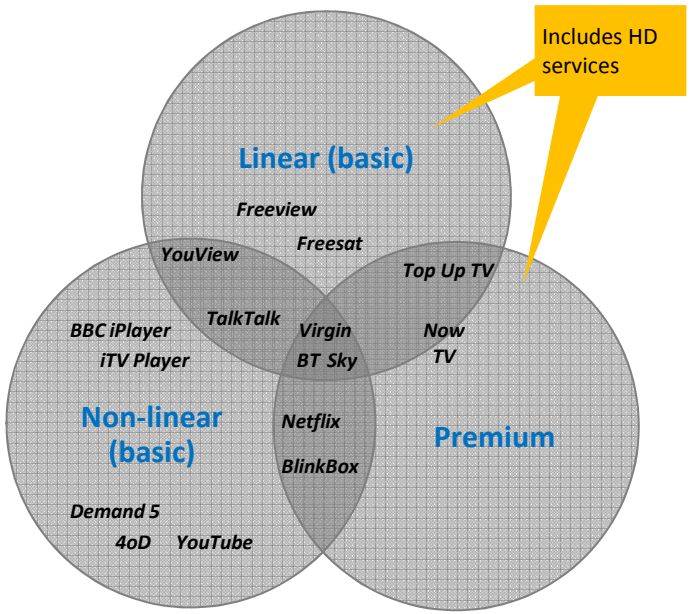
| | |
|---|---|
| **Consumer preferences** | ▪ Viewers are embracing new opportunities to view content on a time- and place-shifted basis. Expectations have also shifted as viewers increasingly expect content to be easily and readily available on all connected devices following initial broadcast<br>▪ Consumer preferences have also embraced the bundling of media and communications services within a single bill – accelerated by commercial strategies (e.g., Sky offering "free" or inexpensive broadband to TV customers, BT offering free content to broadband customers) |
| **IP penetration** | ▪ Internet access has reached more than 80% of UK homes, and internet speeds continue to increase – reaching an average of 14.7 Mbps by May 2013, with 86% of fixed-line residential broadband subscribers taking a package offering higher than "up to" 10 Mbps (19% on SFBB of >30 Mbps); such connectivity is a key enabler of non-linear content delivery, underpinning propositions launched by aggregators |
| **Device proliferation** | ▪ Viewers are able to access video content through an increasing array of connected devices, including personal computers, tablets, games consoles and smartphones<br>▪ Price and non-price competition among manufacturers has led to significant take-up of these connected devices |
| **Commercial strategies*** | ▪ Legacy TV providers (including free and pay platforms and content aggregators) have sought to extend their distribution footprints to emerging networks and devices – with the PSBs, for example, launching on-demand players (to a variety of devices) and Sky/BT launching hybrid models that span both broadcast and IP (fixed and mobile) distribution networks |
| **New business models** | ▪ Content owners are making their content increasingly available via a range of distribution outlets, driven in part by the increasing penetration of broadband and supported, connected devices<br>▪ ...this includes legacy players such as the BBC (launching iPlayer on multiple devices/platforms) and new entrants (many of which are developing propositions that reach viewers specifically on new connected devices) |
| **Implications** | ▪ **These trends are creating complexity in the platform market, enabling new routes to market and reducing barriers to entry**<br>▪ **...likewise, we have seen an acceleration in multi-platform and multi-device convergence (see overleaf)** |

** Further detail on the strategies of key stakeholders is set out in the following section*

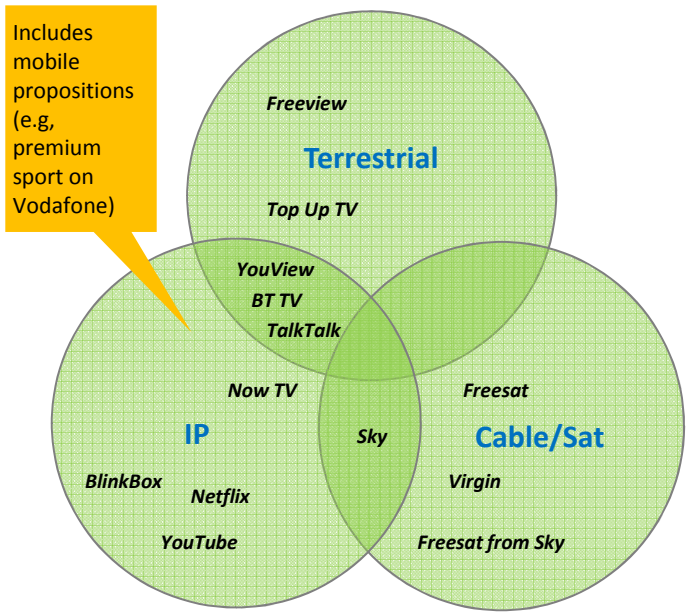
# These developments are enabling convergence in content propositions and distribution options – creating a more complex environment...

- These developments in technology and consumer preferences have led to significant convergence of proposition and delivery
- BT, for example, now offers a TV service comprising basic linear channels, non-linear services and premium services (including live sport and pay-TV channels), delivered over terrestrial and IP networks
- Likewise Sky optimises its delivery over broadcast and IP networks – distributing its linear (basic and premium) channels over satellite, and its on-demand services via IP

## Converging propositions in content




## Converging propositions in distribution



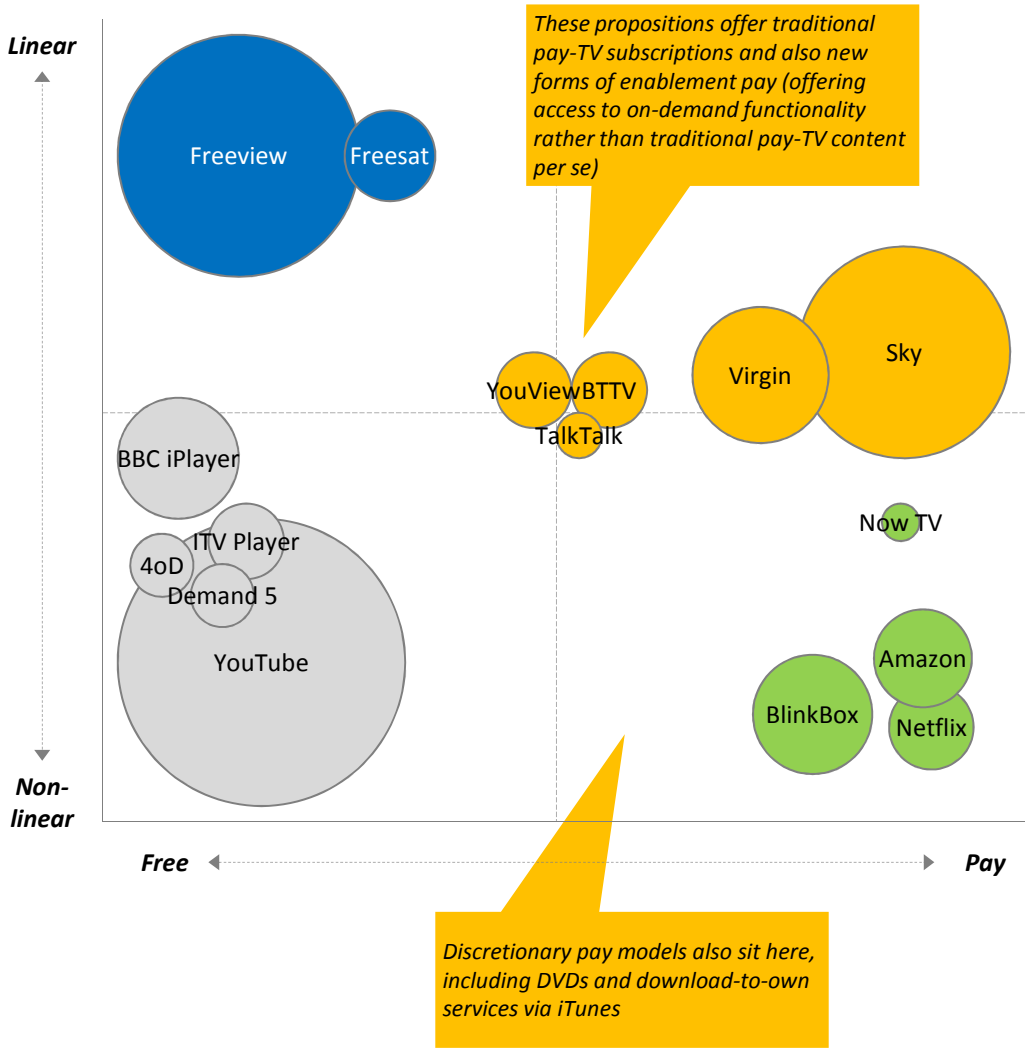

Such convergence has two major implications for market definition:

- Operators are increasingly offering **multiple bundles of services**, including combinations of linear, non-linear, premium and basic over multiple technologies to multiple devices
- **New pay models are emerging**: for example, BT and TalkTalk now offer subscribers access to basic non-linear (notably the PSB players) at a small incremental fee to their underlying broadband subscription. This is primarily a payment for quality of service of IP-delivered content – we term this "enablement pay"

# Convergence and market entry have given consumers an increasing choice of TV propositions – including a mix of legacy and new models across free and pay...

- We have categorised the range of available propositions in four key quadrants – including linear/non-linear and free/pay – which captures the main characteristics of current and emerging audio-visual providers
- Households can make multiple choices across quadrants, such that a household can be a free-linear home and a pay-non-linear home (e.g., by having Freeview on the main set and subscribing to Netflix), or an entirely free home (by having Freeview on the main set and watching iPlayer on any device)
- ...as such, a user of (for example) Netflix would be considered either a free home or a pay home depending on the source of their foundational primary linear service

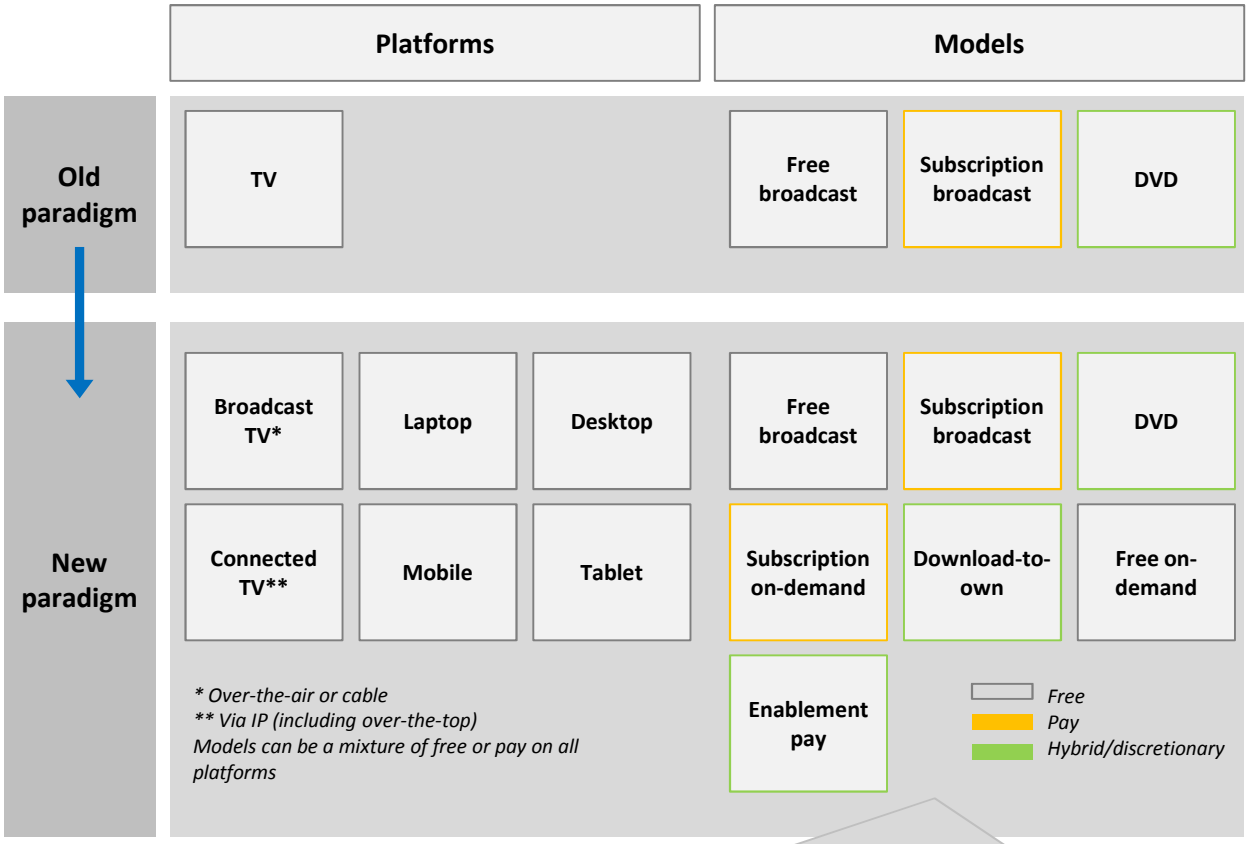
## Available propositions in the UK



# The value chain is becoming increasingly complex, with multiple delivery platforms and business models; this hints at the emergence of multiple battlegrounds between legacy and new players...

- The proliferation of propositions has enabled a new range of business models to emerge
- Consumers are now able to use a number of routes to content, via both free and pay models
- ...for example, viewers can now combine a foundational free-TV broadcast service with access to discretionary pay services (via download-to-own or DVD purchases)
- A crucial trend is the shift by existing pay-TV operators to bundle multi-platform access within a single subscription
- ...we refer to this as authentication, which allows subscribers to pay a monthly fee to access content on a linear and non-linear basis across multiple devices
- The extent of bundling will be determined by a host of factors, including the willingness of content owners to supply rights (via evolving windows and contract terms)

## New models of distribution and consumption

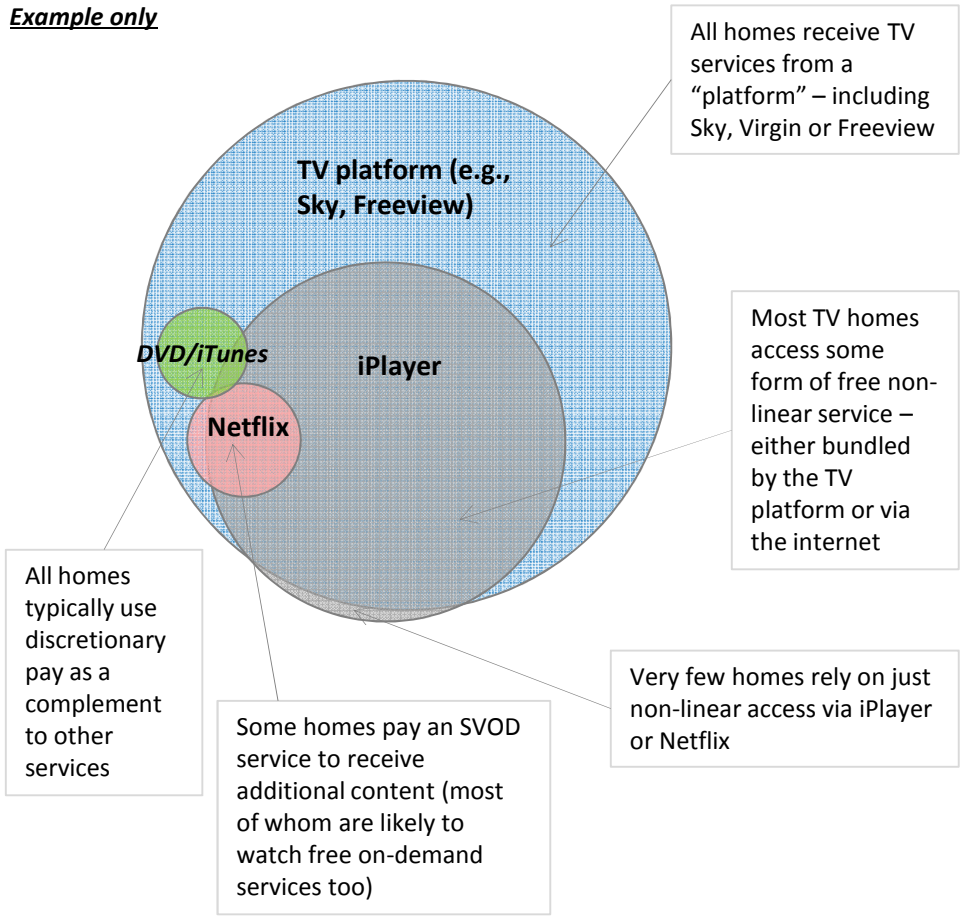



These emerging models open up the possibility of viewers choosing a free broadcast platform (e.g., Freeview) as their foundational service, complemented by incremental payments/subscriptions to on-demand services such as iTunes, Amazon or Netflix
...by contrast, legacy pay-TV platforms' authentification strategies attempt to see off this threat

# The current distribution landscape affords a role for multiple players and business models – although these remain rooted in foundational legacy platforms/devices...

## Consumption patterns and platform usage: *by platform*

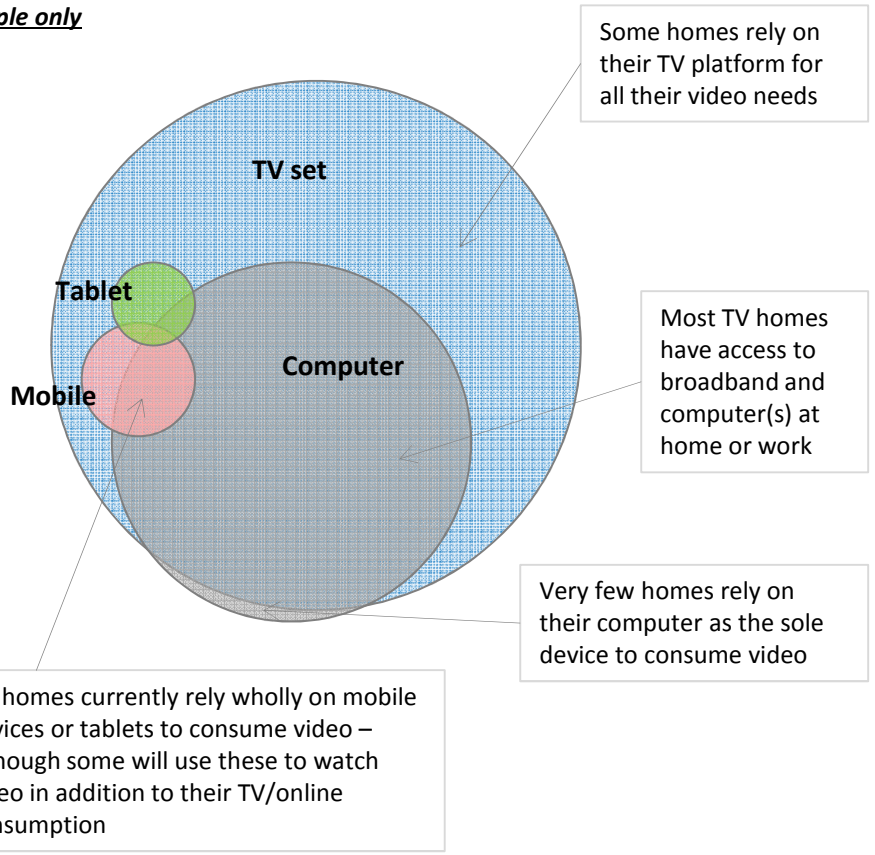
***Example only***




*Source: Mediatique*
*Venn diagrams are illustrative only*

## Consumption patterns and platform usage: *by device*

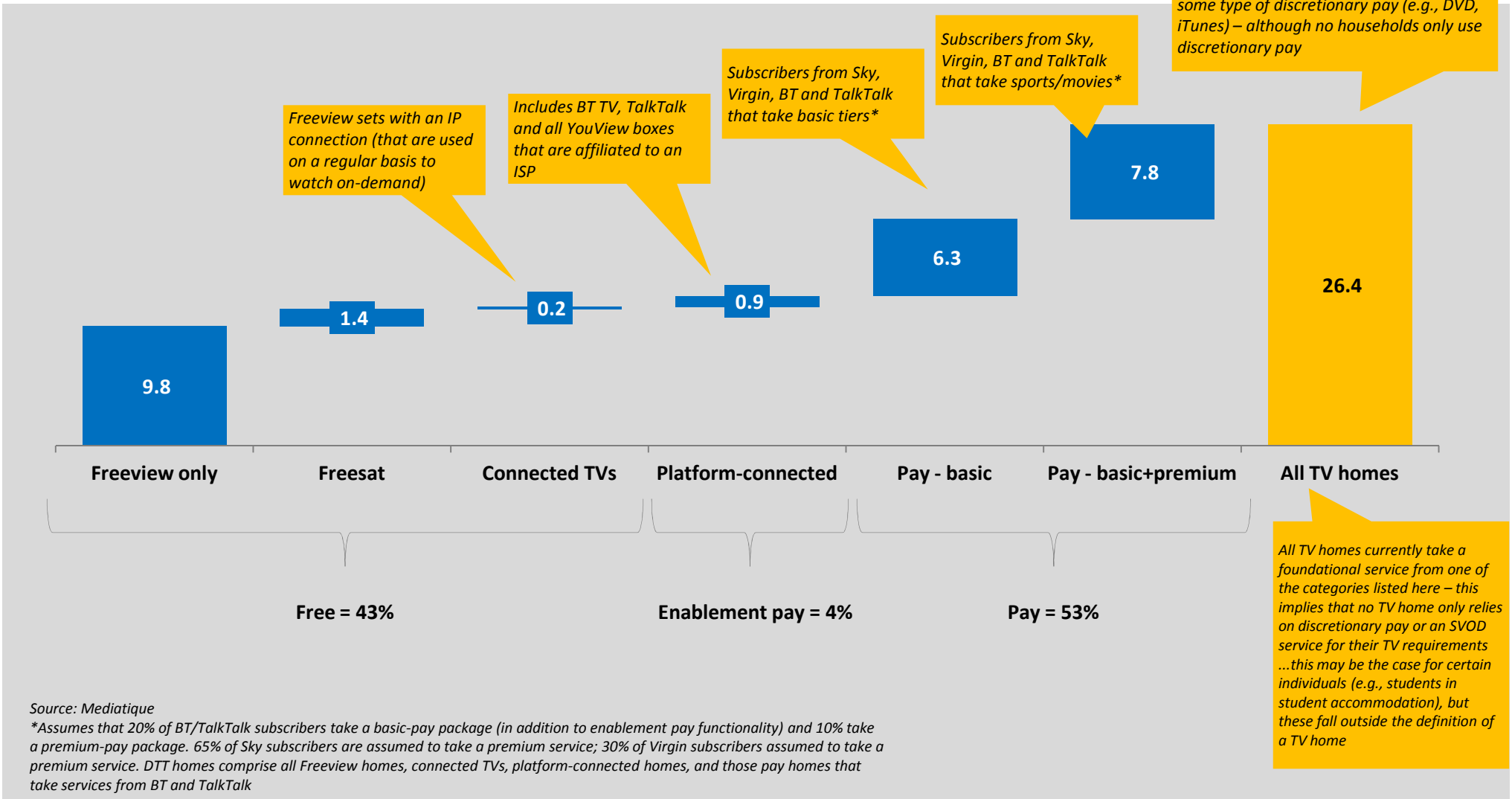
***Example only***




These Venn diagrams illustrate our assessment of typical patterns of consumption currently; over time, these will change as consumer behaviour and commercial strategies change (see sections 4-5)

# Current platform take-up contains a mixture of free and pay platforms, with 43% of homes taking a FTV service...

## Current penetration (2013, end year, primary sets, m)




*Source: Mediatique*
**Assumes that 20% of BT/TalkTalk subscribers take a basic-pay package (in addition to enablement pay functionality) and 10% take a premium-pay package. 65% of Sky subscribers are assumed to take a premium service; 30% of Virgin subscribers assumed to take a premium service. DTT homes comprise all Freeview homes, connected TVs, platform-connected homes, and those pay homes that take services from BT and TalkTalk*

1. Introduction

2. **The battleground for FTV TV**
   - Current dynamics in the platform market
   - **Strategies of the major stakeholders**
   - The challenges facing FTV TV

3. The role of IPTV in international territories

4. The transition towards DVB-T2 standards in the UK
   - The role of T2 in the platform market
   - Drivers of transition towards DVB-T2

5. The evolution of the platform market to 2024

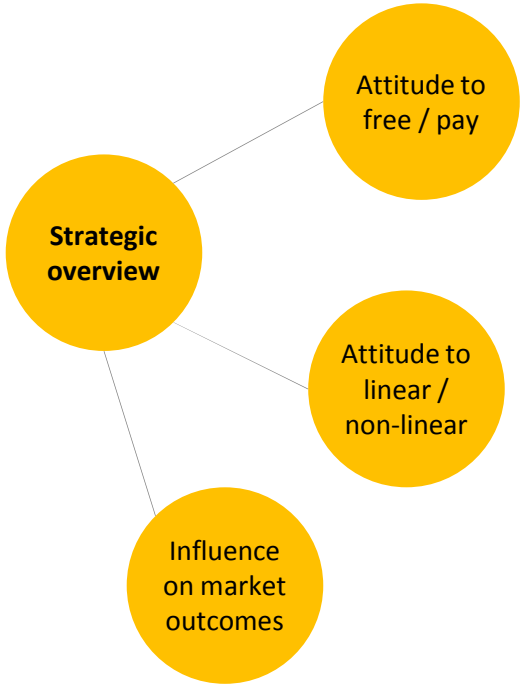
6. Appendices
   - A framework for considering the strategic incentives of multiplex operators towards a T2 transition
   - Profiles of selected markets

# In this section, we explore the strategies of key stakeholders in FTV and pay-TV markets...

- We have considered how the strategies of the key players in the value chain might affect the evolution of television models in the future
- We have looked at a number of categories of stakeholder, and examined their strategies and objectives on four bases – as set out opposite
- We have then contrasted the interests and priorities of the stakeholders to inform our assessment of where key battlegrounds might emerge over time

## Stakeholder categories and areas of analysis

- **Platform operators**
- **PSB channels**
- **PSB joint ventures**
- **Other channel groups**
- **Content owners**
- **New entrants**
- **Manufacturers**
- **Service providers**
- **Advertisers**



# Sky's ability to grow its platform in future will require a willingness to sacrifice margin and even ARPU...

- Having reached its goal of 10m homes, Sky is aiming to further segment its service proposition to suit non-traditional customers (probably at the expense of ARPU and certainly at the expense of margin)

- Its necessary target is the non-premium customer, including up-graders from Freeview (favouring "clear blue water" between free and pay)

- Sky's immediate focus is to:
  - Connect more homes to late-generation IP-connectable, high memory, HD-enabled STBs ("own all devices in the home and on the move")
  - Enhance multi-room through broader definitions (to include Sky Go, multiple devices); this is behind the transition from Sky Go basic to Sky Go Extra ("free" for those already paying for multi-room)
  - Enhance Wi-Fi hot spot offering – and to help enable downloads for future planned viewing
  - Re-package SVOD and PPV products – for instance, free "view" periods for movies (10 minutes and then invitation to pay); more content available through incremental rights deals particularly with US studios (and notably with Channel 4), maintaining dominance in first pay window for films and in live premium sport

- Off-platform, Sky's key strategy relates to Now TV, seen internally as a response to the potential threat from Netflix, Amazon, Google and Apple
  - Its Roku STB (subsidised) offering as a Smart TV play is a step toward extending its distribution footprint to those homes unwilling to have a satellite dish
  - ...this supplements Now TV via PCs, mobile Apps for tablets, smartphones and on YouView

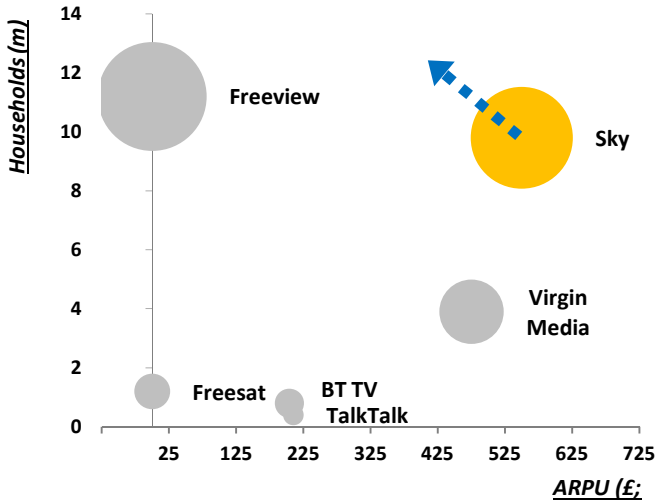
## The strategic roadmap for Sky

- Sky has addressed the marked slow down in recent quarters in gross and net additions by focussing on APRU-protecting service upgrades (including Sky On Demand innovations, richer HD offering) and on re-positioning prices and packages
- The key change has been to re-configure Sky Entertainment Extra + (now the "Family" bundle) as a new "Big Basic" offering cost-effective access to basic premium HD and additional on demand content (including box sets)
- Future plans include further basic-tier segmentation (with a possible change to entry-level package and pricing), more aggressive telephony prices and targeting of higher-ARPU homes with Sky Fibre product
- Other innovations are likely on Sky Store (with the prospect of third-party sales) and Sky Go (including further integration with Sky Cloud network)
- B2B innovations including ad insertion via Sky Adsmart

## Strategic trajectory for Sky

*Sky will aim to get bigger and is willing to sacrifice margin and ultimately even ARPU to secure subscriber growth*

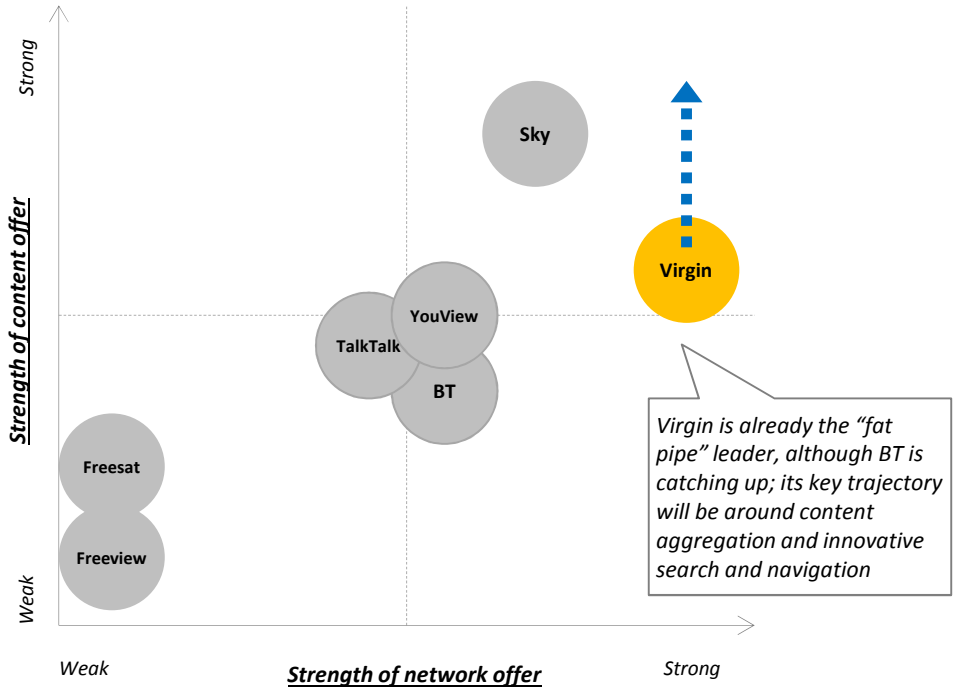
*Nonetheless, its prospective growth rates are limited compared to its experience in the past five years and the competitive challenges are greater*



# Virgin faces a classic market segment “squeeze”, with low-APRU competition from an upgraded Freeview base – increasingly connected – and a market leader at the premium end of pay TV, with a lock on critical content...

- Virgin has long incentivised customers to take bundled solutions, although broadband/telephony subscriptions with no pay TV are still available
- ...its focus will continue to be on marketing superfast cable-delivered broadband and further evolving its TV product to emphasise search functionality and linear/non-linear integration
- Under new owners Liberty, the emphasis will be aggregation, personalisation and portability, deploying TiVo/Horizon functionality, coupled with virtual quad play and all-devices access via TV Everywhere (although parent company Liberty recently confirmed its acquisition with Discovery of All3Media, which may signal a further shift in content strategy)
- ARPU gains (moving customers up the premium tree) are a chief focus; as no more homes will be passed, Virgin will have to focus on conversion of customer in existing provisioned areas and seeking maximum returns from each converted home
- Virgin will be squeezed from both sides (it needs to protect against threat of upgraded Freeview/Youview even as it matches premium offering from Sky – the latter at high cost given it must trade away margin for wholesale access)
- Its key strategic initiatives include:
  - Enhancing attractiveness of premium tiers through new content deals (BT Sport, Netflix)
  - Securing long-term wholesale access to Sky content
  - Campaigning to lower affiliate fees payable to “second-tier” suppliers
  - Converting entire base to TiVo/Horizon

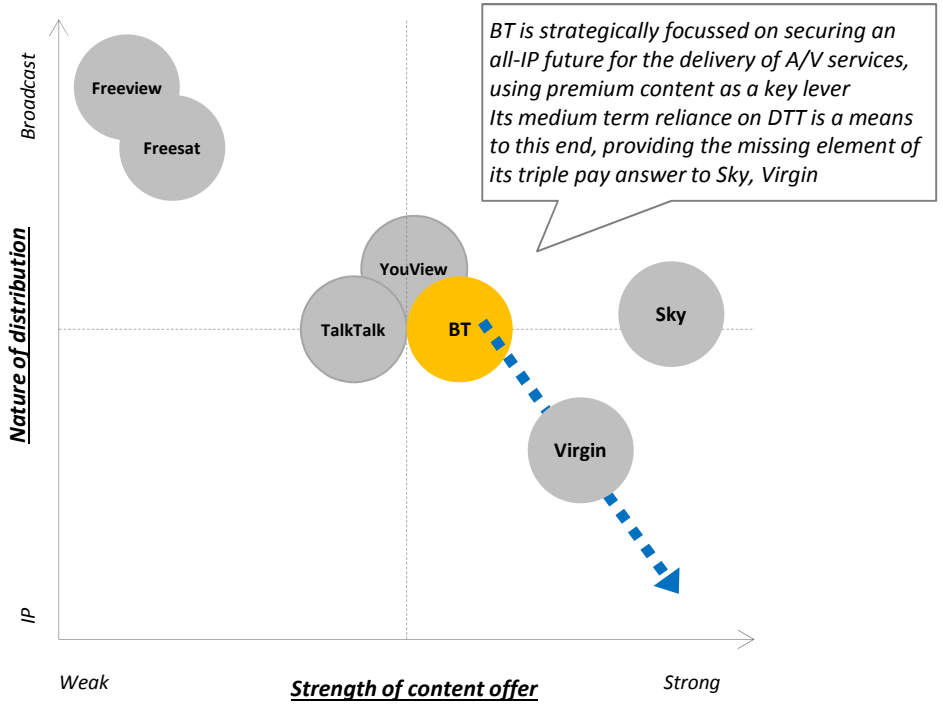
## The strategic roadmap for Virgin



# While DTT (via YouView) provides a medium-term point of market entry for BT, the end game is an all-IP future where the BT network and its delivery capabilities secure high-margin returns

- The central thrust of BT's retail strategy has been to provide an A/V element to its triple-play bundling strategy (through, effectively, the BT Sports proposition, legacy BT Vision deals, IP-delivered pay channels) and DTT foundation
- ...this is aimed at protecting the broadband base – particularly in Sky homes – and taking as many "greenfield" homes as possible against key competitors Sky, TalkTalk and Virgin, all of which offer competitive triple-play alternatives
- While DTT (via YouView) is critical today, it is in BT's longer-term interest to ensure that the IP network can fully substitute for DTT (in this, its interests are not necessarily aligned with those of other YouView shareholders)
- Over the medium term, the aim will be to:
  - Efficiently complete the roll out of multicast fibre-to-the-home
  - Enhance content proposition beyond sport, film VOD and selected pay TV channels
  - Maintain wholesale margins for access to its broadband network and encourage content owners to use BT as the key point of access to end users (including via its off-loading mobile 4G WiFi proposition)
- Depending on the future evolution of YouView, BT would expect to offer both pay and FTV channels over IP, and to supplement this with on demand services via a consumer-friendly UI/UX that generates lucrative consumer revenues and permits returns to be earned on user data
- In the short to medium term, it hopes to be able to gain secure access to Sky Sports (it has already secured access to Sky Movies linear and On Demand); its expectation, however, is that the advantages of traditional pay TV levers will reduce and that BT's core broadband network will emerge as the key driver of value

## The strategic roadmap for BT

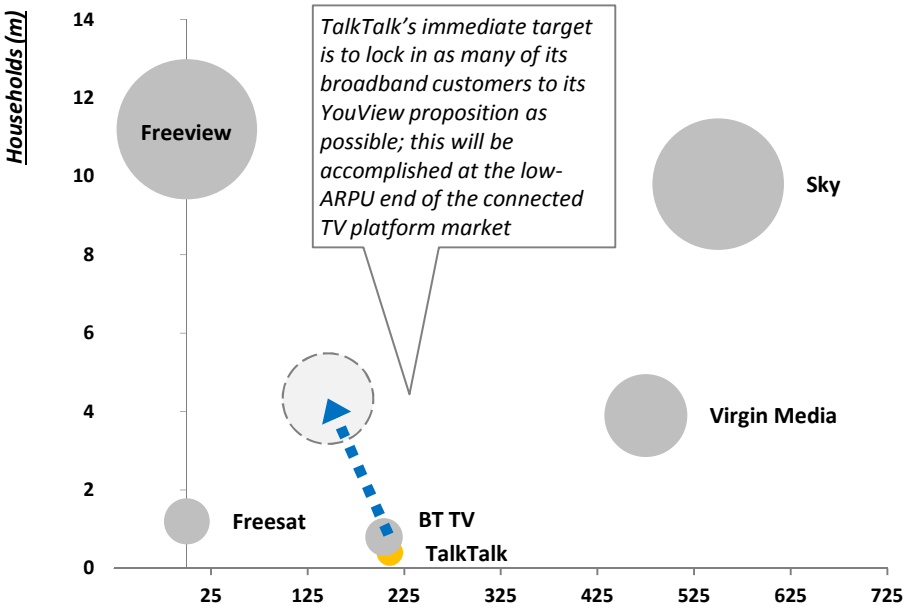


# TalkTalk's current lead in the YouView take-up race reflects both its early start and its entry-level pricing and no-contract incremental content offering; it aims to be the "value" connected TV proposition...

TalkTalk

- TalkTalk is clearly targeting the budget end of the YouView/DTT 2.0 market, through an entry-level service of snacking, VOD, and month-to-month access to traditional pay-TV channels (including Sky basic and premium channels)
- Its critical objective is to retain broadband customers and to offer a strong triple-play service to balance competitive threat from BT (within YouView/Freeview) and from Sky (especially for those Sky customers still taking a broadband service from TalkTalk)
- Like BT, it sees DTT as a interim platform play – but wants to encourage over time the use by "Freeview" homes of TalkTalk IP services
- Unlike BT, TalkTalk has not elected to take any content bets, but rather to operate as a pure aggregation play – enabling its customers to use the PSB players, Amazon, pay-as-you-go services for film and VOD – in return for incremental revenues for quality of service and functionality
  - It has benefited from the clear competitive tensions between Sky and BT, securing access to a complete range of (SD) content from Sky (basic tier and sports/premium) - this compares to BT's Sky offering of just Sky Movies to date
- Working with BT within YouView, TalkTalk is keen to convince other shareholders to accept an early move to add PSB/FTV services to IP multicast delivery, and to launch when appropriate an all-IP version of YouView
- TalkTalk is happy to be default offerer of entry-level YouView; e.g., of those who might churn from BT YouView

## The strategic roadmap for TalkTalk




*"We added more TV numbers in the last two quarters than Sky, BT and Virgin put together because we are targeting a new market of people who have not paid for TV before"*
***Dido Harding, interview with FT – October 2014***

# The public service broadcasters work together within two entities linked to the FTV market, both of which face strategic challenges and uncertainties

## Strategic objectives for PSB joint-ventures

**Freeview**

- In its purest form, Freeview (owned by the PSBs, Arqiva and – for historical reasons – Sky) has always been by definition a free platform, with a stable of high-quality free-to-air channels available without a subscription
- But the platform has acted (and continues to act) as a foundation for multiple pay and enablement pay services
  - Linear-pay channels and on-demand services were available for a subscription from Top-Up TV until its closure in 2013
  - BT TV launched subscription services using DTT capacity (including premium sport)
  - YouView – via TalkTalk and BT – now offers subscription packages using Freeview as the foundational broadcast base
  - Smart TVs have DTT tuners and Freeview kitemarks, offering on-demand services over the top
- Having contributed to the securing of DSO, the platform is now defaulting to a role as the "new analogue": as a horizontal market platform (via Samsung, et al.), upgrades have been patchy and largely uncoordinated (e.g., PVR, IP connectivity) with no clear road map other than the PSB-led HD innovation
- For some years, the plan had been to cede the upgrade role to YouView (see overleaf)

**Freesat**

- Freesat is a joint-venture between the BBC and ITV, and acts as a free alternative to Sky's subscription satellite services
- Its initial rationale was to ensure that homes in areas where DTT was sub-optimal during DSO would have options other than to subscribe to TV platform for access to digital TV; it also served as a way of retaining viewers to PSB services via satellite in the event that households churned off Sky Digital
- While it has seen some innovation in the horizontal market (via IP-DSAT connectivity and the launch of compatible PVRs), there has been no co-ordinated effort by its shareholders (or permission from the BBC Trust) to permit it to innovate (for example, through the launch of pay services)
- The future of Freesat may in the end be determined by developments around it, and in particular by decisions taken by PSBs within the Freeview and YouView shareholder groups, where fundamental discussions on the future upgrade path for FTV TV continue

# YouView has emerged as a key element of the efforts by ISPs to offer TV services as part of their triple-play targeting of low to mid ARPU homes

- The most complicated of the key platforms in the UK is the newest entrant: YouView, given its shareholding structure (equally owned by all the PSBs plus Arqiva, BT and TalkTalk), funding model and the strategic direction in which it is moving – effectively targeting on behalf of its ISP sponsors the mid ARPU gap between free and basic tier pay TV

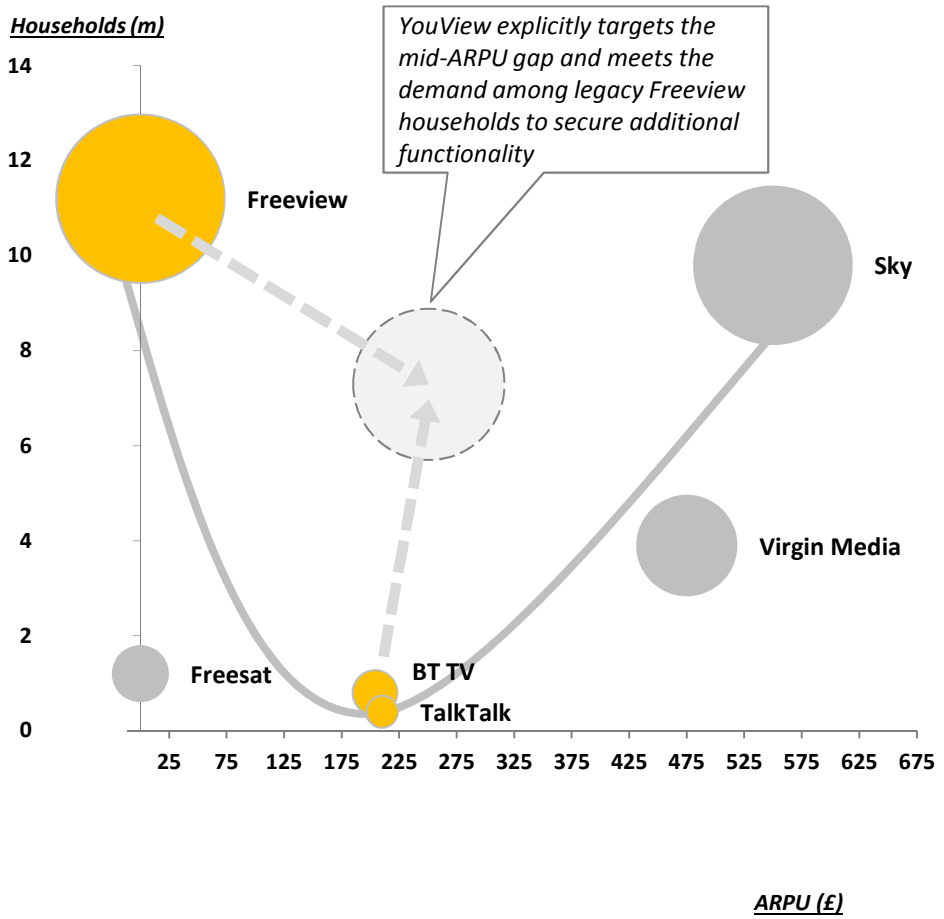
- It was conceived initially by the BBC as the upgrade path toward connected TVs for the Freeview base, and in particular an "open and free" way for consumers to continue to have access to PSB services but to be able to benefit from the control and choice offered by IP connectivity

  – For example, it was assumed that significant numbers of YouView users would purchase an STB in the retail market for a one-off cost (on a model similar to Freeview)
  – In practice, nearly all YouView homes subscribe to either to TalkTalk or BT in return for subsidised equipment and at least a basic package of A/V content reliably delivered to the home

- YouView shareholders recently completed a renewal of their agreement: these discussions revealed strategic fault lines, principally between ISPs and PSBs/Arqiva; under the new terms, the PSBs/Arqiva are reducing their funding commitments (although not their shareholdings)

- Now under development is a roadmap to manage future iterations of YouView; conversely, the PSB shareholders (principally the BBC and Arqiva) are discussing the re-deployment of the Freeview brand as the horizontal route to connectivity, leaving YouView as an ISP-linked proposition

## Market position of YouView

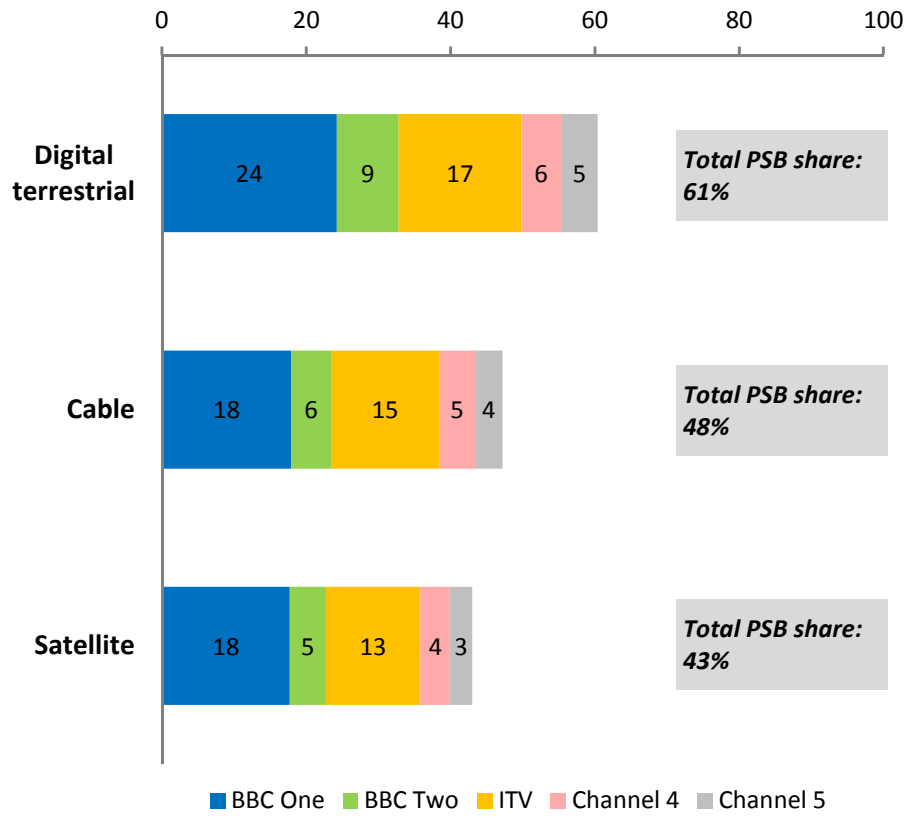



*Source: Mediatique*
*ARPU relates to all services provided across the subscriber base*

# The interests of PSBs are broadly aligned around a preference for free platforms over pay, given the higher shares they enjoy in Freeview compared to Sky and Virgin...

- The interests of the PSBs are commonly rooted in promoting free-to-air platforms at the expense of pay
  - PSB-licensed channels (including all the BBC's services), for example, must be freely and universally available, and are ensured "appropriate prominence" on TV platforms in return for meeting PSB obligations on availability and content investment
  - The viewing shares of the PSBs are higher on DTT compared to cable or satellite, which explains their preference for an outperformance of DTT (largely a FTV platform) at the expense of cable/satellite (both pay platforms)
- The commercial PSBs have been willing to dilute their preference for free platforms, and thereby foregoing advertising revenues, provided they can secure compensating pay revenues from platform operators
  - Channel 4, for example, initially distributed E4, Film4 and Channel 4HD on a pay basis (although it later migrated to an ad-funded model)
  - ITV and Channel 4 both earn carriage fees from Sky/Virgin in exchange for putting certain HD variants behind a pay wall (and ITV has made a new channel, ITV Encore, available exclusively on Sky for an initial period from mid June 2014)
- However, all PSBs (the BBC and the commercial PSBs) are to varying degrees concerned about the threat of disintermediation, particularly in an all-IP future where appropriate prominence is harder to secure, search and navigation functionality does not necessarily favour PSB content and competition for viewing is greater

**Viewing shares of the PSBs, by platform (2013, year-to-date)**




*Source: Mediatique*
*PSB shares exclude digital extension channels, but include HD and +1 services*
*Share of viewing figures relate to individuals (aged 4+)*

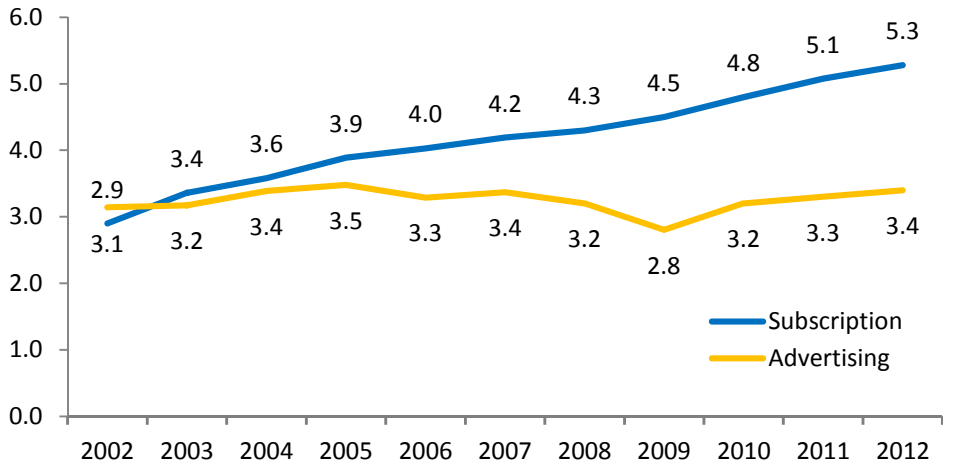
## However, there are some divergences of view within the PSB camp, and these are set to intensify over time as the market evolves (as has already become clear in the new YouView shareholders agreement...)

| Strategic objectives for public service broadcasters | | Commitment to free |
|---|---|---|
| **BBC** | ▪ The BBC's UK services must be freely and universally available on FTV and pay platforms<br>▪ The BBC's funding mechanism prevents the BBC from charging UK consumers for its principal services in the UK<br>▪ At the same time, the BBC is committed to addressing licence fee payers on multiple platforms and in multiple ways, and has been a pioneer with regard to HD, VOD and on demand<br>▪ It is seeking to balance support for YouView and Freeview for the upgrade path toward connected TVs |  |
| **ITV** | ▪ ITV's business model is rooted in delivering mass-market audiences to its advertisers, with its channels performing best on FTV platforms<br>▪ This view is entrenched by ITV's ownership of SDN, the business model of which is based on the sale of DTT capacity<br>▪ ITV's attitude towards FTV has been weakened by its strategic objective to diversify the business model away from a primary reliance on advertising – this explains ITV's recent deals with Sky and Virgin to secure carriage fees in return for exclusive pay access to its HD multi-channel variants and ITV Encore and its launch of various micro pay propositions within ITV Player<br>▪ In initial discussions around the future of YouView, ITV had been supportive of the efforts to create a YouView proposition that is more likely to get mass-market traction<br>▪ ITV also sees connected TVs as a way of increasing pay opportunities, so is less concerned about YouView's emergence as a enablement pay proposition (although would be concerned about an acceleration toward the all-IP future favoured by ISPs) |  |
| **Channel 4** | ▪ Channel 4 is equally focussed on the FTV market, but has made a number of moves in recent months to diversify its revenue model, particularly around new advertising propositions related to capturing and monetising user data<br>▪ It is the most vocal in the PSB camp around the attractions of connected TVs and other devices (it has launched a companion screen App for use alongside Channel 4 linear services)<br>▪ It has been seeking to ensure that the commitment of BT and TalkTalk to promoting the next generation of YouView promotes the ability of content suppliers to extract data and to insert advertising on a dynamic basis |  |
| **Channel 5** | ▪ Channel 5, the smallest PSB , is primarily focussed on its FTV channels business – although new owners Viacom may have different views |  |

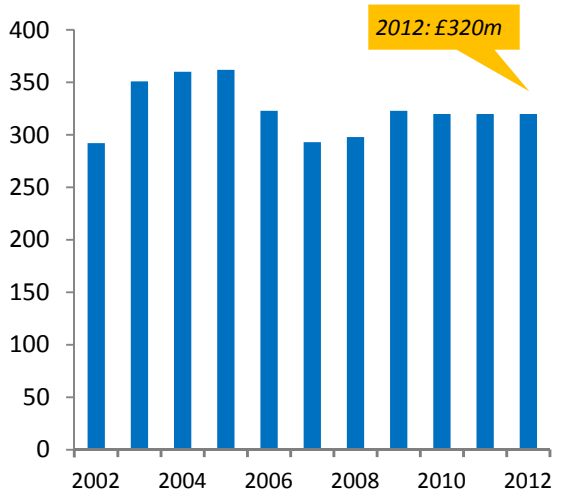
# Outside the PSB group of channel operators, the attitudes toward pay versus FTV and the future evolution of distribution markets are relatively consistent, and rooted in straightforward commercial calculation

- The availability of non-PSB channels on FTV platforms reflects the relative underlying economics of FTV vs pay distribution
- Historically, multi-channel operators (e.g., Discovery, Viacom) launched channels on pay platforms in return for carriage fees from pay-TV operators – reflecting the lack of capacity on analogue terrestrial platforms and the willingness of Sky to pay for quality channels as it sought to grow its subscriber base (these payments were effectively compensation for foregone advertising)
- As FTV platforms digitised and terrestrial capacity became available, FTV distribution became a viable alternative, with advertising revenues relatively robust in the late 1990s and early 2000s – this was illustrated best by the migration of E4 and Film4 from a pay-model to FTV in 2004
- The current context is more nuanced however;
  - The advertising market has faced many structural and cyclical challenges with limited growth in real terms since 2005
  - Carriage fees paid by platform operators to channel groups have also faced pressures in the face of capital expenditure and premium rights inflation (see Sky payments opposite)
- ...as a result, many channel groups – including UKTV, Discovery and Viacom – have followed hybrid strategies, with some channels behind a pay wall (e.g., GOLD, Alibi) and others within the same group available on a FTV basis (e.g., Dave, Yesterday and Viacom's newly acquired Channel 5); these players have also agreed extensive digital rights deals with platform operators, providing non-linear rights behind a pay wall (and via Now TV)
- The ultimate decision to choose FTV vs pay distribution is based on the relative return from revenues set against the cost of distribution, see overleaf

## Key sources of channel revenue: advertising vs subscription (£bn)




## Sky payments to third-party channels (£m)



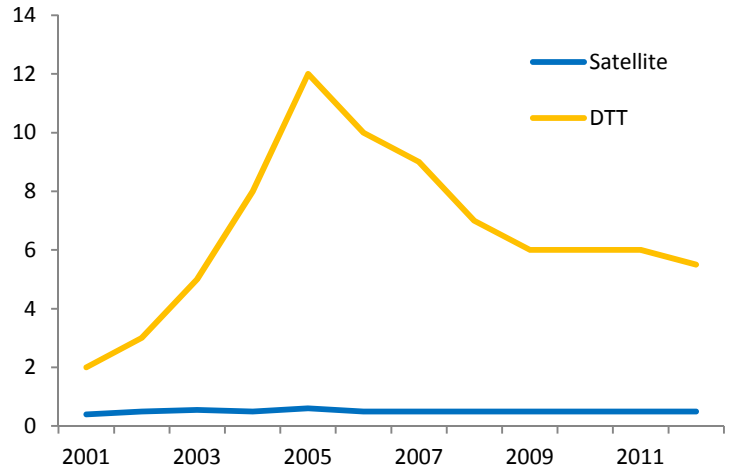

- *We estimate that Sky's payments to third-party channels rose from £251m in 2001 to a high of £362m in 2005, before declining again to £320m by 2012*
- *This latter trend reflects Sky's ability to claw back some value that had been bleeding to third party channels, which benefitted from Sky's fast subscriber growth following the launch of Sky Digital in 1998*
- *We estimate that nearly 75% of third-party channel fees is paid to the top six suppliers (UKTV, Discovery, Viacom, Disney, NBC-U and Turner)*

*Source: Mediatique, Sky*

# The appeal of an FTV model for non-PSB channels has varied predictably in line with trends around subscription and advertising revenue; costs for DTT capacity have altered in response

- The economics of FTV have been critically dependent on the relative costs of securing DTT capacity, which have experienced periods of significant inflation from the early days of Freeview, followed by stability as the DTT platform matured
- This compares with the relatively stable and cheaper costs of securing satellite distribution, on which to launch and continue to distribute pay-TV channels (current costs of a standard video stream on DSAT is roughly £600k per year, compared to £5-6m for a video stream on a commercial DTT multiplex, on Mediatique's estimates); satellite capacity also enables FTV distribution via Freesat, although FTV economics are difficult to sustain without DTT distribution given the relative scale of platform penetration – the differential has been sustained by the relative outperformance of viewing on DTT
- The viability of FTV distribution on Freeview/Freesat is also challenged by the prospect of delivery over IP and/or more radical evolution in consumer behaviour (e.g., greater consumption of non-linear at the expense of linear). However, as we set out overleaf and in section 5, we are sceptical that IP distribution is a viable alternative to broadcast for mass-market channels seeking live national distribution, certainly over the next 10 years; live TV will remain robust in that time frame
- As a result, we expect the balance of FTV/pay-TV channels to remain relatively constant, driven by the relative cost/return of securing distribution on FTV platforms and the ability to secure advertising revenues from linear delivery
- Ultimately the scale and quality of the FTV line-up will depend on the nature of market outcomes, as the strategies of major non-PSB channel operators are all rooted in securing the greatest return – as a result, any wholesale shift towards pay will challenge the business models of FTV channels and may cause them to seek alternative models in pay (including pay over linear IP)
- Of course, this is a circular dynamic as any significant migration of existing FTV channels to pay would likely diminish the competitiveness and scale of FTV platforms, potentially leading to further migration of FTV channels to pay

**Cost of channel distribution, by platform (£m, per yr)**




Satellite distribution reaches 10m Sky homes and c.1.6m Freesat homes (and secures delivery to cable head-ends)

DTT distribution reaches 11m FTV homes (Freeview, connected TVs) – and pay homes via BT and TalkTalk

*Source: Mediatique*
*All costs refer to 24/7 national SD distribution. Satellite costs include transponder capacity, play-out costs and platform contribution charges. DTT costs are based on average prices paid in each year on Arqiva and SDN*

# Movie and sports rights holders have long had a preference for pay revenues, generated by aggregators able to afford premium rates in exchange for exclusivity; TV producers have a more balanced FTV vs pay outlook

## Strategic objectives for content owners

| | |
|---|---|
| **Film studios** | ▪ The prospect for content owners to bypass intermediaries is not a new one: Hollywood studios have energetically launched pay TV channels and more recently invested in VOD portals (e.g., Hulu)<br>▪ Generally, studios have been careful to manage windows so as to maximise/optimise revenues from a single piece of content across its life-cycle from theatrical to pay to terrestrial, alongside SVOD and DTO windows<br>▪ In general, the studios have favoured pay models over free given that these contribute greater margins – in the UK, the yearly contribution by BSkyB to Hollywood films (c£350m) far outweighs all income from DTO/DTR and AVOD and from FTV broadcasters in the terrestrial window<br>▪ These exclusive pay deals may reduce in value in the event that disintermediation accelerates (e.g., Netflix take-up leads to cord cutting by pay TV subscribers); however the balance is unlikely to shift away from pay (we look at the role of content supply as lever of future change in later sections of this report) |
| **Premium sports rights owners** | ▪ Some sports rights holders have traditionally looked to balance the sale of picture rights to FTV and pay broadcasters; this has partly reflected legislation ("listed events") but also serves to ensure enduring popularity of key sports fixtures which underpins the value of associated rights<br>▪ However, the key determinant of value has been exclusivity: as an example, the FA continues to demonstrate that it is unconcerned with whether live rights sit behind a pay wall or are universally available (subject to the limits of certain Listed football rights); as a result, FAPL rights are auctioned to the highest bidder, the economics of which continue to favour pay-TV operators<br>▪ The most recent auction of domestic live rights to FAPL secured £3bn over 3 years from Sky and BT |
| **Independent producers** | ▪ Indies have traditionally had close relationships with the PSBs, not least as they benefit from regulatory protection – this includes quotas (ensuring a minimum number of hours of indie content is broadcast) and terms of trade (which ensures indies have ultimate ownership of content rights after the broadcast window)<br>▪ Commissions from TV channels give producers a valuable shop window that serves to promote programme brands, enabling producers to secure value in secondary windows (including on-demand, international sales and format rights); the scale of FTV distribution, coupled with the terms of trade protections, arguably provides a greater benefit to indies than pay-TV distribution<br>▪ Of course, many small independents are willing to forego rights protection in order to secure commissions from pay-TV operators, many of which continue to increase their commissioning budgets – including Sky, UKTV and Discovery<br>▪ There is also a small albeit growing market for VOD (including SVOD and DTO) for content created and exploited by independents<br>▪ The total spend on primary commissions in 2012 was approximately £1.5bn, of which more than 85% came from the PSBs for FTV broadcast |

# In addition to traditional "channel" operators, the UK like other media markets has seen the launch of a number of truly "new" A/V entrants, enabled by changes in distribution technology and consumer behaviour

| | SVOD | | Electronic sell-through |
|---|---|---|---|
| | NETFLIX | amazon Prime instant video | blinkbox |
| **Brand strategy** | ▪ Brands itself as an Internet television network and competitor to traditional broadcast and cable channels<br>▪ "Watch Instantly" streaming video service is the company's strategic focus domestically and abroad<br>▪ Strong proponent of the non-linear IP format, through its recommendation algorithms, and simultaneous release of original TV episodes | ▪ Launched in 2007 as LOVEFiLM, the UK's first legal film download service, and acquired by Amazon in 2011<br>▪ Amazon's global EST/SVOD services were rebranded as Amazon Prime Instant Video in February 2014 to match its US operations<br>▪ Under the rebrand, customers get free one-day delivery on purchases from the online retailer and access to half a million Kindle ebooks, in addition to LOVEFiLM's library of films and TV programmes | ▪ Subsidiary of Tesco, UK's largest retailer<br>▪ EST service leverages Tesco's massive market presence and marketing clout, with in-store promotions, outdoor, and radio<br>▪ Latest campaign built around the 'coming sooner' message, promoting its library of new release titles against Amazon and Netflix |
| **Content creation strategy** | ▪ Produces original TV content such as *House of Cards*, *Arrested Development*, and *Orange Is The New Black*<br>▪ Tracks user viewing and rating data to estimate the potential audience for properties in development | ▪ Amazon Studios develops comics, movies, and TV shows from online submissions and crowd-sourced feedback<br>▪ Streams TV pilots and lets viewers vote to decide which shows continue production | ▪ No involvement currently |
| **Content acquisition strategy** | ▪ Acquires second pay TV window rights to film and TV titles<br>▪ Output deals with DreamWorks Animation, Relativity Media, FilmDistrict, and Open Road Films | ▪ Acquires second pay TV window rights to film and TV titles<br>▪ Exclusive first pay window deals with StudioCanal and Entertainment One<br>▪ Acquires a larger library of film and TV titles for exploitation through its DVD by mail service in the rental window | ▪ Acquires rental/PPV window rights to film and TV titles (around 2 months ahead of the first pay TV window and 4-6 months after theatrical)<br>▪ Customers have the option to buy or rent at corresponding price points<br>▪ Licenses the rights to an extensive library of older films |
| **Distribution (Device/Platform) strategy** | ▪ Penetration on primary set via video game consoles, Smart TVs/receivers, dedicated STBs such as Roku<br>▪ Available to Virgin TV subscribers with a TiVo STB<br>▪ Extensive mobile support with Netflix.com web platform, Facebook integration, and apps for tablet and mobile devices | ▪ Native support on Amazon's Kindle Fire HD tablets<br>▪ Direct-to-TV integration on Sony, Samsung, and LG connected TVs<br>▪ Apps for video games consoles, tablets and mobile devices<br>▪ Streaming UI design shared with Amazon Instant Video | ▪ First website in the UK to offer streaming film content through the Sony Playstation 3<br>▪ Direct-to-TV integration on Samsung connected TVs<br>▪ Partnership with Google to distribute its library of older titles and cult classics through YouTube Movies, allowing UK users to watch them for free |

# Nascent but potentially important are the new entrants seeking to move from search/online/social to directly target the audio-visual market

| | EST/FVOD/Smart TV | | Social TV |
|---|---|---|---|
| | YouTube, Google TV, Google play | tv, iTunes | facebook |
| **Brand strategy** | ▪ Rebranding of YouTube as a destination for original content and an alternative to other free to view propositions<br>▪ Google Play store offers premium film and TV content for download through its electronic sell through service<br>▪ "One Channel" design meant to bring a unified look across all devices | ▪ Vertically integrated consumer electronics business<br>▪ Apple's global brand includes digital distribution of film and TV through its iTunes store<br>▪ À la carte pricing promotes non-linear viewing and unbundling of content | ▪ Envisions media consumption as a social experience<br>▪ Vying to become the "social TV" destination by promoting social engagement opportunities around television to increase traffic on Facebook |
| **Content creation strategy** | ▪ Promotes professional content to expand sellable library and increase advertising yield<br>▪ Partnership Program offers users a revenue sharing opportunity<br>▪ Finances YouTube's Original Channels initiative (recouped from advertising revenue)<br>▪ Invested US$35m in multichannel network | ▪ Arms length production of media content<br>▪ Editorialises and curates content for the end-user<br>▪ Agency pricing model of the app store affords developers control over pricing and revenue recognition | ▪ Promotes content discovery through friends and connections |
| **Content acquisition strategy** | ▪ Content on YouTube aggregated from amateur users, production companies, and rights holders<br>▪ Content ID technology identifies infringing works<br>▪ AdSense generates revenue from ad placements<br>▪ Acquires rental/PPV window rights to film and TV titles for exploitation through Google Play store's EST services | ▪ Acquires rental/PPV window rights to film and TV titles for exploitation through the iTunes store's EST service<br>▪ TV episodes, films, and books use Apple's DRM system, FairPlay | ▪ Facebook App Center distributes third party applications to enable social TV experience<br>▪ Online portal for managing ad campaigns, measuring performance, and developing marketing strategies<br>▪ Involved in marketing campaigns for *True Blood*, *American Idol*, and *Top Gear* |
| **Distribution (Device/Platform) strategy** | ▪ Google Nexus tablets and mobile devices, Chromebooks, hardware and accessories with native YouTube and Google Play integration<br>▪ Google TV and Chromecast HDMI Wi-Fi adapter incorporate Android OS and Chrome browser to connect TV | ▪ iTunes platform installed on all Apple computers, tablets, smart phones, and compatible with other devices and operating systems<br>▪ Apple TV plays videos from iTunes and Netflix, music and photos from iCloud, and uses AirPlay to stream from iOS devices | ▪ Ubiquitous mobile platform<br>▪ Netflix integration allows users to create and share playlists |

# The strategic interests of these new entrants across the FTV and pay segments vary, but most new entrants seek consumer payment rather than a share of advertising (Google, Facebook are significant exceptions)

## Free and pay interests for new entrants

***Ad-supported Free Video on Demand (FVOD)***
Users pay nothing and the service owner(s) collect revenue from ad placements

***Subscription Video On Demand (SVOD)***
Users pay a monthly fee for unlimited access to a library of content. Typically, content is not downloadable, and is only viewable through the service's streaming platform or other authorised applications

***Electronic Sell-Through (EST)***
Users pay a one-time fee to download a media file for permanent or temporary storage on the user's hard drive. Subject to digital rights management conditions, files may be non-transferrable, expire or otherwise become unusable after a certain period of time, and may not be compatible with other platforms. EST includes download-to-own and download-to-rent services


**Hulu is a joint venture of NBC-Universal (Comcast), Fox Broadcasting (21st Century Fox) and Disney-ABC (Walt Disney); it is currently only available in the US and Japan, but is included here to illustrate the full range of Free-Pay OTT propositions*

# Legacy platform operators are offering a number of innovations that appear directly to address the propositions from SVOD OTT players – and, in the case of Virgin and Netflix, even co-operating...

## Now TV

- Now TV is Sky's answer to the competitive threat from SVOD streaming services such as Netflix; it also operates as a hedge against the growth of OTT competition to Sky generally, and gives the company access to lower-ARPU homes unwilling to pay a full Sky subscription; its USP is access to movies before they appear on Netflix/Amazon (although the latter feature significant TV content not currently available via Now TV) and to offer a small pay TV line-up
- It currently features Movies (30-day free trial and then £8.99 per month), the Sky Sports Day Pass (£9.99 for 24 hours), a Sky TV pack at £4.99 and a handful of other services (including iPlayer, 4oD and Demand Five, with ITV Player coming soon)
- Now TV is available on portable devices and via YouView; however, the live channels are not available for viewing via YouView (and the PSB players are offered separately and directly on YouView by the broadcasters themselves)
- The extension of the content suite parallels Sky's upgrade of its own connected TV service, Sky On Demand, which already features access to catch-up and archive content from its own and affiliate channels; Sky has also secured a wider range of digital rights permitting it to distribute content via its Sky Go proposition (both for truly mobile access via tablets and smartphones but more commonly for download at home for future viewing for those paying for Sky Go Extra)
- The Now STB is a white label Roku service, subsidised to £10 one-off cost (Roky boxes are currently priced at £50 online); registration via the Now TV website is necessary, and customers need to take at least the 30-day free trial in order for the service to launch; thereafter, even upon cancellation, the STB will work to deliver the iPlayer service

## TiVo

- TiVo (costing £5 incremental per month) is Virgin's answer to the increasing connectability, accessibility and functionality of Sky's HD STBs and Sky Go, and is enabling Virgin to co-operate with SVOD streaming services in order to reduce the direct competition they otherwise represent
- TiVo acts as a PVR and app portal, hosting on-demand apps from all the PSBs and the relevant Sky On Demand channels that are available to the subscriber in their chosen TV tier. This includes Sky's own channels (except exclusive Sky Atlantic ) and third-party pay-TV channels (e.g., Discovery, MTV and UKTV)
- Virgin subscribers can stream up to 80 channels (pay and commercial PSBs) and over 2,500 hours of on-demand pay TV content on computers via Virgin TV Anywhere; the service is free with content differentiated by the subscriber's underlying TV package when viewed on a computer
- Homes paying for TiVo can also use the Virgin TV Anywhere live streaming service on iOS devices (as yet it is not compatible with Android, although this is likely to be remedied soon). However, the Anytime content suite is limited owing to digital rights restrictions: for example, the Sky channels (i.e., basic, sports and movies) are not available via streaming
- Netflix has recently been added to TiVo, enabling the service to be viewed as an 'all-in-one' platform, encompassing content from OTT providers alongside that which is provided by Virgin. Apps such as Youtube, Facebook and Spotify can also be downloaded to TiVo
- TiVo also acts as a recommendation service based on viewing history and 'likes', and users can search available content in a variety of ways (e.g., by actor, genre, title etc.). The box can be managed remotely via compatible devices, which can also act as a remote control

# Despite efforts by nearly all manufacturers to move up the A/V value chain, only a few integrated hardware / portal players, notably Samsung and Apple, have succeeded...

- The economics of hardware manufacturers are mixed, with TV manufacturers struggling to make money on the sale of increasingly sophisticated TV sets, whilst mobile/tablet manufactures (notably Apple and Samsung) continue to deliver strong margins
- Current weakness in TV sales (sets and STBs) obscures multi-year trends toward shorter replacement cycles
- All major manufacturers have sought to extend their operations up the value chain via content aggregation in an attempt to drive sales, cement prices and improve margins
- The interests of manufacturers within the free-pay matrix vary among the various players, as we set out opposite

## Strategic objectives for equipment manufacturers

| | |
|---|---|
| **TV manufacturers** | ▪ TV kit manufacturers have traditionally been ambivalent between free and pay, as their primary concern was to sell TV sets irrespective of how they were used<br>▪ TV replacement cycles have actually reduced in recent years, although fierce price competition has led to declining margins on TV sales. As TV set makers have moved upstream and launched their own content portals, they are now in direct competition with legacy platform operators<br>▪ The business model for connected TV is largely a FTV service (rooted in Freeview) alongside a discretionary pay on-demand element for movies and TV content – this reflects an implicit assumption among the TV manufacturers that they are unable to compete with traditional pay-TV operators |
| **Set-top box manufacturers** | ▪ Manufacturers of STBs have traditionally straddled both free and pay models, benefiting from significant take-up of Freeview boxes (low price, high volume, low margin) and take-up/advances in pay-TV which has often required box subsidised swap-outs (high-spec, high price, mid margin)<br>▪ STB manufacturers are facing challenges, however: including Sky's move to produce its hardware in-house (via the acquisition of Amstrad), Virgin's tie-up with TiVo, and the integration of digital tuners within TV sets – although the interests of STB producers are helped by the launch of open-source YouView boxes (particularly if these are de-specified) |
| **Mobile and tablet manufacturers** | ▪ The likes of Apple and Samsung continue to make healthy margins on the sale of mobile devices, including smartphones and tablets; as TV consumption habits continue to embrace out-of-home/mobile viewing, these players are increasingly becoming stakeholders within the TV arena<br>▪ In particular, they have been able to leverage the underlying subscription models of mobile networks, by launching app stores that are enabled by existing billing relationships<br>▪ In seeking to extend their business models to the TV arena, their interests are likely to best served by pay models, tapping consumer wallets, rather than via FTV propositions involving advertising |

# A number of companies supply services that support FTV and pay TV propositions; of these, one of the largest is Arqiva, the monopoly provider of broadcast transmission services in the UK

- There are a number of broadcast and A/V services companies whose interests along the continuum between FTV and pay may vary; these include, for example, satellite services companies such as Astra or Globecast, equipment maker Fujitsu, play-out specialists such as Red Bee (Atos) and Content Delivery Networks such as Akamai and Level 3
- In the context of the UK, a crucial player is Arqiva, which is the monopoly supplier of broadcast network access services and owner of the UK towers business for terrestrial broadcast (radio, TV) and a supplier of mobile network services
  - Its core business is regulated (through undertakings agreed when two formerly independent providers were allowed to merge)
  - Arqiva is a shareholder in Freeview and YouView, as well as one of the four Multiplex Operators with licences to lease DTT capacity in the UK (the other three are the BBC, Digital 3 and 4 and SDN)
  - Arqiva operates several businesses, including its core transmission services (network access and managed transmission services) and Muxco, the commercial operator of four multiplexes (two in SD and two – awarded on an interim basis – in DVB-T2 capable of HD); it also a radio multiplex operator and provides nearly all radio transmission services to commercial radio and to the BBC
  - Its overriding interests are related to FTV TV, and it has been a major investor in the digital switch-over and in industry groups such as Digital UK and DMOL (merged into one entity in early 2013)
  - It recently diversified into IPTV, with the acquisition of Connect TV

## Profile of Arqiva and key strategic objectives

| | |
|---|---|
| **Primary business** | ▪ Transco, responsible for providing transmission services across an extensive network of masts, towers and sub stations across the UK<br>▪ Monopoly supplier of such services to Freeview broadcasters the BBC, Channel 4, ITV and Channel 5<br>▪ Supplier of network radio services to the BBC and commercial radio (both analogue and DAB)<br>▪ Operator of two DTT multiplexes under licence from Ofcom (COM 5 and COM 6) and holders of interim licences for two additional multiplexes in DVB-T2, one of which launched earlier this year (2014) |
| **Secondary businesses** | ▪ Provides extensive network services to mobile operators, using its towers in the UK<br>▪ Provides a range of Government services, and recently won a major contract for smart metering<br>▪ Owners of Connect TV, which provides content suppliers direct access via IP to connected Freeview devices, launching from an EPG slot on Freeview (key clients include Racing UK and a range of foreign-language channels) |
| **Strategic objectives** | ▪ Arqiva's strategic objectives are to maximise DTT penetration, extend the life of the DTT network, encourage a managed transition to more efficient T2 standards over time<br>▪ While it is corporately indifferent to business models of tenants on its multiplexes and using its services, the vast majority of the channels it carries are funded through advertising; its interests are therefore aligned with FTV |

# Almost by definition, advertisers and their agencies favour robust FTV TV services, able to aggregate large audiences; they also seek more detailed data about consumers wherever they view/interact...

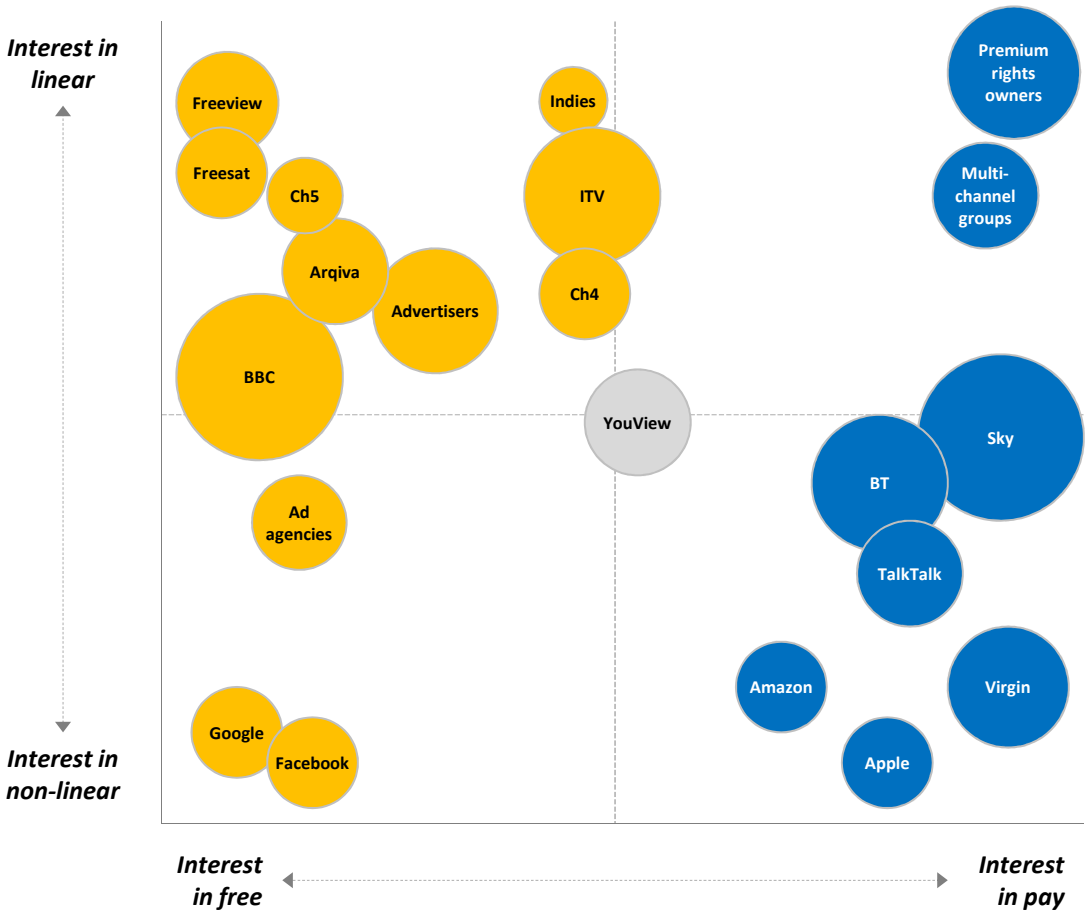
- The ultimate driver of advertising spend is the delivery of commercial impacts, and advertisers are generally concerned with the overall health of TV viewing and the scale of viewing to specific channels/programmes
- Indeed, advertisers can place inventory on both FTV channels (which are, by definition, available in all homes) and those that sit behind a pay-wall (with coverage determined by pay-TV penetration and packaging)
- As long as advertisers continue to value the delivery of large simultaneous audiences (see opposite), then FTV continues to be a viable model for channels
- Agencies have generally sought to increase their ability to address consumers on multiple platforms and to fashion interactive and responsive engagement with users on behalf of advertisers; they have worked increasingly with TV broadcasters in this regard
- As patterns of non-linear viewing and engagement evolve, and in particular as consumers spend more time on alternative platforms including tablets and smartphones, media owners are having to follow their viewers
- ...however, the linear TV market has remained remarkably robust, and significant amounts of viewing on alternative platforms is of content associated with legacy media owners, who often control non-linear inventory

## Strategic objectives for the advertising sector

| | |
|---|---|
| **Advertisers** | ▪ Many channels that sit behind a pay wall cater for specific audiences that are attractive to advertisers, and also reduce wastage – e.g., Sky Sports channels are very attractive to advertisers seeking male audiences<br>▪ However, viewing to "free" channels (in particular those that are distributed on all platforms) is typically greater, and the PSB channels in particular continue to deliver mass-market audiences that are unavailable to channels behind a pay wall<br>▪ ...indeed, free channels remain synonymous with greater reach and greater impact, and for that reason advertisers seeking mass-market audiences (e.g., FMCG or retail brands) will continue to favour free environments |
| **Advertising agencies** | ▪ The interests of agencies mirror those of their advertising clients in relation to free/pay channels<br>▪ A key divergence arises in relation to linear/non-linear choices – while large advertisers continue to favour linear advertising due to its reach/impact, media agencies typically secure far higher margins on non-linear inventory than on linear |

# We have compared the strategic interests of the key stakeholders in relation to linear/non-linear and free/pay outcomes...

## Comparison of strategic interests in the platform market




*Source: Mediatique*
*Size of bubble reflects degree of influence on market outcomes*

- Our comparison of strategic interests represents the default position of each stakeholder – in practice, these interests will shift as players evolve and respond to the actions of other players (and to consumer behaviour)
- We have also assessed the degree of influence on market outcomes from each stakeholder (illustrated by the size of bubble in the figure opposite). When acting alone, some stakeholders will have limited influence; however, such influence can be made more effective if combined with other stakeholders
- Once again, this approach illustrates the polarised nature of the platform market:
  - Some stakeholders have a significant interest in retaining the *status quo* (which confers a crucial role on FTV content/platforms)
  - Other players, including the majority of new entrants, are keen for an evolution towards a largely non-linear world – although one that allows a mix of free and pay models to emerge

1. Introduction

2. **The battleground for FTV TV**
   - Current dynamics in the platform market
   - Strategies of the major stakeholders
   - **The challenges facing FTV TV**

3. The role of IPTV in international territories

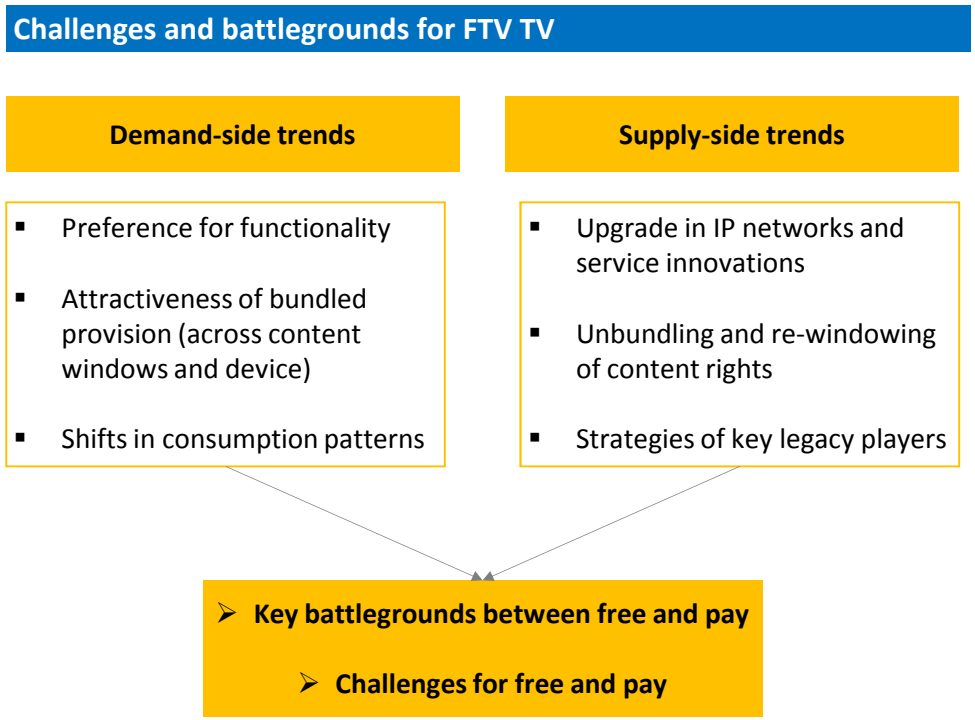
4. The transition towards DVB-T2 standards in the UK
   - The role of T2 in the platform market
   - Drivers of transition towards DVB-T2

5. The evolution of the platform market to 2024

6. Appendices
   - A framework for considering the strategic incentives of multiplex operators towards a T2 transition
   - Profiles of selected markets

## In this section, we have isolated the key battlegrounds among FTV and pay-TV operators over the next 10 years, including an assessment of the key challenges facing FTV delivery over that time...

- The shifting strategies among stakeholders highlight a number of battlegrounds in the platform market
- A post-switchover world has sustained/created multiple battlegrounds involving multiple players, as platform growth can no longer be driven by the low-hanging-fruit of analogue homes: the platform market is now more crowded, complex and competitive than ever
- Indeed, these strategies both reflect and influence consumer behaviours, which continue to evolve and create new battlegrounds among legacy players and new entrants
- In this section, we have determined the key demand-side and supply-side trends that underpin battlegrounds among platforms, and highlight the key challenges that FTV platforms face as a result



# Platform operators are evolving their propositions to incorporate new functionality as technology develops: as a result, the platform market is increasingly competitive and FTV platforms must evolve to maintain share...

- Platform operators have consistently evolved their consumer propositions in line with shifts in consumer preferences
- This included (initially) giving viewers access to more channels and access to value-added services (including high-definition channels), and (later) giving viewers more control over their viewing
- Platform operators continue to assess their consumer propositions on the basis of coverage, content and functionality, and the failure by any platform to enhance its proposition in line with consumer trends will lead to loss of market share
- The trend towards standardised functionality potentially leaves the FTV platforms – Freeview and Freesat – exposed as they lack a combination of scale, capital and capacity to keep up with the evolving propositions of Sky and Virgin
- Based on a review of current investment and development plans, we predict that the next wave of platform innovation is likely to be around personalisation (e.g., "my Sky", "my BBC") and the ability to access content on multiple platforms including via the TV and the tablet in and out of the home
- As with other such developments, functionality may well be provided at no additional cost by pay TV operators, as part of an ongoing upgrade to service levels as part of single-bill, bundled propositions (see overleaf)

## Strength of proposition, by platform/functionality

| Functionality | BSkyB | Virgin Media | Freeview | YouView | Freesat |
|---|---|---|---|---|---|
| ***SD channels*** | ● | ● | ◑ | ◑ | ◑ |
| ***HD channels*** | ● | ● | ◔ | ◔ | ◑ |
| ***Time-shifting capability*** | ● | ● | ◔ | ● | ◔ |
| ***On-demand functionality*** | ● | ● | ◔ | ● | ◔ |
| ***Interactivity*** | ◕ | ◕ | ○ | ◕ | ○ |
| ***Inter-operability, personal storage*** | ◕ | ◕ | ○ | ◔ | ○ |

*Pay-TV platforms continue to offer the widest and deepest range of content and functionality – providing the benchmark against which other platforms must respond*

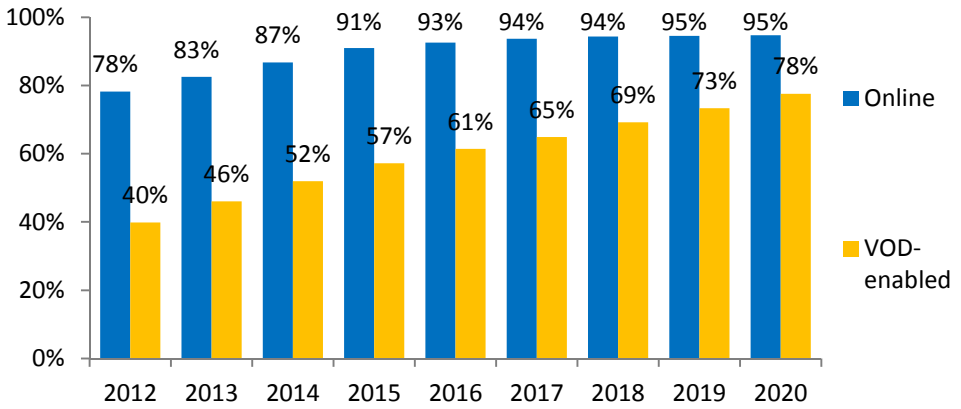
*The degree to which Freeview is able to respond will crucially depend on the upgrade path agreed by its owners and the extent of horizontal market innovation*

*Freesat suffers from having one a subset of the shareholders of Freeview and a major same-platform competitor in the form of Sky*

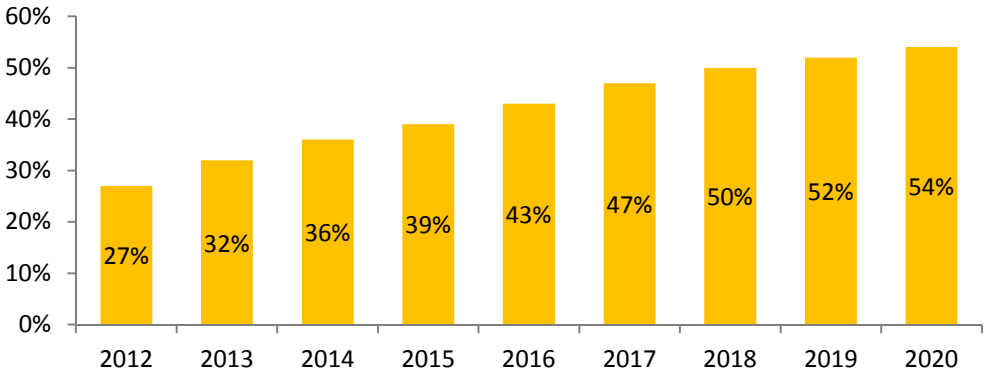
# Bundled provision across TV, broadband and telephony is now a cornerstone of the platform market as operators seek vertical integration to lock-in subscribers – this is creating pressures towards an all pay-TV world

- Major platform players have sought to extend the range of services they offer in response to slowing growth in their core maturing markets and in light of consumer preferences; for example:
  - Growth in standalone pay-TV subscriptions has slowed, leading platform operators (e.g., Sky) to target the cross-promotion of fixed line and broadband services to core TV subscribers
  - Broadband penetration is reaching maturity – at close to 80% of UK homes – and the market is crowded and competitive, with new entrants having emerged as a result of LLU legislation; as a result, many network providers (e.g., BT and TalkTalk) have sought to launch TV services to protect their existing fixed line and broadband businesses
  - Consumers are increasingly favouring the purchase of bundled services from a single provider, as these typically offer increasing value for money and provide a single transaction point for all communications services in the home
- As service providers have responded to incentives to aggregate the offer of communications services, so these incentives have been passed onto consumers – for example, legacy players (including Sky and BT) typically use bundling as a means of retaining subscribers, by offering special offers/discounts for those that take additional services
- The provision of bundled services is now a cornerstone of the communications market in the UK: this trend is a major driver away from FTV platforms, as bundled services push audiences towards pay or enablement pay

## Penetration of online/VOD capability (% of total homes)




## Penetration of triple-play services (% of total homes)

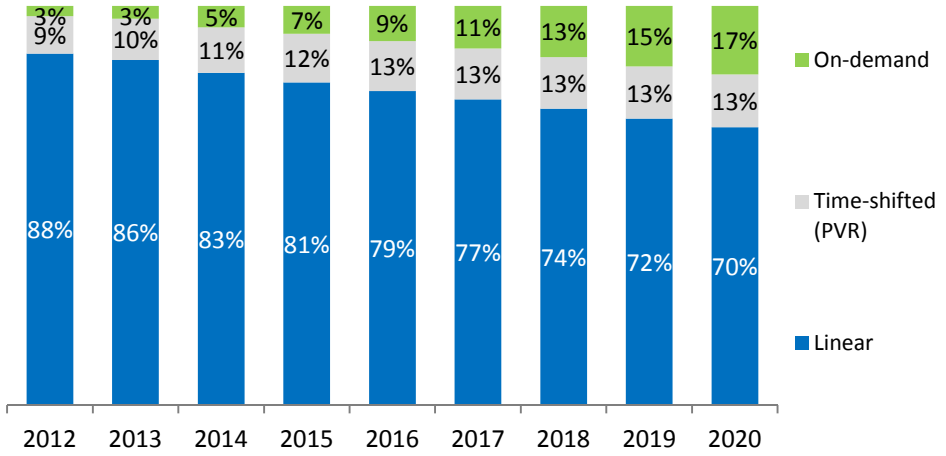



*Source: Mediatique*
*Notes: Our methodology includes a bottom-up evaluation of triple-play take-up among the major players, checked against a top-down assessment of aggregated market outcomes for triple-play penetration. All figures are year averages*

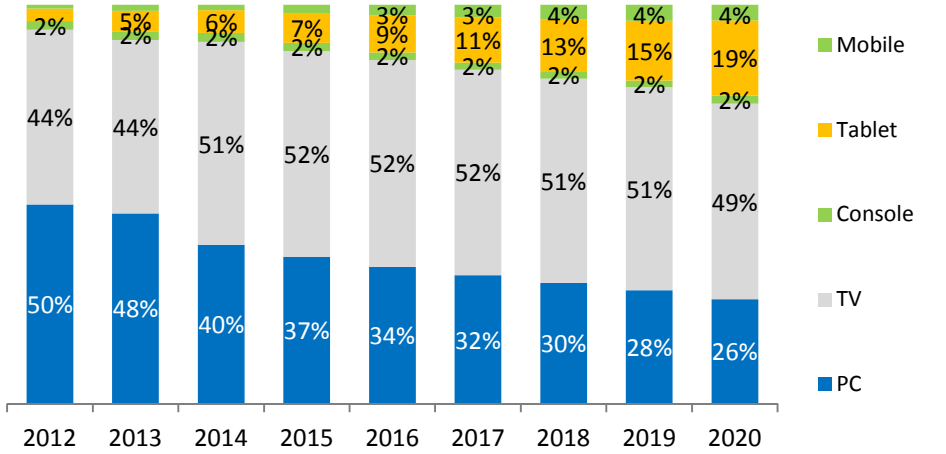
# Shifts in audience behaviour are extending the battlegrounds between free and pay, including to new devices...

- This content availability mirrors the nature of the shift in TV consumption towards a greater role for non-linear viewing; as a result, the parameters of platform competition also shift
- The "TV" market now embraces a range of consumption behaviours (including linear channels, time-shifted and on-demand viewing) across a range of devices (including TV sets, computers, tablets and mobiles)
- ...although, even by 2020 we estimate that more than 80% of viewing will be derived from linear channels or recorded content off linear channels
- These trends have a number of implications for the structure of the platform market:
  - Those platforms that are seeking to "own" the consumer relationship must extend their capability to include delivery across multiple platforms
  - A mixture of free and pay business models will be available, depending on the nature of underlying dynamics – such that PSB content will continue to be available for free on a linear, time-shifted and on-demand basis
  - ...this mix is potentially compromised, however, by the launch of enablement-pay models (which ensure quality of service for on-demand functionality) and multiple device delivery bundled with pay-TV
  - Crucially, the extent to which the balance shifts toward pay may self-perpetuate as FTV channels may be increasingly less prominent in homes where on-demand enablement is growing and where platform operators act as gate-keepers and search functionality is increasingly based on algorithms rather than rules

## Share of viewing hours, by consumption type (%)




## Share of on-demand viewing, by platform (%)

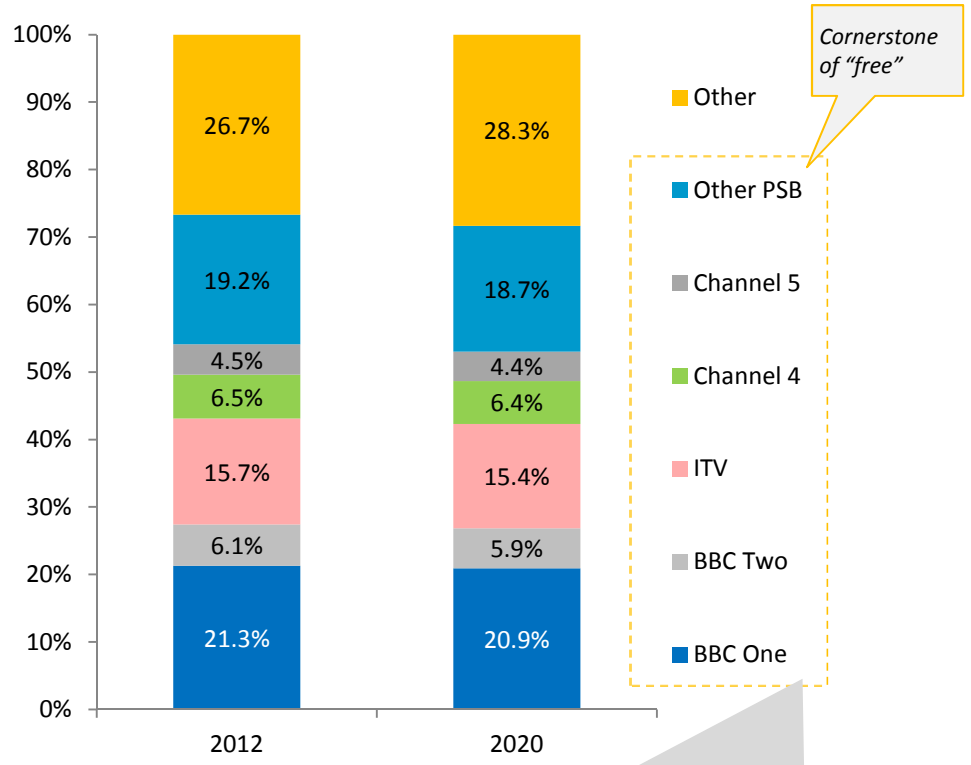



*Source: Mediatique*

# Free-to-air content continues to secure a significant share of total viewing, however; this provides a degree of protection to FTV platforms over time...

- The strength of FTV platforms has long been sustained by the proportion of viewing that continues to be secured by free-to-air networks
- In 2012, the PSB channels collectively secured more than 70% of all linear viewing; we estimate that this will largely be sustained by 2020
- Such an outcome reflects a number of key drivers:
  - Viewing preferences continue to value narrative video content of high quality with the top-performing titles rooted in locally produced original drama; such content continues to be delivered within the PSB compact, with an obligation to be freely and universally available
  - The scale of audiences that free-to-air networks secure is rooted in popular channel brands and programme brands that retain significant audience loyalty – giving the free-to-air market a robust foundation
- As a result, the continuing availability of freely available content mitigates the incentives for households to subscribe to pay-TV services
- Moreover, even in a pay-TV context, enduring popularity of FTV content may continue to ensure prominence and engagement, both in linear and non-linear environments

**Share of linear viewing, by channel (%)**




*Consumption data continues to prove that shares of time-shifted and on-demand viewing bear a close correlation to underlying shares in linear*
*...this provides some protection for FTV content as battlegrounds extend to non-linear*

*Source: Mediatique*

# More radical outcomes around FTV versus pay are possible, however, in the event that wholesale disintermediation of TV platforms by IPTV occurs (although this remains unlikely at least in the medium term)

- The prospect of delivery over IP poses a challenge to the long-term viability of FTV distribution, and the future of Freeview/Freesat in particular
- New entrants are keen to exploit the opportunities in IPTV, along with the legacy network service providers who have made investments into the format outlined opposite
- However, there exist significant barriers to IPTV growth in the short term, including:
  - Technical barriers to reliable delivery of content over IP (see opposite)
  - Content restraint by rights holders (e.g., broadcasters withholding streaming rights for linear IP) – we illustrate this in relation to movie windows overleaf
  - Search/navigation bottlenecks (lack of consumer-friendly methods of content discovery and metadata linking)
- Nevertheless, IP will become a crucial distribution network – but largely in combination with broadcast networks, rather than a substitute (except for minority audience services); as a result, the threat to the broadcast standard for the distribution of *linear* television is likely to remain minimal

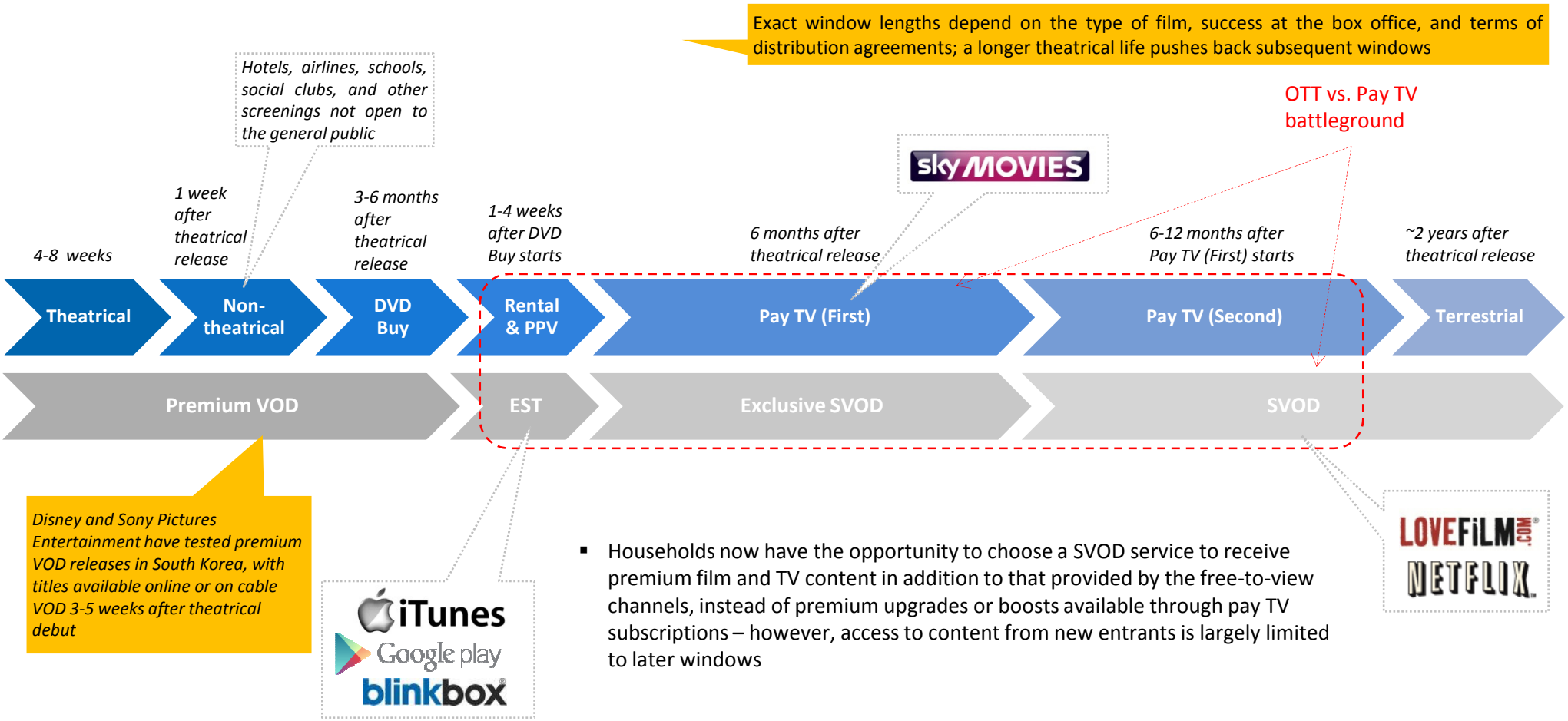
## Barriers to the emergence of IPTV

- The delivery of linear channels over IP is already offered by ConnecTV (largely for niche channels) and selected channels from BT and TalkTalk; Now TV provides content from Sky's pay channels (and from suppliers such as UKTV). However, we suggest that IP cannot currently deliver a national linear TV service to all homes, owing to a mix of technical reach, capacity, speed and household connections
- Revised projections of the Broadband Delivery UK programme indicate that superfast broadband will be available to 90% of premises in the UK by December 2016, and 95% by 2017. However, even for minimal usage, an IPTV triple-play service would require at least 12 Mbps to deliver TV services – this ignores too the effects of contended usage whereby TV viewers seek to access IP-delivered services at the same time and does not account for bandwidth requirements for HD
- In order to ease network congestion for linear IPTV distribution on a mass scale, fibre networks must be upgraded to enable multicasting of TV content – this would enable a service provider to send TV content to multiple users simultaneously, saving network bandwidth
- ...we estimate that only 40% of homes will be capable of receiving multicast IPTV services over fibre by 2022 – as a result, it is unlikely that IP would be able to:
  - Achieve audience scale necessary to challenge cable and satellite pay TV models
  - Guarantee PSB obligations of universal availability
  - Provide sufficient QoS to differentiate effectively from OTT
  - Maintain assurances of network neutrality

*We explore the international experience of IPTV in section 3 of this report*

# Access to movie rights is a crucial likely battleground between legacy and new operators – although Sky's access to early windows provides a robust barrier against traction from new entrants...

## Pay window timeline (traditional and IP-delivered)

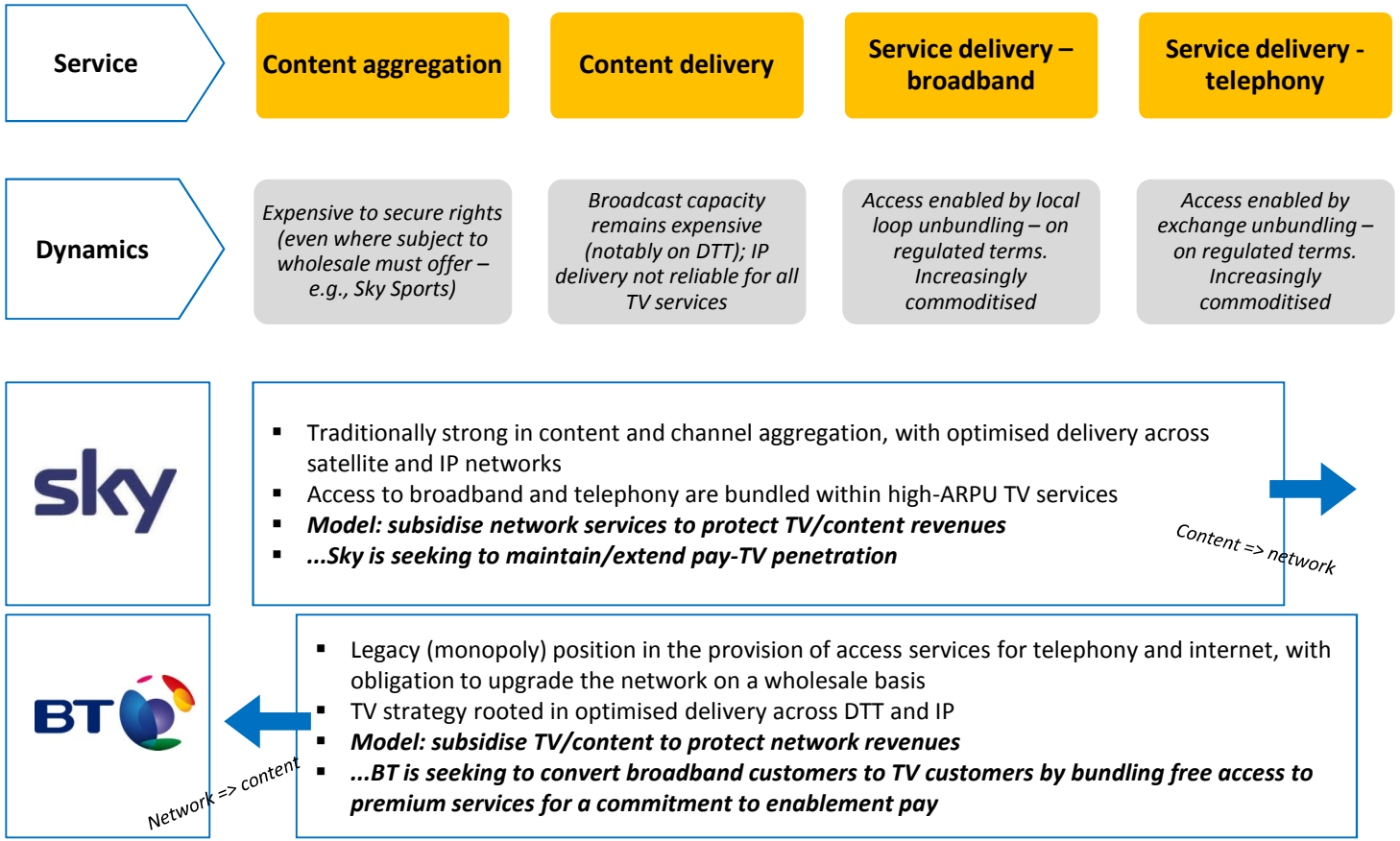



- Households now have the opportunity to choose a SVOD service to receive premium film and TV content in addition to that provided by the free-to-view channels, instead of premium upgrades or boosts available through pay TV subscriptions – however, access to content from new entrants is largely limited to later windows

# The battleground between Sky and BT illustrates a key axis of competition in the TV market – leading to an outcome of *mutually assured disruption...*

- The bundling of customer services has led to a fundamental shift in competitive dynamics, with operators from previously distinct segments of the communications market now competing directly for subscribers
- One market outcome of this is *mutually assured disruption*, where players from historically distinct market segments are now competing for the same subscriber relationships
- This outcome sees network operators give away (or price very cheaply) content services to protect their core network revenues and content aggregators/distributors give away (or price aggressively) communications services to protect revenues from content
- The crucial example here is the competitive battle between Sky and BT. The outcome of this battle has different implications for the balance of free and pay in the platform market

## Converging competition between BT and Sky

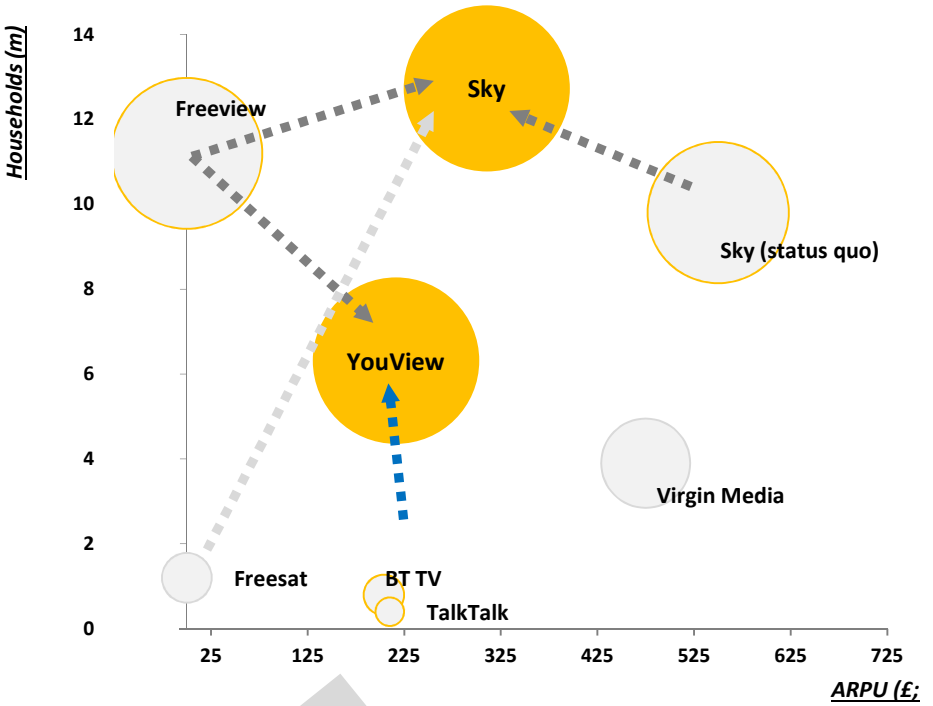



*Source: Mediatique*

# The FTV platforms face a significant challenge from Sky and YouView, both of which are seeking to secure subscriber relationships with low-ARPU homes...

- As functionality becomes the central platform battleground, Freeview risks becoming the "new analogue" as the default platform from which other platforms such as Sky seek to poach subscribers (this will be compounded in the event that the platform does not evolve toward HD, which is becoming a "hygiene factor" for TV services)
- Sky is likely to aggressively target Freeview homes that are seeking access to more functionality or more choice/control at a low incremental cost: its fishing pool of high APRU homes is depleted and growth will only come from the low to mid ARPU segment
- While the launch of YouView is a direct attempt to mitigate churn away from the DTT platform, any migration of homes from Freeview to YouView will represent growth in pay-TV homes (with most opting for enablement pay)
- Likewise, in the absence of a resilient strategy from Freesat, they might also see a migration of homes to Sky (or indeed to YouView)
- The future strategy of the PSBs in relation to their support of YouView versus Freeview may be the single most important factor in determining the pace and direction of change in the platform market over the medium term

## Battleground for low ARPU homes




- These arrows represent the range of likely substitution effects among the key platforms over the medium-term
- The key battleground is therefore between Sky (pay), Freeview (free) and YouView (enablement pay)

# The original intentions behind PSB sponsorship of YouView are unlikely to have changed: they remain broadly supportive of FTV TV (and this will affect how they act in regard to supporting YouView's next-phase strategy)

## The future for YouView

| | |
|---|---|
| **The YouView proposition has emerged as a pay platform** | ▪ A key variable to the future evolution of YouView is the nature and direction of the group's strategy post the renegotiation of the shareholders' agreement<br>▪ The current manifestation of YouView is as an enablement pay proposition linked to incremental consumer subscription payments to sponsoring ISPs (it has effectively emerged as the bundled A/V element of a triple-play route to market for the ISPs)<br>▪ While the success of YouView contributes to the aggregate penetration of Freeview (DTT), its future evolution may accelerate the disintermediation of broadcast in favour of gate-kept IP delivery (with implications for viewing share of FTV networks and for their funding models) |
| **YouView faces a number of challenges in seeking to gain traction** | ▪ YouView's prospects are complicated by a range of factors, including its late arrival to the market, the competition it faces from connected TVs (from manufacturers and new entrants such as Google, Apple) and the response likely from legacy pay operators in addressing YouView's challenge in the low to mid ARPU market<br>▪ In particular Sky and Virgin have the ability to continue to evolve consumer propositions (enhancing a multiple device distribution strategy, adding functionality around storage and inter-operability, improving hybrid mobile and fixed line delivery and segmenting propositions by package and price)<br>▪ The competitive challenge is compounded by YouView's own shareholding issues (the strategic fault line in the next phase of development around broadcast versus IP, FTV versus pay, search/navigation dynamics, data capture) |
| **The PSB shareholders are considering future strategy at YouView and Freeview** | ▪ It is unsurprising that the shareholder negotiations took so long (culminating in a reduction in PSB/Arqiva funding of YouView)<br>▪ In particular, the BBC is still considering how it will position itself on the crucial questions of access and delivery around a shift from broadcast to IP; ITV and Channel 4 are considering the trade-offs around robust foundational FTV TV and the potential access to new revenue streams through connected devices, dynamic advertising models and the ability to charge for content<br>▪ For the PSBs (and Arqiva) there remains a fundamental question around how to promote both the next stages of YouView's development and an upgraded Freeview rooted in existing relationships with manufacturers, which provides a route to enhancing the prospects of FTV without ceding autonomy to ISPs (but crucially offers enough 2.0 features to see off competition from pay TV operators); the planned Freeview Connected standard (a DVB-T2 tuner with an IP connection) is the mooted option<br>▪ The future of Freesat in this regard is also at issue (a Freeview upgrade path may lead to consolidation of the PSB support of FTV in a single proposition that is available via terrestrial and satellite broadcast, enabled by IP connectivity – this is a strategy of harmonising FTV propositions – clearly communicated to manufacturers and consumers |

# We have determined that the FTV landscape faces a number of challenges as the platform market evolves...

## Key findings from this section

| | |
|---|---|
| **The platform market is increasingly competitive** | ▪ The TV platform market is increasingly competitive in terms of the emergence of new players and propositions; the key distinction between FTV and pay remains significant but categories are blurring; moreover, strategies are evolving and will continue to do so in response to technological, behavioural and competitive shifts<br>▪ The entry by broadband/telecoms players into the TV market (to fulfil requirements for a competitive triple play) has defined a crucial battleground in the low and mid ARPU segments, where both new entrants and traditional operators are having to focus attention<br>▪ The pressures on default FTV TV are intensifying; yet FTV continues to be the principal means by which PSB networks derive revenues and fund content investment |
| **Market changes are extending the parameters of competition** | ▪ Freeview 1.0 is likely to decline as a proportion of homes served, as the market evolves toward meeting consumer requirements for more choice and control (with content available when and where consumers want it)<br>▪ Lack of co-ordination in any upgrade path that is “free” and “open” will favour business models rooted in triple play<br>▪ New entrants including SVOD players (e.g., Netflix, Amazon) and IP-enabled service propositions (connected TVs, managed TV platforms) are providing a new source of competition for legacy operators |
| **Legacy players are evolving in line with technology** | ▪ The threat of new entry and changes in technology (search, network delivery), content availability and consumer behaviour have combined to encourage legacy operators (including platform operators and broadcasters) to evolve their propositions, including around content packaging, pricing, bundling of A/V and communications services, portability/inter-operability<br>▪ This has been further enabled by hybrid IP-broadband connectivity, and in particular richer content and service offerings directly to the main set in the household |
| **Convergence is shifting consumer models away from free** | ▪ The effect of increased competition (including from new entrants) and improved network delivery in particular has been a shift toward pay models (at least enablement pay) and against FTV; the battleground in the medium term is likely to be for those homes looking for greater functionality and control but unwilling to pay premium prices<br>▪ The result is heightened competition in the low to mid ARPU segment, pitting new entrants against legacy players and favouring distribution models linked to IP delivery of on -demand services (even if broadcast continues to be an efficient mechanism for the delivery of mass market linear TV)<br>▪ The upgrade path for foundational Freeview to a connected world will be determined in part by the decisions taken by broadcasters within YouView and Freeview; the future robustness of FTV will also depend on the degree to which IP delivery substitutes for broadcast even for linear channels – the pace of this transition will be affected by technology, broadcaster strategies and consumer behaviour as well as by platform competition |

1. Introduction

2. The battleground for FTV TV
   - Current dynamics in the platform market
   - Strategies of the major stakeholders
   - The challenges facing FTV TV

**3. The role of IPTV in international territories**

4. The transition towards DVB-T2 standards in the UK
   - The role of T2 in the platform market
   - Drivers of transition towards DVB-T2

5. The evolution of the platform market to 2024

6. Appendices
   - A framework for considering the strategic incentives of multiplex operators towards a T2 transition
   - Profiles of selected markets

# In this section, we have considered the role and development of the IPTV market in key international territories where broadcast services are subjected to potential substitution by IP as a result of spectrum allocation

- As part of our consideration of future platform outcomes in the UK, we were asked by Ofcom to consider the role of IPTV in other territories
- As part of this analysis, we considered whether lessons could be learnt and applied to the UK experience, both to explain the currently limited role of IPTV in the UK and what conditions would have to exist in order for it to play a larger role in the future
- We provided Ofcom with assessments of IPTV and its potential as a DTT substitute in **France, Germany, Italy, Sweden, South Korea** and the **US**. We were also requested to add **Belgium** and **Hong Kong** to our summary pages, for comparison
- An overview of our approach to this work is set out opposite. A detailed overview of each of the territories under consideration is set out in the appendix

## A summary of our methodology

- We have analysed the key drivers that determine platform outcomes across all territories, and thereby sought to determine why differences in platform penetration exist among territories with similar economic and social contexts
- We have then provided summaries of the market structures of individual territories and the role of IPTV in each, including identifying the major IPTV providers
- We have elected to use the platform market shares used by Ofcom in its 2012/2013 International Communications Market reports – this approach permits like-for-like comparisons and renders the work consistent with Ofcom's own prior research and analysis
- Our analysis has been informed by our understanding of the international broadcast and IP markets, and the commercial strategies and incentives of key players
- For the avoidance of doubt, we have discounted the role of mobile broadband as a substitute for broadcast, although implicitly WiFi is a key constituent in the delivery chain for a range of audio-visual services (e.g., for in-home delivery to STBs and tablets and to tablets via hot spots)
- For the purposes of this report, we refer to superfast as any broadband connection above 20 Mbps

# IPTV is increasingly becoming a viable distribution network in key international territories, alongside legacy broadcast and cable networks...

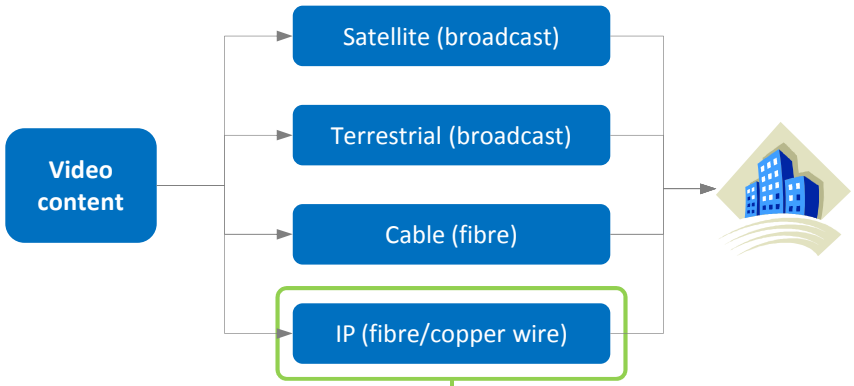
- Content owners and aggregators use a variety of distribution networks in order to reach viewers, via a range of technologies including broadcast – both satellite and terrestrial – and cable. In addition, the roll-out of IP technology, and household penetration of broadband packages, has enabled IP networks to emerge as viable mechanisms of video distribution in certain territories

- As a result, IP connections in the home can be used to deliver TV and TV-like services directly to a set-top-box or TV set. This includes the delivery of a consumer package of linear and non-linear content over a proprietary or unbundled IP network, such as the TV services offered by France Telecom or Deutsche Telekom – in many respects identical to the model of satellite or broadcast delivery, but using IP as the core distribution network. For the purposes of this report, we refer to this as "IPTV". On this definition, while IP-enabled, BT Vision in the UK is not strictly an IPTV platform as it (currently) relies on both DTT and IP to deliver its video services

- Markets for video distribution vary in competitiveness among key territories, and in some cases IP has already gained critical mass as a sole means of distributing video content in a home, including the distribution of linear TV channels, video via VOD portals and general internet use. Increasing capacity within IP networks therefore has the potential to accelerate the disintermediation of broadcast platforms over time

- However, technical capability alone is not sufficient to enable IP disruption, as there are a number of additional factors that also help determine the potential ability of IP to substitute for broadcast – as we detail overleaf

## Distribution models for delivery of TV services




Fixed network connections can be used to deliver telephony and data services to end users over existing copped lines or upgraded fibre routes (either to the cabinet or to the home)

In most territories, IP can be used to deliver a complete portfolio of TV services in the home – albeit to limited numbers of users in most cases

An increasing number of platform operators offer hybrid distribution solutions – using broadcast technology for delivering linear channels (e.g., DTT or DSAT) and IP technology to deliver non-linear services (e.g., Sky On Demand)

Cable operators are increasingly adopting IP in delivering services over their closed networks, but do not permit over the top services using IP

# We have identified the key dynamics that influence the role of IPTV within a country's platform market...

## Key dynamics that affect IPTV outcomes

**Access to content underpins the prospects of IPTV providers**

- The degree to which IPTV operators can cost-effectively secure access to crucial content – such as network programming and premium sport and movies – is a key determinant of their ability to compete against existing players
- The persistent market shares enjoyed by cable and satellite in a range of key markets, including Germany, the US and the UK reflect in part legacy content supply arrangements whereby key content owners receive significant compensation from pay TV operators, and have been prepared to grant exclusivity on a basis that precludes distribution via other platforms
- In addition, free-to-view channels continue to value ubiquitous national distribution, and IPTV providers that can only deliver channels on a sub-national basis may not be able to meet the distribution demands of channel operators that require ubiquity
- Such mass-market channels must also reconcile the returns from IPTV distribution with the incremental costs of IP delivery, which still include payments to CDNs and/or to managed network providers in order to ensure robust delivery – "niche" channels will find the point at which IP is cheaper than broadcast may well arrive sooner than for mass market channels
- In many cases too, content owners/broadcasters have direct incentives to ensure the outperformance of broadcast platforms:
  - Channels generally secure better viewing outcomes on low capacity platforms such as DTT
  - In certain territories, broadcasters are key stakeholders in broadcast platforms via multiplex operators or their position as public service broadcasters

**Consumer behaviours and preferences determine demand for IPTV services**

- Consumers are generally agnostic about how their TV services are delivered but they remain intolerant of poor quality reception. Deciding on a TV service provider is primarily based on value for money, choice, functionality and customer service. This partly explains why technologies that are potentially the most functional do not always lead the way in terms of household penetration – cable TV in the UK, for example, has long lagged behind satellite and terrestrial distribution despite its inherent capacity advantages, largely because of persistent customer management lapses, lack of differentiating content and relatively high prices
- Furthermore, consumer behaviour continues to favour the consumption of scheduled viewing on linear channels, and increasing technological enablement (notably the ability to time-shift recorded content and to access content on-demand) has not led to a wholesale substitution of viewing hours by non-linear alternatives
- IPTV services are *de facto* pay services as households are required to subscribe to a broadband package in order to receive services. In some cases, the TV element is supplied at very low marginal cost, although an underlying payment from household to provider is required. This has limited the appeal of IPTV in certain territories with compelling free alternatives such as DTT (which often only require a one-off cost for a set-top box or tuner-equipped TV)

# ...these dynamics include the incentives and behaviours of legacy operators and the prospects for new entrants...

## Key dynamics that affect IPTV outcomes (contd...)

**Stakeholder strategies can influence the prospects for IPTV**

- Platform take-up has as much to do with the commercial strategies of TV platform operators as it does with the underlying technology. Certain operators have better records of subscriber acquisition and retention and (crucially) technological innovation that allow them to overcome any inherent capacity constraints within their incumbent distribution mechanism
- This is true, for example, of Sky in the UK, which through a series of innovations around functionality and clever packaging (for example, triple play, PVRs, roll-out of HD) has been the fastest growing pay TV platform in the UK throughout most of its history
- Existing broadcast and cable players have been evolving their propositions in order to emulate new services provided from new entrants (*contingent innovation*), and have been able to leverage their existing content supply arrangements and billing relationships to counter the threat of new entry
- ...this largely explains why the largest IPTV providers remain incumbent telco providers (i.e., rather than new entrants), which can leverage existing customer relationships, cash flow and billing/customer care systems

**Access to funding can be a barrier to entry for IPTV players**

- The IPTV industry has experienced a degree of corporate failure in major territories (e.g., Homechoice in the UK, Alice in Germany, Fastweb and Tiscali in Italy), and the ability of new entrants to secure funding and to maintain investment in mature platform markets is a critical determinant of success
- The economic climate in specific territories can have significant implications for the prospects of IPTV players in the short to medium term, with pressures on pay-TV revenues more likely to affect new entrants (as opposed to legacy players with cash reserves or access to funding)
- It is worth noting that well-heeled new entrants from adjacent businesses (e.g., Facebook, Google, Apple) have yet to fully develop mass-market TV propositions; they are likely to be more formidable as competitors compared to new entrants such as FastWeb or Homechoice
- However, the rapid growth of triple-play in more markets suggests that incumbent players (both platform operators and telcos) will continue to have an advantage over new entrants – the UK platform market confirms this, given the respective roles of Sky, Virgin and BT in particular

# ...these dynamics crucially include the scale of investment in a country's IP network – via either public or private funds

## Key dynamics that affect IPTV outcomes (contd...)

**Investment in a nation's IP network is a crucial enabler of TV services**

- The robustness of particular networks varies considerably among territories – the terrestrial TV network in the US, for example, is very poor (based on ATSC standards and covering large geographic areas) compared to the UK network (based on DVB with robust national coverage). Similarly, for example, the German cable network remains overwhelmingly analogue, thereby limiting the depth of its consumer proposition compared to digital networks in other territories
- ...consequently, the battleground among platform owners is not equally balanced in each case. It is therefore impossible to assume that a single technology – for instance IPTV – will necessarily win in every territory except over a very long term
- Indeed, not all broadband networks are created equal. In France, for example, where France Telecom built an expensive network with multicast capability and where local-loop unbundling ("LLU") successfully enabled aggressive new entrants offering linear over IP services, IPTV is the main means of reception is nearly one in three homes. In general, IPTV delivery is especially high in countries that combine a strong (and expensively installed) broadband "backbone" network and a lack of heavy investments in DTT or cable networks nationwide

# We have analysed the structure and role of IPTV in the TV markets of six international territories...

## A snapshot of the markets under investigation

| | France | Germany | Italy | Sweden | South Korea | USA |
|---|---|---|---|---|---|---|
| **TV households** | 27m | 38m | 25m | 5m | 20m | 114m |
| **DTT standard** | DVB-T | DVB-T | DVB-T | DVB-T/T2 | ATSC | ATSC |
| **IPTV penetration** | 32% | 5% | 0.1% | 14% | 14% | 8% |
| **HD over IPTV** | Full suite available subject to network speed * | Full suite available to VDSL households* | Not available | HD suite available to certain households* | Full HD suite available* | Full HD suite available* |
| **Main IPTV providers** | France Telecom, Free, Bouyges Telecom, SFR | Deutsche Telekom, Vodafone | Telecom Italia | TeliaSonera, Telenor, Fast TV, regional players | LG, SK Broadband, Korea Telecom | Verizon, AT&T, regional players |
| **Fixed broadband penetration** | 79% | 82% | 59% | 87% | 98% | 72% |
| **Average broadband speed** | 6.5 Mbps | 7.6 Mbps | 4.9 Mbps | 9.3 Mbps | 22.1 Mbps | 9.8 Mbps |
| **T2 transition date** | 2020** | Not set | Not set | 2020 | N/A*** | N/A*** |
| **VOD market** | Broadcaster portals plus DTR; SVOD market small | Emerging VOD market | Small market, dominated by incumbent broadcasters | Large and competitive market | Large and competitive market | Large and competitive market |

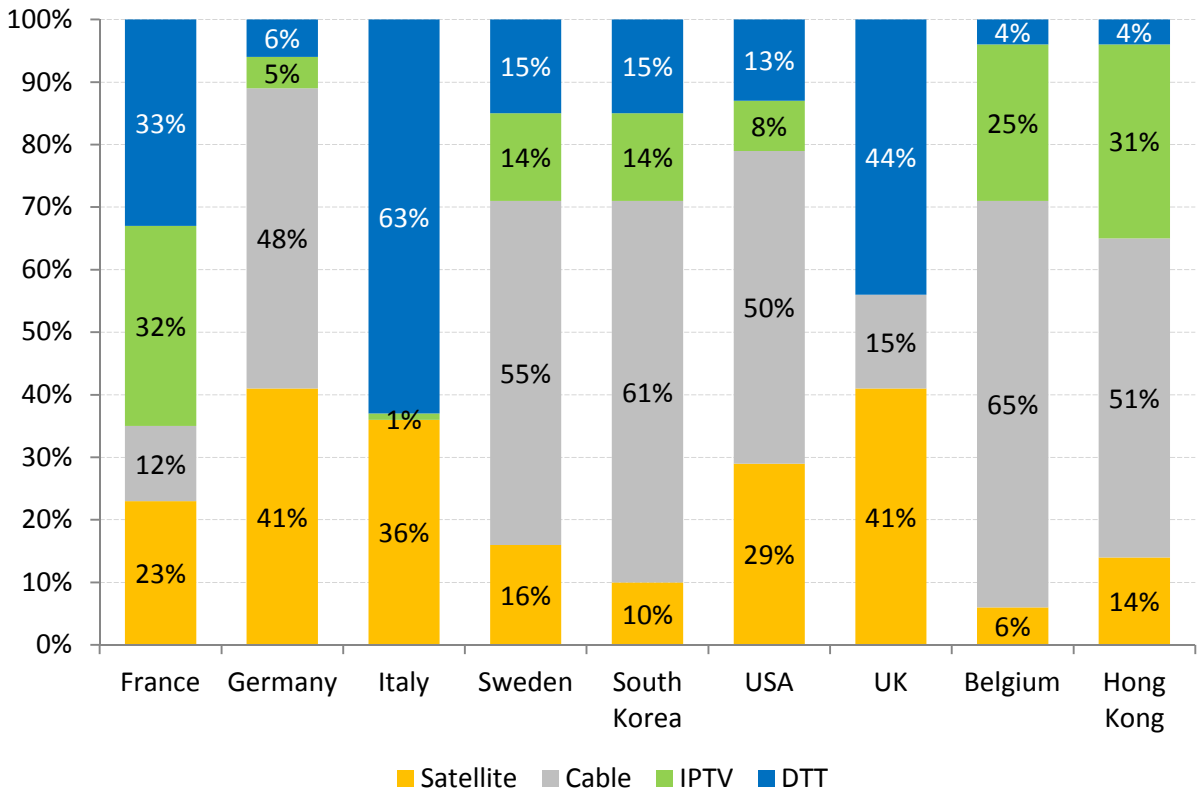
** Although HD services are available over IPTV, in all cases they appear to cause significant reduction in available speeds for other internet services being used simultaneously. A high speed internet connection and significant/managed bandwidth is therefore required, and often services are limited or unavailable if multiroom packages are taken*

*** Under consultation*

**** South Korea and USA use the ATSC standard for terrestrial broadcasts, unlike Europe which uses the DVB-T standard*

# Our analysis confirms significant variations in the relative roles of IPTV and broadcast networks within the territories we have considered...

## Household penetration by technology (primary TV service, %)



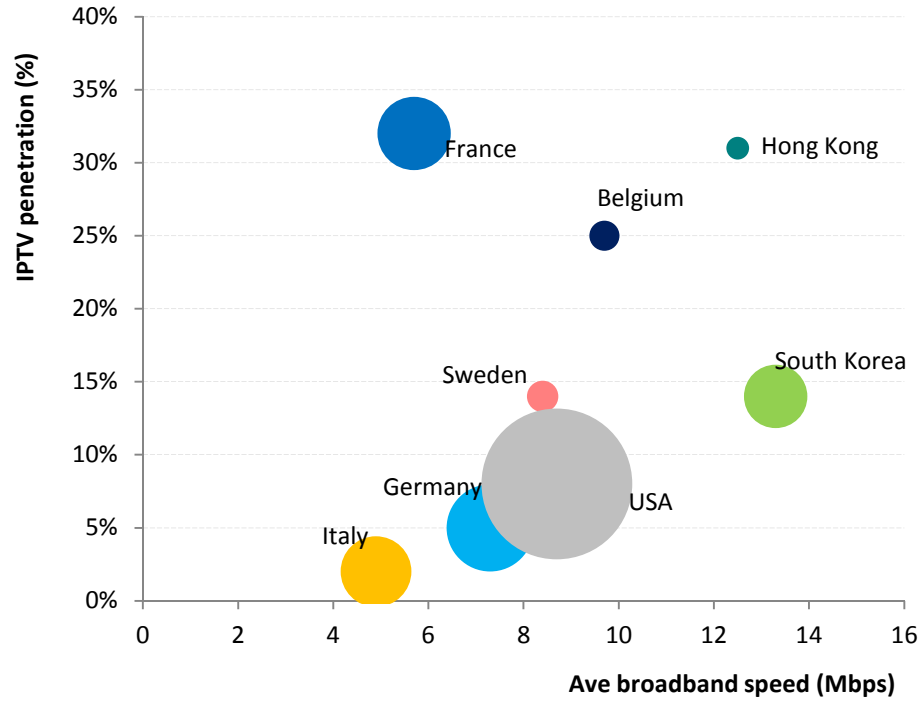

*Source: Ofcom, Mediatique*
*Figures refer to 2012*
*Belgium and Hong Kong have been added for comparison*
*Major IPTV providers in Belgium are Belgacom and Favco*
*Major IPTV provider in Hong Kong include Now TV (PCCW Media), TVB (TVB Pay Vision) and HKBN bbTV*

- Each of the territories under investigation has a mixed economy of platform operators, with a varying role for IPTV
- In certain territories, there is no doubt that IPTV is providing a viable competitive alternative to existing broadcast and cable networks
- Public policy in each of these territories is being scoped in such a way to optimise spectrum allocation against the relative speed of broadcast-IPTV substitution. As a result, those countries with a low DTT penetration are generally better positioned for a substitution of DTT by IPTV
- One of the issues hindering the potential substitution of DTT for IPTV is the number of second sets around the world that are connected to a DTT service. As we illustrate in this report, DTT remains a popular choice for second sets worldwide, as many prefer not to pay for a second service/multi-room option for their non-primary sets

## It remains challenging to isolate correlations between IPTV penetration and specific variables, and we suggest that unique structural and competitive dynamics in each country are key to IPTV prospects in each case...

- We have analysed the potential correlation of IPTV penetration with a number of variables including population size and GDP with limited results
- We found no correlation between the scale of VOD consumption and IPTV penetration across markets. France, for example, has a relatively small VOD market, yet the world's highest IPTV penetration; the US on the other hand, have a very large and competitive VOD market, yet relatively small IPTV penetration
- We did find a relatively strong correlation between the average speed of a nation's internet and the extent of its IPTV penetration, as we illustrate opposite. This is perhaps unsurprising as investment in IP networks crucially underpins the ability of IPTV providers to deliver a full suite of services (including linear channels in high definition)
- However, the lack of a strong correlation confirms that there are broader structural and competitive dynamics that determine IPTV penetration as we highlighted in our introduction – including the historic reliance on terrestrial television as a primary source of TV, the ability of IPTV players to secure content and the importance of bundled service provision within consumer decision making

**IPTV penetration (%) vs average broadband speed (Mbps)**




*Source: Mediatique, Akamai*
*Size of bubble refers to number of households in each territory*
*Belgium and Hong Kong have been added for comparison*

## As a result, a consideration of the variations across the markets under review reveals further factors that need to be taken into account...

- Although network speed and other technical factors are important factors in enabling the delivery of TV services over IP, these do not alone account for the differences in IPTV penetration across the market sample
- For example, the degree that networks are enabled for multi-cast will be a determining feature – in part explaining, for example, why France has a high penetration of IPTV but only a medium-range network speed
- A large DTT market share appears to be a key determinant, in the sense that markets where DTT has a very low penetration (South Korea, Germany and the US) bear some correlation with IPTV penetration; however, this is also affected by the nature of the pay TV market in relevant countries (for example, a high penetration of pay TV - cable and satellite - also correlates to higher share of IPTV)
- One might conclude that a combination of unwillingness to pay and a high market share for DTT (raising the costs and implications of any substitution by IP) means that the environment in these instances is less hospitable to IPTV
- By comparing the UK to the markets discussed in this report, it is clear that the UK falls 'in the middle' in every category (except the extent/penetration of VOD), suggesting that conditions over time will increasingly favour IPTV
- Brakes to this are the lack of willingness to pay and the high hurdle of DTT penetration (increasing the costs of swap out/substitution)

**Variations in the characteristics of key markets related to IPTV**

| | High | Medium | Low |
|---|---|---|---|
| **Network speed** | South Korea | Germany<br>Sweden<br>USA<br>**UK** | France<br>Italy |
| **Multicast/fibre network reach** | France<br>South Korea | Germany<br>Sweden<br>**UK** | Italy<br>USA |
| **Scale/scope of SVOD/VOD market** | Sweden<br>South Korea<br>USA<br>**UK** | France | Germany<br>Italy |
| **DTT market share** | Italy | France<br>**UK** | Germany<br>Sweden<br>South Korea<br>USA |
| **Pay-TV penetration** | Sweden<br>South Korea<br>USA | France<br>Germany<br>**UK** | Italy |

*Source: Mediatique, Ofcom*

# In conclusion, there are a number of necessary technological and structural conditions that must exist in order to secure a critical mass of IPTV market share in any given territory – these are necessary but not sufficient

- Our analysis of IPTV dynamics in key territories confirms that there are multiple determinants of the success of IPTV players, including both new entrants and incumbent network operators
- We suggest that there are a number of necessary technical conditions required to enable market traction by IPTV operators – any such conditions are not sufficient for success, however, as strategic and commercial conditions also have a significant bearing on market structure (set out opposite)
- The precise form taken by this range of conditions is unique to each territory, but it is self-evident that those territories that have invested heavily in IP infrastructure are able to boast the highest levels of IPTV penetration. This largely reflects the ability of IPTV operators to compete by replicating the service offerings of existing platform operators in these territories, however, as opposed to offering a unique set of customer propositions
- The emergence of IPTV as a viable competitor to existing platforms provides a further incentive for regulators to consider optimising spectrum allocation, particularly in territories where the evolution of the DTT platform plays a major role in securing public policy outcomes

## Conditions for the success of IPTV services

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   - **The role of T2 in the platform market**
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   - A framework for considering the strategic incentives of multiplex operators towards a T2 transition
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# A transition of the entire DTT platform to DVB-T2 standards could change the FTV proposition in the UK, with implications for platform competition and market outcomes...

- All terrestrial signals are broadcast using the agreed European-based DVB-T standards
- The UK's DTT platform currently uses a mix of DVB-T1 ("T1") and DVB-T2 ("T2") standards to deliver the full range of services, including television broadcasts and associated services such as radio, text, programme information and red button
- The majority of DTT signals are broadcast on T1, whereas T2 standards are used to distribute HD services on one public service multiplex (PSB 3). Ofcom recently enabled the launch of additional HD services in T2 on two interim multiplexes at 600 MHz (awarded to Arqiva); since our report was submitted to Ofcom, one of these multiplexes has been launched
- Households wishing to receive T2 broadcasts must have a TV set or a set-top box with a T2-tuner. A minority of homes currently have such a tuner in use on the main set, and a transition of all DTT multiplexes to T2 would require many households to upgrade their equipment to receive terrestrial TV
- Non-DTT households, including those using satellite or cable networks, may have a DTT tuner integrated within their TV set although this is not normally used to receive services. These households may rely on DVB-T to receive services on secondary sets within the home, however

## Benefits of a transition of the DTT platform to T2

- A more efficient use of broadcast spectrum would enable the launch of additional services on existing capacity, including HD channels and other capacity-rich services – this would enable the DTT platform to evolve in order to meet the changing needs of viewers and so remain competitive as a platform, particularly for households unwilling to pay for TV; it would also further aid in securing PSB objectives around universality, access and content funding
- Public policy is seeking whether to clear the 700 MHz spectrum from 2018 onwards in order to meet growing demand for spectrum from mobile operators on a basis harmonised with international developments; 700 MHz is currently used for broadcasting, and any clearance may require existing services to be distributed on other parts of the spectrum through a system re-plan
- A successful migration to T2 standards would unlock additional spectrum, permitting current and future services to be carried on DTT even as the 700 MHz is cleared for other uses

# The dynamics we have identified in our analysis of the platform market suggest that a transition to T2 may be essential in order to safeguard the DTT platform over the long term...

## Implications of market dynamics on platform development

**Capacity is a crucial determinant of market share in the platform market**

- Platform operators continue to evolve their propositions in light of dynamics in the platform market – this includes the launch of new services such as HD and IP connectivity
- Operators continue to assess their consumer propositions on the basis of coverage, content and functionality, and the failure by any platform to enhance its proposition in line with consumer trends will lead to loss of market share

**..in particular, HD services are a cornerstone of platform advantage**

- HD services are an increasingly important component of TV propositions in the platform market, and more than half of all TV homes now have access to HD channels
- Increasingly for pay TV platforms, HD is becoming the default broadcast proposition, supplemented by extensive on-demand and on-the-move content; the HD advantage is aggressively marketed by pay-TV operators
- By contrast, DTT homes have access to only limited HD services currently (see overleaf). As competing platforms evolve their propositions to emphasize HD, we suggest that the current line-up of HD channels on DTT will look increasingly light over time

**DTT is under pressure to evolve its proposition**

- The trend towards standardised HD (and other) functionality potentially leaves the FTV platforms – and Freeview in particular – exposed as they lack a combination of scale, capital and capacity to keep up with the evolving propositions of Sky and Virgin
- The limits of the DTT platform may become more apparent in a context where capacity remains a crucial differentiator – this replicates the same risk that analogue TV faced against the initial challenge from multi-channel TV in the 1990s
- There are moves by DTT stakeholders to upgrade the platform, however, by incorporating new functionality and coordinating execution (including the launch of YouView and connected TVs, and the launch of additional HD channels via interim multiplexes)
- ...however, the speed of upgrade at competing platforms (including the shift towards bundled triple-play packages, 'everything everywhere' distribution and further segmentation by price and package) may heighten competitive pressures

**In this context, a transition to T2 would ease significant pressures on DTT capacity, allowing the platform to launch additional HD channels that may be critical to retaining platform competitiveness**

# The depth, breadth and model of HD propositions varies considerably among the major players – with pay-TV operators retaining a significant advantage in the scale of their HD offering...

## HD propositions from the major players

| | Sky | Virgin Media | BT | TalkTalk | Freesat | Freeview |
|---|---|---|---|---|---|---|
| **Total HD channels** | **72** | **56** | **24** | **11** | **11** | **11** |
| **HD channels available for no incremental payment** | **The Original bundle: 11 FTA HD channels (incl. NHK and RT but excl. Aljazeera and Channel 5)**<br>Price: £21.50 | **TV M: 10 FTA HD channels (incl. Channel 5 but excl. Aljazeera)**<br>Price: £20.00 + 15.99 Line Rental (only available as part of the "Starter Collection" triple play bundle) | **BT TV Essential: 11 FTA HD channels (YouView triple play)**<br>Price: £15.00 + 15.99 Line Rental with a 10GB usage cap or £21.00 + 15.99 for unlimited broadband | **TalkTalk Essentials TV: 11 FTA HD channels (YouView triple play)**<br>Price: £8.50 + 15.95 Line Rental with limited PVR capability | **11 FTA HD channels: BBC One HD, BBC Two HD, BBC Three HD, BBC Four HD, BBC News HD, CBBC HD, CBeebies HD, Channel 4 HD, ITV HD, NHK HD, RT HD**<br>Free | **11 FTA HD channels: BBC One HD, BBC Two HD, BBC Three HD, BBC Four HD, BBC News HD, CBBC HD, CBeebies HD, Channel 4 HD, ITV HD, Aljazeera HD, Community Channel HD**<br>Free |
| **HD channels available in the next "basic" HD tier** | *No additional HD channels with The Variety Bundle (Price: £27.00)* | **TV M+: All of the above + Film4 HD = 11 total**<br>Price: £19.00 standalone or £28.00 + £15.99 Line Rental as part of the "Essential Collection" | *No additional HD channels with BT TV Entertainment (Price: £33.00 + 15.99 Line Rental)* | *No additional HD channels with TalkTalk Plus TV (Price: £18.50 + 15.95 Line Rental)* | *None* | *None* |
| **HD channels available in the "premium" tier** | **The Family Bundle: All of the above + 44 additional channels = 55 total**<br>Price: £32.00<br><br>Sky Family Bundle subscribers have the option to add **17 additional premium** movies and sports channels (+£32.00) in HD with the HD Pack (+£5.25) for a total of 72 HD channels | **TV XL: All of the above + 32 additional channels = 43 total**<br>Price: £31.00 + 15.99 Line Rental as a bundle with telephony or £39.00 + 15.99 as part of the "Essential Family Collection"<br><br>**TV XL+: All of the above + 13 additional channels = 56 total**<br>Price: £104.45 + 15.99 as part of the "VIP Collection" | **BT TV Entertainment with HD Extra: 11 FTA HD channels plus 13 additional HD channels**<br>Price: £36.00 + 15.99 Line Rental | *None* | *None* | *None* |

*Note: All prices exclude the cost of installation, and any promotional offers or other temporary discounts on the monthly rate*

# A transition to the more efficient T2 standard may become even more pressing in the event that current spectrum allocation is altered via a clearance of the 700 MHz band and a recall of interim 600 spectrum

## Major issues in the DTT landscape

**Clearance of 700 MHz spectrum band may represent additional challenges to any DTT upgrade**

- 700 MHz clearance will reduce the capacity available to DTT (requiring some aerial upgrades, re-tuning, and the likely removal of at least some HD services). This will leave DTT with insufficient spectrum for a full HD proposition (and potentially not enough to carry even HD existing services) with limited potential to evolve the platform further other than via IP connectivity
- This challenge can be mitigated (and potentially overcome) by a system-wide or at least substantial transition to T2, which would enable the platform to deliver a full suite of existing/new services on a more efficient basis – however, unless all households secured T2-enabled TVs or set-top boxes in this scenario, a transition would leave some households without TV services
- In line with emerging consensus within the European Union, we have assumed it likely that a date for 700 MHz clearance is likely to occur in the course of 2020

**...a migration to T2/MPEG 4 would mitigate the impact of a withdrawal of interim multiplexes**

- Ofcom granted the DTT platform the ability to launch HD services using 600 MHz spectrum using "interim" multiplexes out to 2026; however, Ofcom reserves the right to vary/substitute the allocated frequencies before 2018 (in order to facilitate any transition of DTT from the 700 MHz spectrum)
- Such an outcome would challenge the platform's ability to launch/sustain new HD services (or other services requiring additional spectrum capacity) – this in turn would reduce household incentives to purchase HD-enabled TV sets (i.e., T2-enabled) and limit any market-led T2-transition

**An upgraded connected TV proposition can offset some of the pressures (by demonstrating an evolution in the platform's functionality) but cannot wholly address the foundational challenge imposed by the 700 MHz clearance or the withdrawal of interim multiplexes – at least not in the relevant timeframe... This accords broadly with Ofcom's own findings:**

**"Over a much longer (post 2030) timeframe the universal take-up of superfast broadband could enable IPTV services to provide a viable substitute for the DTT platform, enabling a potential future DTT switch-off scenario. We do not believe that this scenario is a viable option within the shorter timescales considered by this consultation" Ofcom, *Securing long-term benefits from scarce spectrum resources* (March, 2012)**

# DTT stakeholders are broadly agreed that a transition to T2 is critical to secure a viable future for DTT – although there are differences in opinion on the evaluation of costs, benefits and timing...

## Broad stakeholder views on the future of DTT

**Stakeholders agree on the future of DTT**

- All Freeview shareholders (including Sky) do not envisage a substitution of broadcast by IP in the period of the current DTT licences to 2026)
- As such, all stakeholders believe that Freeview/DTT remains crucial to the platform ecology (and the delivery of public purposes in the case of the PSBs) in the medium term
- This explains the willingness of the PSBs/Arqiva to pursue an evolution of the DTT platform, including the integration of PVRs, HD, on-demand access via connected TVs and the launch of YouView

**...and agree that a transition to T2 is a crucial issue**

- The Freeview shareholders (ex Sky) are collectively concerned that the prospect of 700 clearance makes it necessary for Freeview to migrate to T2 on a platform-wide basis – with the exception of ITV, the Freeview/DUK group (BBC, Channel 4 and Arqiva) submitted the following:
  - "To ensure that the platform can continue to provide the range of services that viewers have come to expect from DTT, in the event that 700 MHz is cleared in the future, it will be necessary to transition the network to DVB-T2" *BBC, C4 and Arqiva response to Ofcom consultation on interim use of 600 MHz for DTT (January 2012)*

**...however, there is a misalignment of incentives around the timing of any transition**

- Despite broad agreement that the DTT platform will benefit from a transition to T2, there are multiple categories of benefit and it remains challenging to assign these to individual stakeholders on an agreed basis
- For example, there are many "public" benefits to an outperformance of DTT including the delivery of consumer surplus and public policy benefits around universality, competition and spectrum efficiency. Many stakeholders also argue that any benefits of an outperformance of DTT arise from incurring costs or opportunity costs
- On this basis, the incentives for stakeholders to coordinate a transition to T2 are unclear, even before considering the relative benefits and costs that vary depending on the category of stakeholder being considered. In particular, multiplex operators are incentivised to promote a long-term outperformance of DTT (enabled by a transition to T2), but potentially face a short-term revenue shortfall via a transition to T2 (by compromising revenues from existing tenants with universal T1 coverage) – we set out a framework for considering these incentives in the **appendix**

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# We have considered the current and future penetration of T2 standards across TV households in the UK...

- We have forecast the scale and speed of take-up of T2 standards among TV households between 2014 and 2030 – equivalent to nearly 2 full TV replacement cycles on current sales forecasts
- As we illustrate opposite (and overleaf), we have estimated current T2 penetration as the starting point of our analysis
- Our forecasts do not assume any public policy intervention, and are based on a natural progression of T2 take-up rooted in underlying platform strategies and dynamics and the propositions of manufacturers
- We assume that Freeview Connected (the upgrade path for Freeview) launches in 2015
- All estimates are stated at the aggregate, national level; we have not sought to categorise the Freeview base by social class, geography, age, etc. where significant variations in intentions to swap kit/replace aerials may indeed be discernible

## Determination of T2-enabled households over time

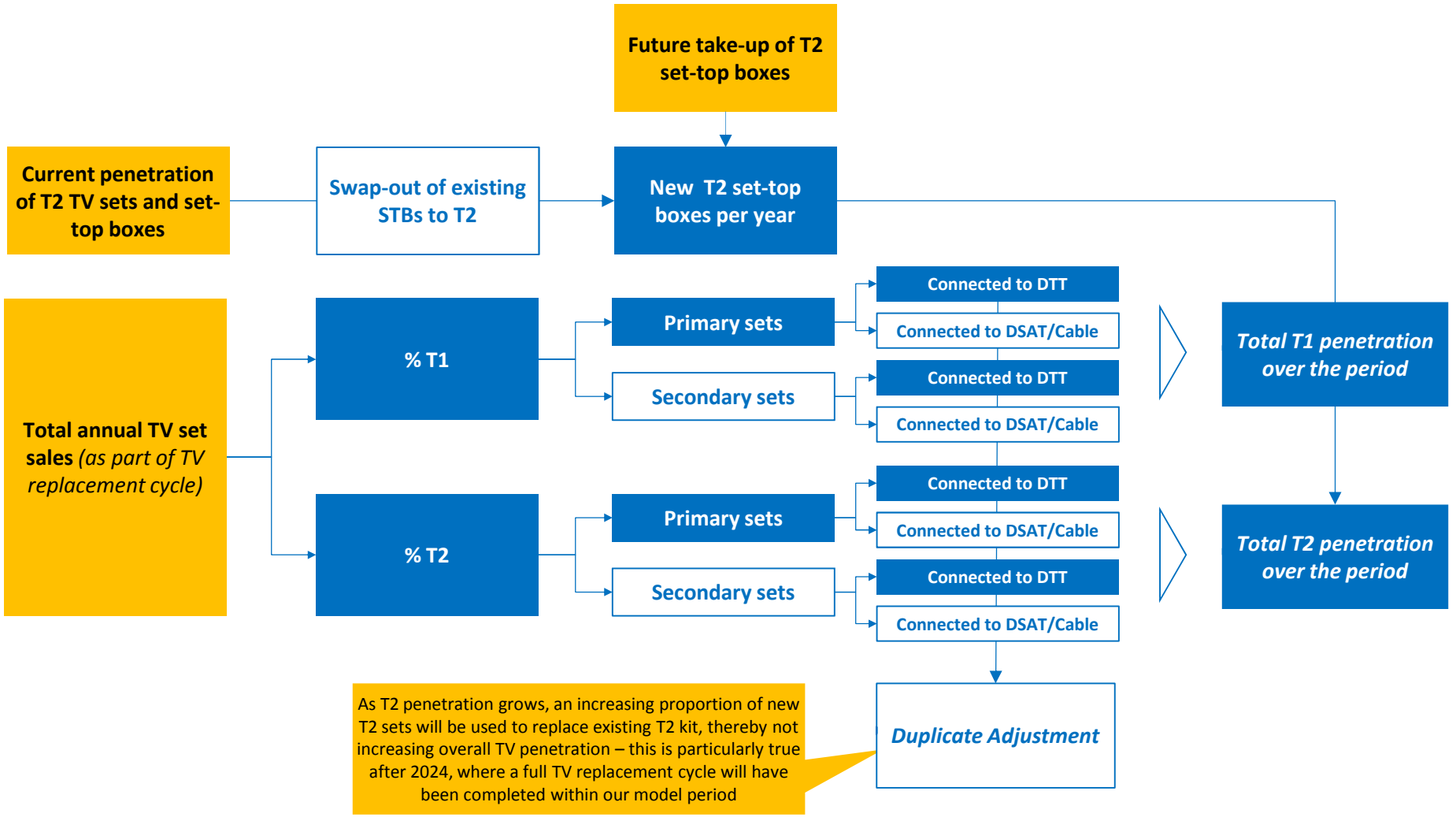
| Current T2-enabled households (2014) | + | New T2-enabled households (2014-2030) | = | Take-up of T2-enabled DTT platforms |
|---|---|---|---|---|
| ▪ DTT homes with a T2-enabled TV set or set-top box<br>▪ YouView homes<br>▪ Satellite and cable homes with T2-enabled TV set (albeit connected to a non-DTT set-top box) | | ▪ Total sales of TV sets: % that are T2-enabled<br>▪ Total sales of T2-enabled sets: % that are duplicates (i.e., being used to replace existing T2-enabled sets) | | ▪ Take-up of YouView and DTT 2.0 services<br>▪ Total T2-enabled households (2014-2030)<br>▪ Total T2-enabled TV sets, split by primary set and secondary set |

The key starting point of our analysis is current (and forecast) DTT penetration. We have tracked the penetration of T2 sets among non-DTT homes, even though T2 is not used to receive services in these homes; nevertheless, it allows us to track total household penetration, which represents an important metric

Perversely, any competitive advantage gained by Sky and Virgin Media from 2014 onwards will compromise the market share of DTT, but will ultimately ease the transition to T2 by reducing the number of homes/sets that are reliant on broadcast spectrum and that therefore need to be transitioned – this is compounded as Sky/Virgin continue to emphasise "ownership" of the home, thereby reducing the scale of transition to T2 for secondary sets

## We have developed a modelling methodology based on take-up/replacement of set-top boxes and TV sets, as illustrated below...

### Illustrative overview of our modelling methodology



# Our forecasts have been informed by a number of industry studies and our assessment of consumer behaviour and the competitive dynamics between DTT and other platforms...

## Inputs to our assessment of platform outcomes

**Survey data**

- Survey data commissioned by the PSB stakeholders in 2012 (and shared with Ofcom) confirmed the value of additional HD channels on DTT, including intentions from certain Sky subscribers to switch to DTT and/or purchase/use T2 kit:
  - [✂]
  - [✂]

**Other industry studies**

- We have also reviewed industry studies and secondary sources to evaluate the link between HD channels (as the defining characteristic of utilising T2 standards)
  - "Conjoint research undertaken by Freeview at the end of 2010 demonstrate that of all the technological attributed offered by a TV provider (HD, 3D, VOD, PVR, etc) HD is the most highly valued by consumers. Both Mediatique's research and industry intelligence suggests that HD is becoming a 'hygiene factor' for consumers when comparing platforms. Increasingly, consumers will come to expect the main channels to be broadcast in HD and for Freeview homes that means on a free-to-air basis" *Freeview response to Ofcom consultation of long-term future of UHF spectrum bands (2011)*
  - ...therefore, as competing platforms continue to extend the role of HD channels within their propositions (with Sky's focus on making HD the "new SD" over time), DTT will face pressures to transition a critical mass of channels to HD
  - "HD presence is necessary to maintain platform competition, audience choice and future spectrum efficiency... Delivery of a critical mass of FTA HD on DTT requires additional capacity" *Public Value Test on BBC HD TV, BBC Trust, Briefing for Stakeholders (2007)*

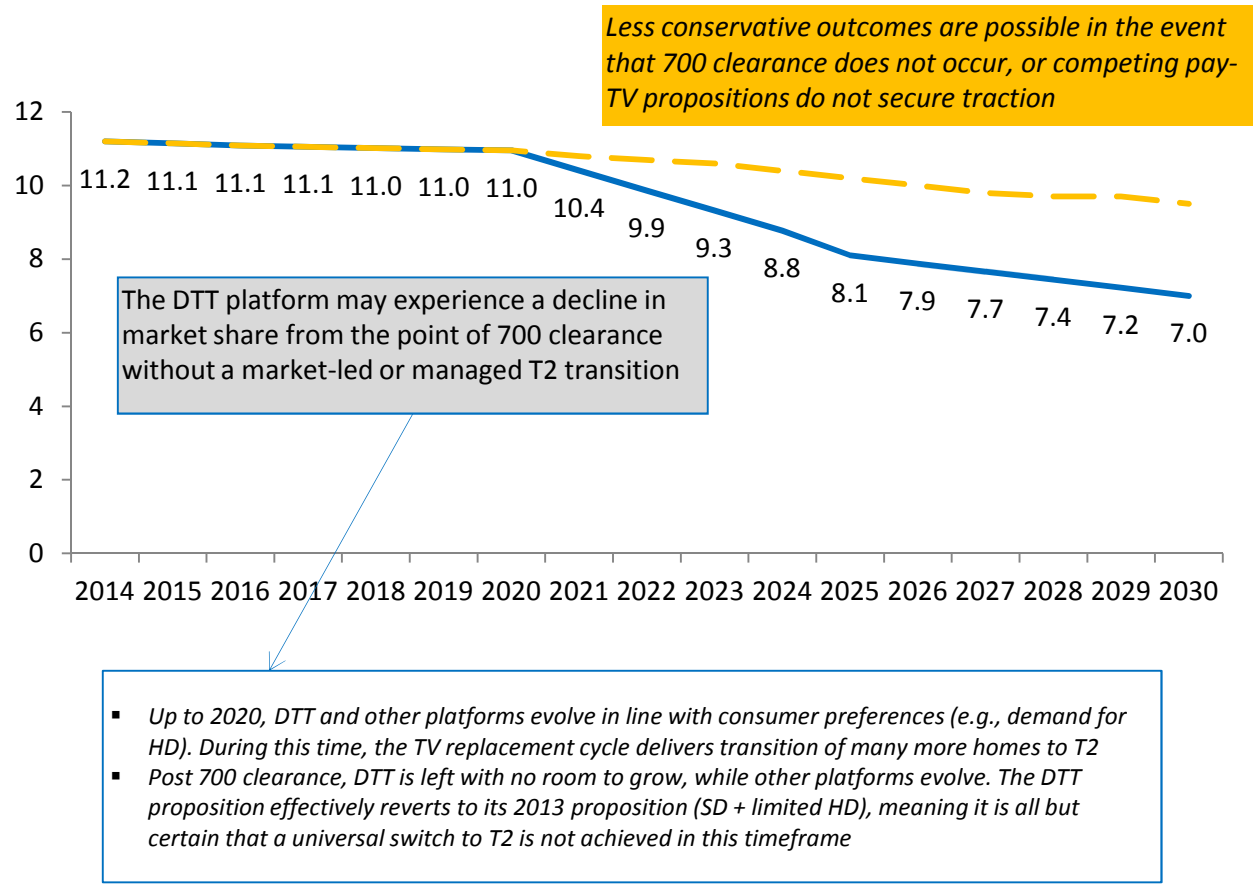
**Competitive benchmarks**

- We have assessed the competitive dynamics within the platform market to assess the implications on DTT penetration of lacking HD services – and indeed the implications of removing services for which consumers had equipped themselves to receive, and the additional burden for a significant number of homes having to re-equip (particularly aerials) and to re-tune
- We assume that Sky and Virgin will continue to aggressively market their propositions, including varying their entry prices for HD services in order to retain a competitive advantage. We also expect Sky to reach a point where it can switch off a number of its SD services altogether, rendering non-HD platforms severely challenged

# Our analysis is rooted in a forecast decline in DTT households over the model period, which account for developments around the timing of 700 clearance and interim multiplexes...

- Our forecasts of DTT penetration infer that any slowdown by a platform in its pace of service innovation, against the grain of consumer expectations, will necessarily lead to an impairment of market share
- In the absence of a transition to a more efficient T2 standard, a slimmed-down DTT platform as a result of 700 MHz clearance (with resulting consumer disruption and a barrier to further evolution of the DTT proposition) may lead to a significant loss of DTT households in the five-year period after clearance in 2020 in favour of satellite, cable and IPTV – this is despite a connected Freeview proposition, which may operate with a smaller DTT foundation from 2020
- This will be compounded by the aggressive marketing of HD as standard by Sky, Virgin, lower price points for HD, expansion of services for a triple-play bundled price, competition from OTT and launch by BT/TalkTalk of IP-only TV services

## Total DTT homes: 2014 – 2030



# T2 penetration is driven by take-up of YouView, the replacement cycle of TV sets, and convergence of manufacturing standards towards T2 as part of Freeview Connected

## Key dynamics affecting the take-up of T2 standards

| | |
|---|---|
| **Replacement cycle for TVs** | ▪ The critical driver of T2 transition is the voluntary swap-out of TV sets in the home – largely driven by underlying behaviours (e.g., replacement of broken kit, desire for larger/flatter screens, demand for HD-ready sets) – rather than a conscious decision to choose T2-enablement<br>▪ We have refined our take-up assumptions to reflect the existence of some households that have no willingness to replace their kit over numerous replacement cycles (see page 81) – their incentive to replace TV sets will only materialise if their TV set breaks<br>▪ We have assumed total annual sales of 6m TV sets (in line with recent declines), recovering to 6.5m by 2020 |
| **Proportion of TV set sales that are T2** | ▪ As the experience of DSO1 shows, some households were still purchasing analogue sets even as the switchover deadline approached – consistent with this, not all future TV sets sales will be of T2 standard<br>▪ Nevertheless, we have assumed a convergence of manufacturing standards towards T2 as consumer demand for HD increases – this is in line with previous experience of integrated set sales in DSO1<br>▪ We have also tracked the replacement cycle of primary and secondary sets in order to assess T2 penetration against all kit in the home |
| **Usage of T2 TV sets** | ▪ In tracking the proportion of DTT homes that are T2-enabled, we have estimated the number of TV sets that are used to access DTT services (rather than plugged into satellite or cable set-top boxes)<br>▪ We have assumed a greater propensity for Sky and Virgin Media homes to replace their TV sets in early years of the interim period, to account for slower replacement cycles among DTT homes (notably those in the DTT 'heartland') – a T2-enabled Sky/cable home does not lessen the challenge of migrating DTT homes to T2 |
| **Purchase of TV set-top boxes** | ▪ The marketing of YouView (including subsidised packages from BT and TalkTalk, and direct purchases from retail outlets) is a crucial driver of transition towards T2 – these boxes enable households to receive HD services irrespective of whether their TV set is T2-compliant (although TV sets must at least be HD-ready) |

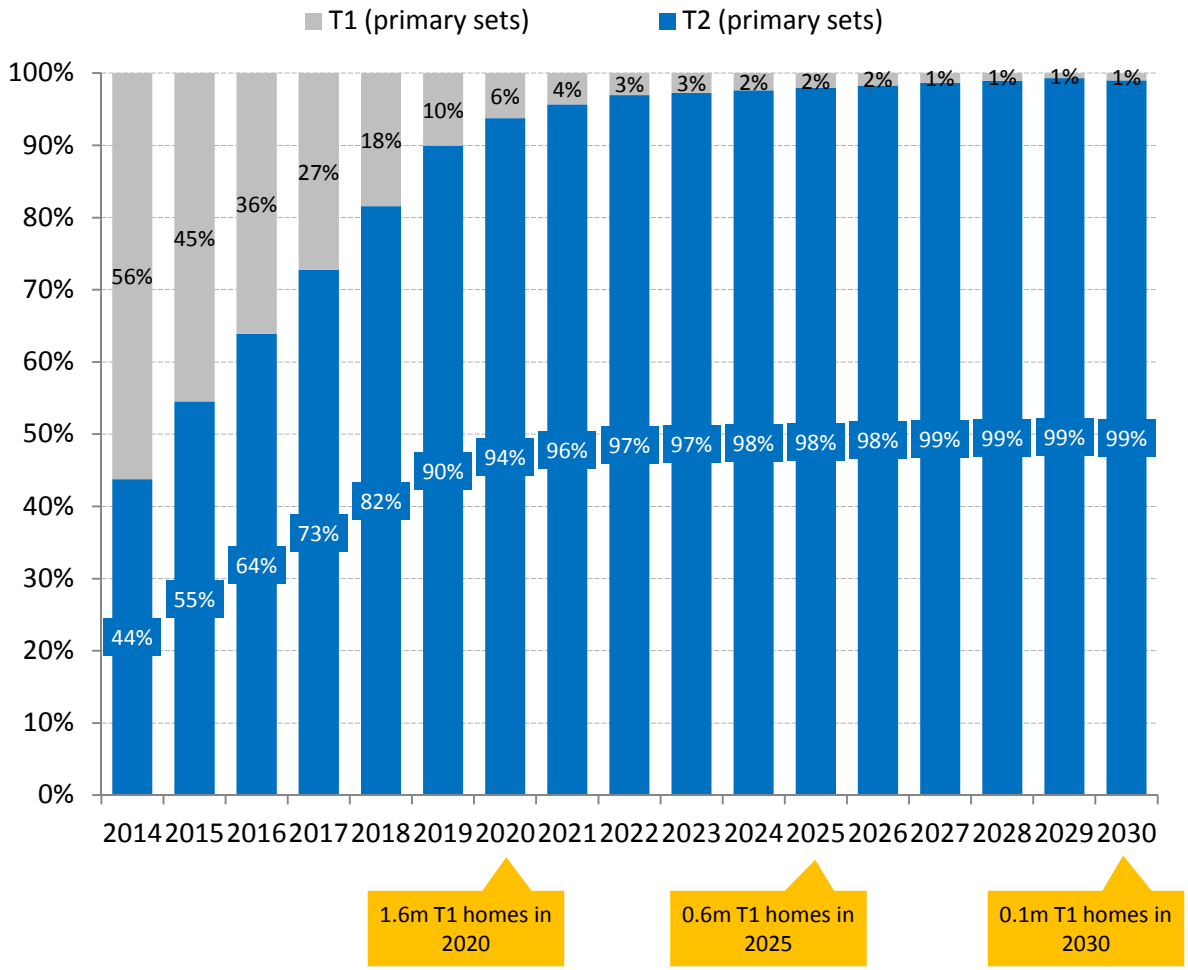
# In the absence of policy intervention, a market-led transition might take until 2030 to achieve near-universal T2 penetration of primary sets (and even then some refuseniks will remain)

- Our forecasts confirm that 1m TV households will remain T1-enabled by 2023, with all other households transitioning to T2 as a result of platform upgrades and TV replacement cycles

- In practice, there are likely to be a small minority of refuseniks that will not have replaced their TV set(s) – even by 2030. For example,
  - 11.5k households still have black and white sets (down from 212k in 2000)
  - The Switchover Help Scheme helped 1.3m households over its lifetime, and carried out 350k installations between June 2008-2010 (notably those with disabilities)
  - In June 2011 (18 months before DSO1), there were still 1.8m analogue terrestrial households

- We estimate that these refuseniks might number 100,000 homes by 2030 – such an outcome suggests that 100% T2 penetration cannot be guaranteed without some kind of public policy intervention

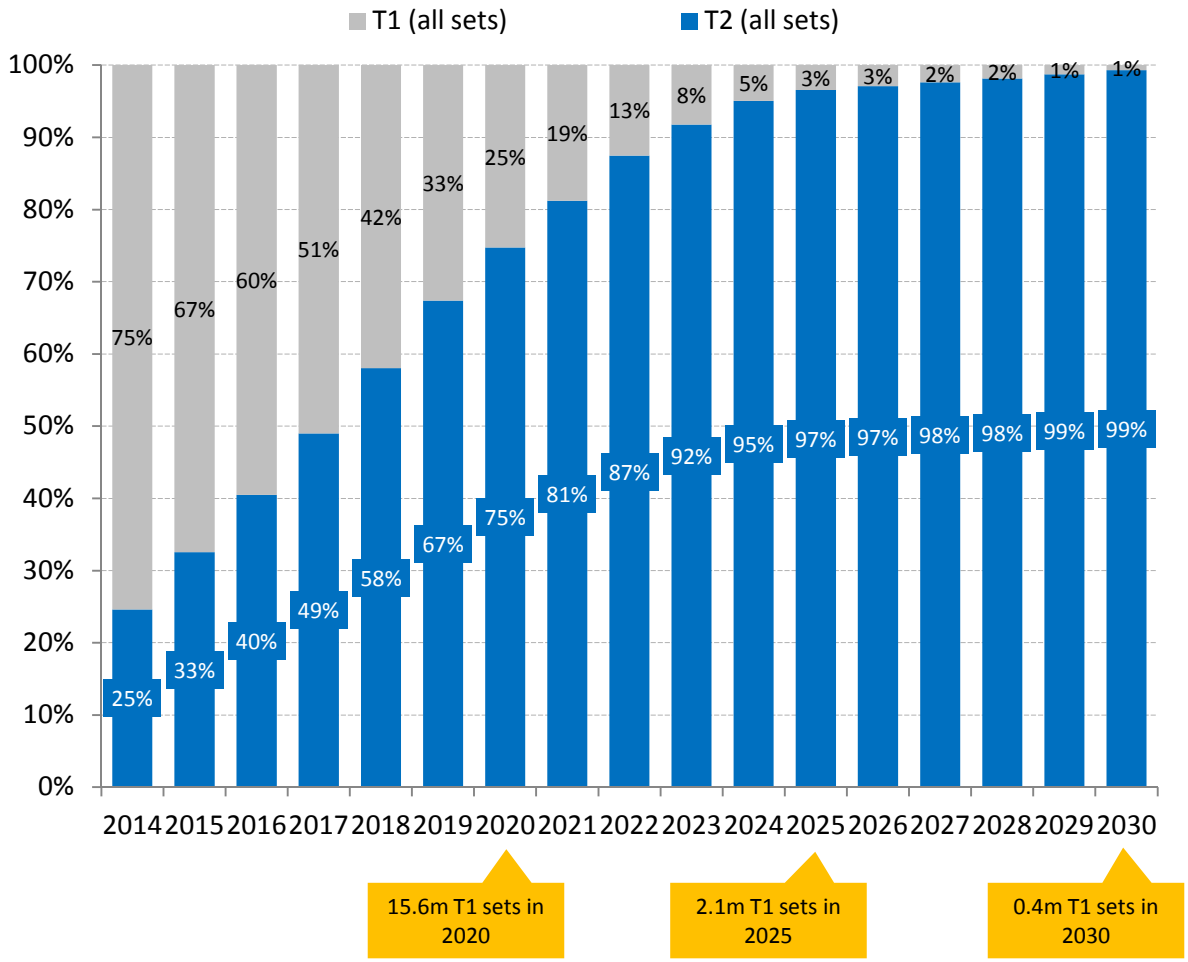
## Primary TV sets by DVB technology (m, HH)



# A market-led transition to T2 across all TV sets will take longer, with almost 0.5m sets still T1 by the end of 2030...

- The replacement cycle for secondary sets is always likely to lag behind primary sets
- Reaching near-universal penetration of all TV sets by 2030 implies that a market-led transition would take roughly two full TV replacement cycles
- Again, true 100% penetration is unlikely due to the existence of those refuseniks unwilling or unable to transition to T2 – even by 2030
- Note that some 2nd sets may not need to be replaced in the event that tablets become viable devices for receiving A/V services in other rooms

## All TV sets by DVB technology (m, HH)



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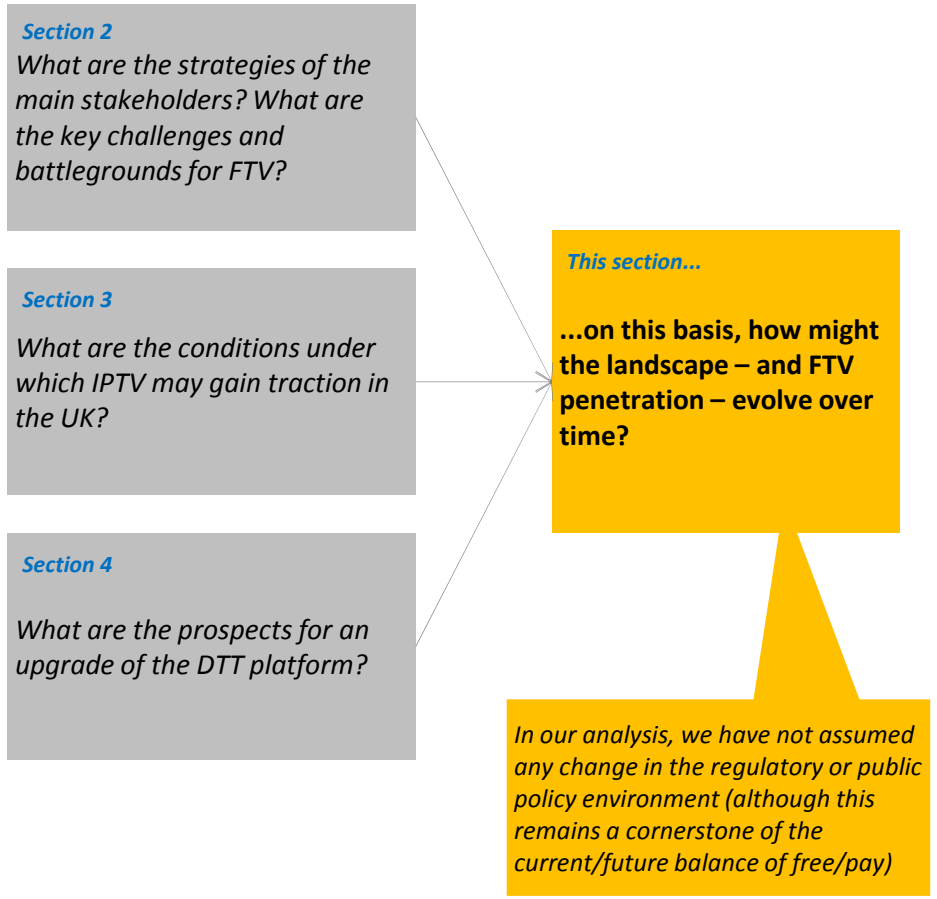
# In this section, we have provided our assessment of the future prospects for FTV platforms over the next 10 years...

- Our identification of the key dynamics and challenges facing the FTV landscape in the UK (and implicitly therefore the opportunities for pay operators) provides a series of hypotheses on which to base a forecast of FTV/pay-TV penetration over time
- In this section, we provide our forecasts of the future balance of free and pay platforms in the UK, and identify the key winners and losers from this trajectory
- We also provide a sensitised analysis, identifying the key variables that would have to change in order to alter the balance of free/pay away from our forecasts

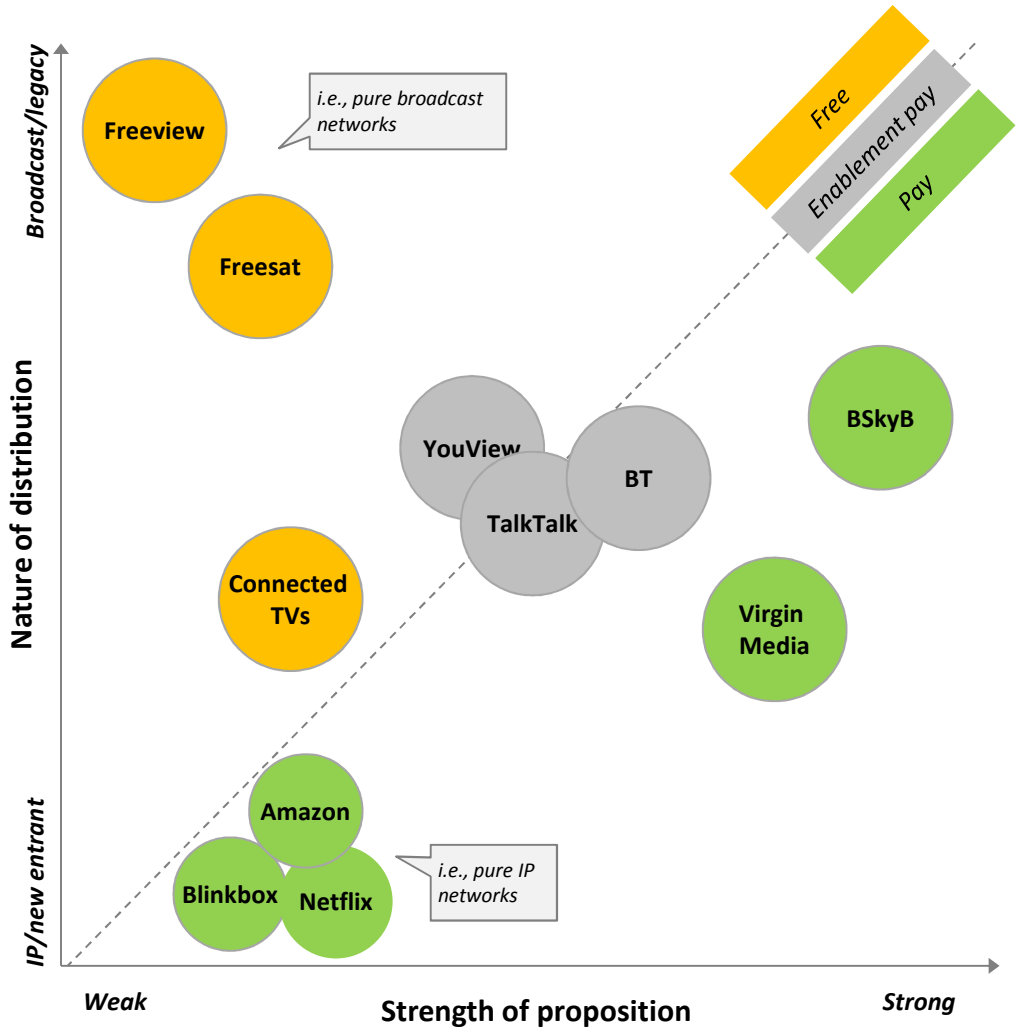
## Building blocks of our analysis in this section



## We suggest that legacy FTV and pay players will continue to evolve in line with broad market developments, allowing them to offer compelling propositions...

- We have compared the strength of the content propositions currently offered by the major TV service providers against the nature of their underlying distribution model
- These axes represent the key drivers of success in the platform market:
  - Those reliant on a single network face a capacity challenge – with IP-only networks reliant on investment/upgrades undertaken by third-parties, and DTT/DSAT-only networks face capacity constraints when seeking to launch additional services
  - Those with a hybrid broadcast-IP model are most likely to optimise delivery, enabling them to secure a critical mass of linear/non-linear services from a wide range of players
  - The crucial determinant of success will be the relative strength of the content proposition, which is ultimately what drives decision-making among consumers
- Our assessment of the platform market suggests that the legacy pay-TV players are the least competitively challenged, with BT, TalkTalk and YouView also demonstrating strength in proposition
- By contrast, the FTV networks of Freeview and Freesat look relatively exposed (as we detailed in previous sections)

**Platform propositions in the UK** *(current – illustrative)*

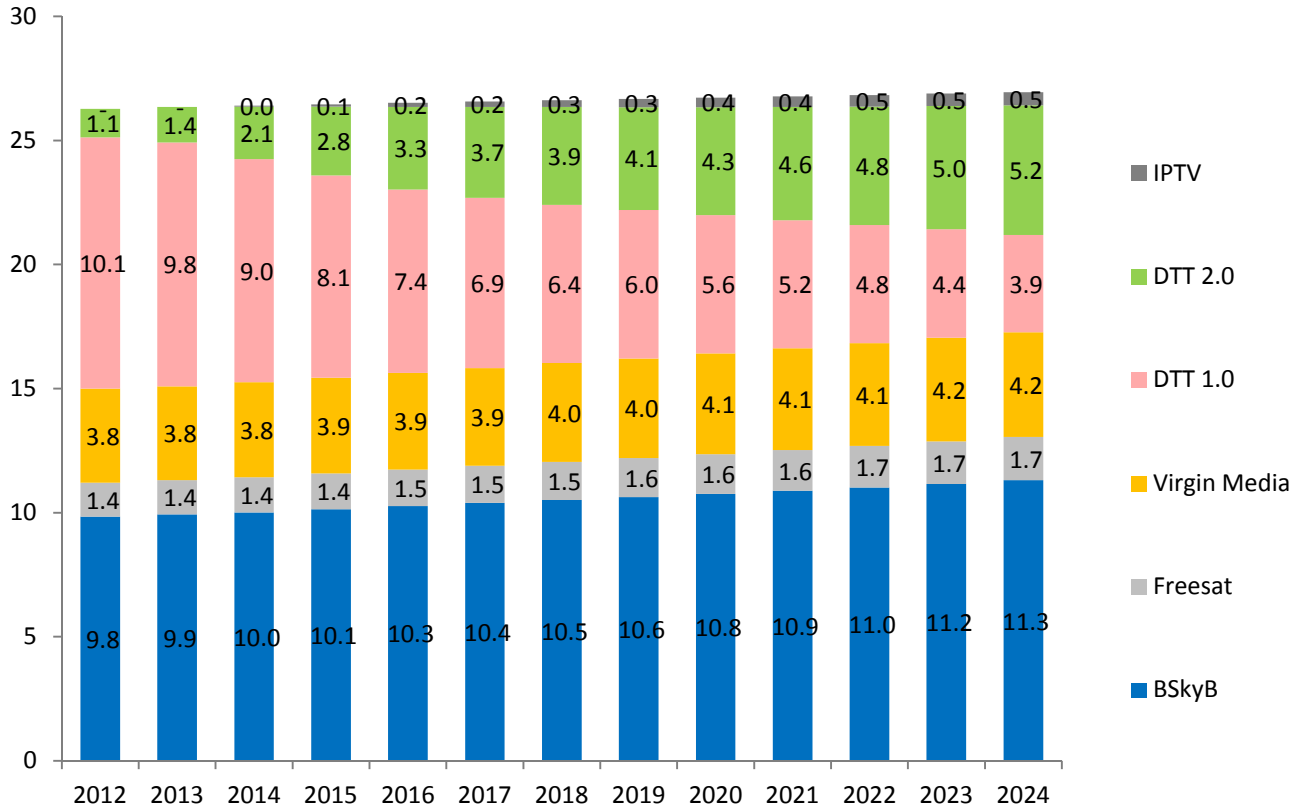



*Source: Mediatique*

# We forecast a continuing role for both Sky and DTT, with an established universe of connected/upgraded DTT homes by 2024...

- We have forecast the penetration of the key platform operators between now and 2024, as set out opposite
- A key outcome here is the continuing gains in market share from Sky as it evolves/expands its proposition and aggressively competes with other legacy players and the threat of new entry
- We estimate that DTT loses market share, although the weaknesses of Freeview are countered by the launch of YouView and connected TV sets which are all rooted in the DTT platform
- We do not forecast wholesale disintermediation of legacy platforms by new entrants, which is largely the result of the continuing role of linear TV channels which remain challenging to delivery over non-broadcast networks even by 2024. Nevertheless, we suggest that pure IPTV players (such as Apple or other new entrants, for example) may gain limited traction by 2024; we expect these services to be pay homes

## Penetration of TV households (primary set, m, 2012-2024)

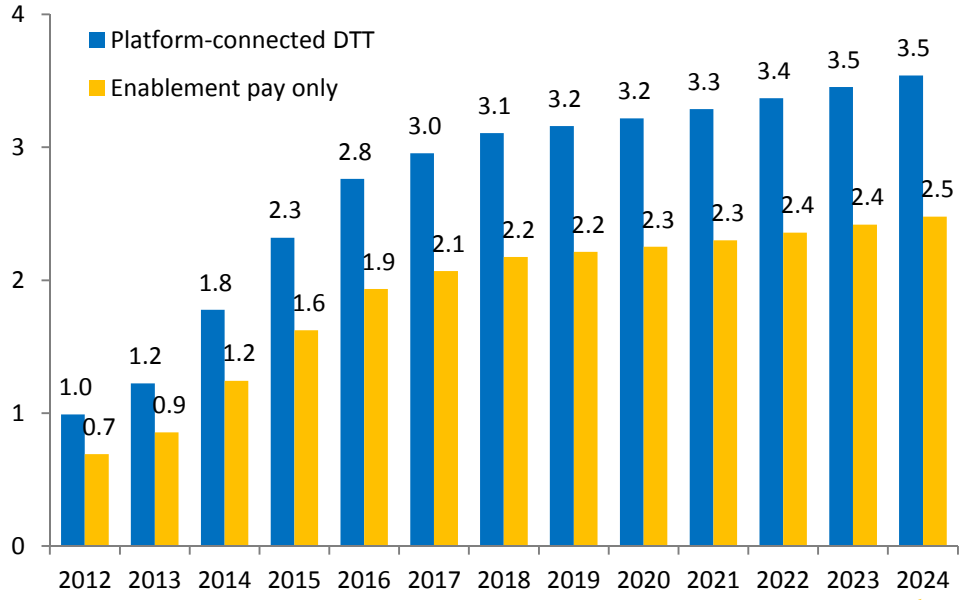



*Source: Mediatique*
*DTT 1.0 refers to Freeview only homes*
*DTT 2.0 includes connected TV sets, YouView and services from BT and TalkTalk*
*IPTV refers to emerging players that deliver all video (linear and non-linear) over IP only*

# We estimate that 2.5m – roughly 10% of UK TV homes – will take an *enablement pay service* by 2024...

- We estimate that enablement pay services will gain traction over the model period, driven by a number of key factors:
  - Bundling will continue to play a large part in the dynamics of platform competition; as broadband penetration reaches near-universal levels between now and 2024, there will be multiple opportunities for ISPs to incentivise broadband subscribers to take TV services within a bundle
  - ...this will also reflect the increasing usage of on-demand/catch-up services among existing FTV households which are the foundation of enablement pay packages
  - Significant marketing investment by YouView, BT and TalkTalk will continue to raise awareness of catch-up services and the benefits of a holistic proposition including linear/non-linear
  - In particular, BT will seek to recoup its investments in network upgrade and sports rights by increasing ARPU to existing customers. Even incremental payments (via low-cost monthly enablement fees) will improve the return profile
- Our working assumption is that BT and TalkTalk will account for the lion's share of enablement pay subscribers over the model period. In practice, other ISPs (such as EE) might enter the TV market and seek to secure enablement pay revenues. In addition, depending on the costs incurred by Sky in acquiring new subscribers, it might seek to launch enablement pay packages over time, as this would represent an incremental source of ARPU

**Penetration of enablement pay platforms (primary sets, m)**



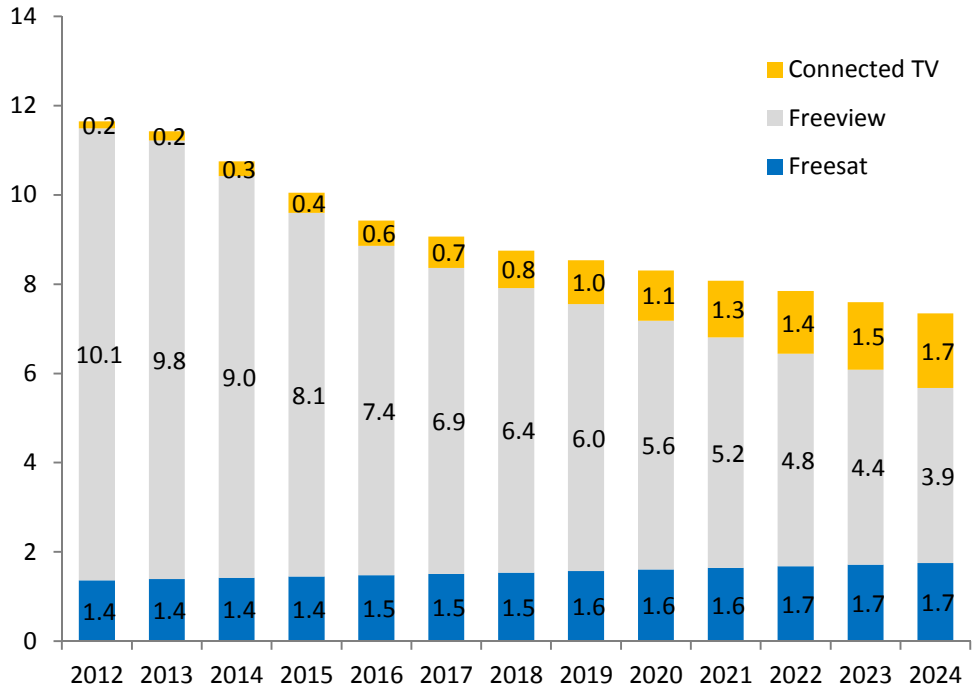

*Source: Mediatique*

*Platform-connected DTT number shows total subscribers to BT, TalkTalk and YouView*
*2.5m of these will take an enablement pay package by 2024 – the remaining 1m homes will pay for a further pay/premium TV package by this point*

## We estimate that the FTV universe will decline by 2024 – reflecting the relative weaknesses in the Freeview and Freesat platforms, and the migration of existing FTV homes to enablement pay packages...

- The major implication of subscriber retention at Sky/Virgin and growth in enablement pay is a decline in the FTV base by 2024
- Our assessment is rooted in the relative weakness of Freeview – which effectively becomes the "new analogue" from which other platforms poach subscribers
- The DTT platform is protected somewhat by offering more HD channels and by the launch of YouView (and affiliated propositions from BT and TalkTalk), but this compromises the FTV landscape by driving households to enablement pay
- One mitigating factor for FTV is the take-up of connected TVs, where near-universal broadband penetration enables FTV homes to connect their TVs to the internet to secure on-demand services on a free basis
- Even by 2024, there are likely to be roughly 7m homes that will remain FTV homes via Freeview and Freesat, which have resisted incentives to bundle their TV service within an ISP contract or to connect their TV to the internet
- We assume a relatively large number of homes will some form of FTV on second sets (although this segment will also be competed for my "all-home" propositions from bundled service providers)

**Penetration of FTV platforms (primary sets, m)**

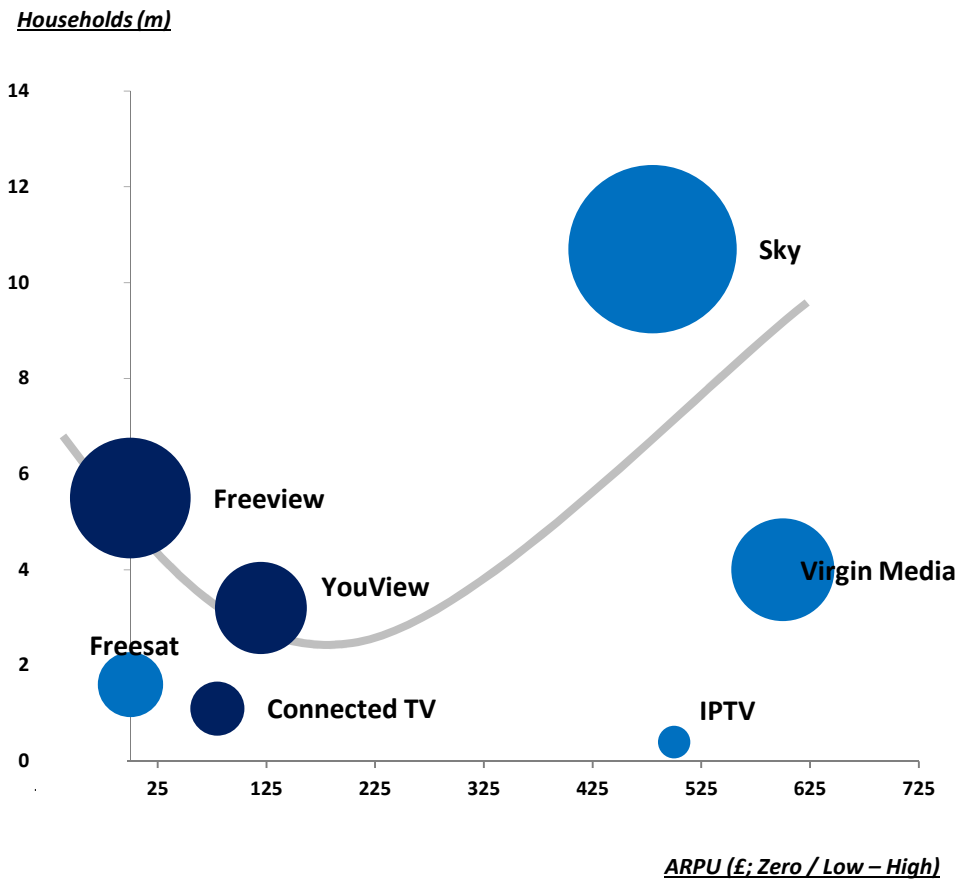



*Source: Mediatique*
*Connected TV homes refers to TV sets with both a DTT tuner and an IP connection that is regularly used to access on-demand services (with no subscription payable)*

# By 2024, we expect the TV landscape to be less polarised than today, with fewer homes taking FTV services and an increasing number of homes at the low-ARPU level...

- Our assessment of the future trajectory of the platform market suggests that the market will becoming significantly less polarised than currently
  - The market will edge further towards a pay-TV world, rooted in Sky and Virgin Media
  - Traction at the low-ARPU level (via YouView, BT and TalkTalk) will be rooted in enablement pay. The relatively low ARPU secured by these operators also reflects the relatively low entry prices (e.g., TalkTalk) and the strategy of giving free access to premium services (e.g., BT – giving away BT Sport to protect broadband revenues)
  - The DTT platform will retain a primary role in the distribution of linear channels for an expanding number of providers
  - The FTV landscape will retain traction via Freeview and Freesat, although their share of the market is diminished compared to today
  - We note that our assumptions are based on the current regulatory environment – i.e., we do not assume an early transition of DTT to T2 (with incremental HD services)

## A less polarised market in future: households vs ARPU (2024)

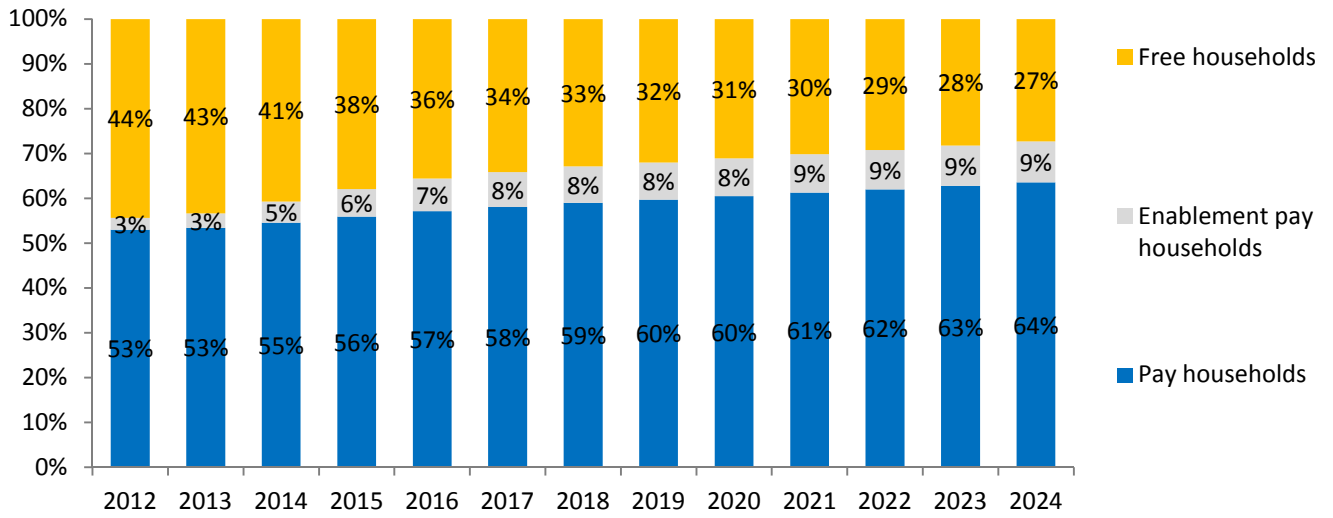



*Source: Mediatique*
*Dark blue bubbles refer to platforms rooted in DTT distribution*
*YouView includes BT and TalkTalk*

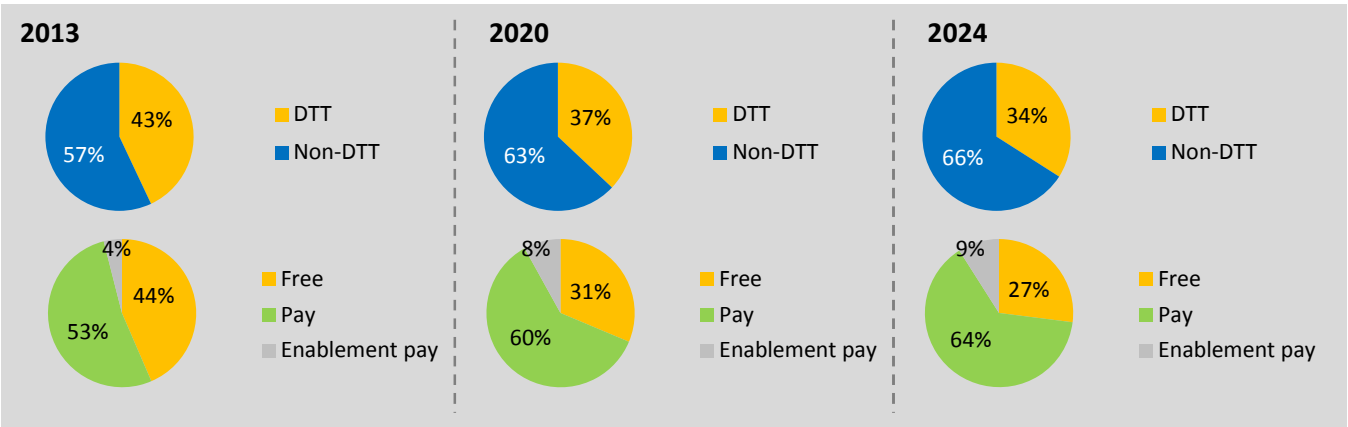
# We estimate that the FTV universe will represent less than 30% of homes by 2024, with 34% of homes reliant on DTT for the delivery of their primary TV service...

- Our analysis confirms that the identified challenges to FTV platforms will have a material impact on the scale of the FTV universe by 2024
- Implicit in such a trend is a reduction in the number of households that rely on DTT as their principal means of receiving TV services. Nevertheless, by 2024, DTT will still deliver TV services to 34% of homes on the primary set

## Penetration of TV homes, by business model (%, primary set)




## DTT vs FTV penetration: 2012 vs 2020 vs 2024 (% of TV homes, primary sets)



# We have considered the key drivers of change that could change the course of our base-case forecasts...

## Drivers of change in the future landscape*

**Break with traditional content economics**

- Current market dynamics are rooted in established content economics, whereby content ownership (including of original content, sports/movie rights) is a significant determinant of success
- Content owners are able to determine content availability on various windows/devices and to grant (or withhold) exclusive access to influence market outcomes – this is characterised by windowing strategies, most of which are currently structured in favour of linear transmission
- Any shift that entrenches or dilutes the availability and exclusivity of compelling/popular content will alter market outcomes

**Enhanced network coverage and speed**

- A shift away from broadcast networks to a greater use of IP delivery (for all content, including linear and non-linear) would represent a key structural change to future dynamics
- Implicit in such a trend would be a breakdown of barriers to entry for new content aggregators, potential deflation in the costs of content delivery and accelerated convergence between fixed/mobile, in-home/out-of-home

**Fundamental changes in mass-market consumer behaviour**

- A more fundamental shift in consumer preferences away from long-form content to new forms of engagement will mitigate the role of legacy players and lead to new business models
- Such behaviours may allow new entrants to gain traction, and empower new business models that rely on search/recommendation – including both free and pay models

**The role of new entrants**

- These drivers of change will be characterised by the strategic responses within the value chain, including the impact of new entry (and the threat thereof) on the strategies of legacy players
- The speed at which new entry occurs and the strength of responsive legacy innovation itself becomes a determinant of the scope/scale of change

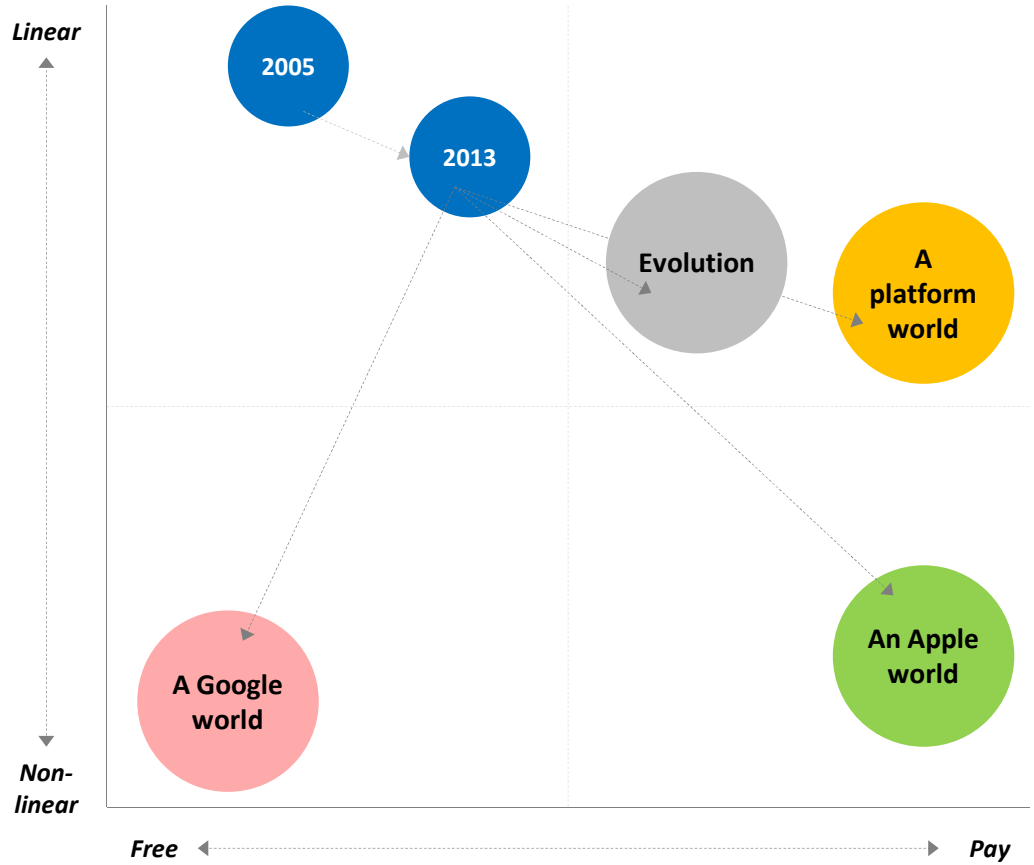
** All scenarios presented here will be considered on the basis of no change to the regulatory framework or policy: in particular, we make no assumptions about the PSB regulatory compact, changes to status-quo spectrum allocation or an extension of prominence rules.*

# A range of outcomes are possible from the interplay of these drivers of change...

| Scenario | Parameters of change within each scenario: Content creation/aggregation | Distribution / models | Consumption | FTV impact |
|---|---|---|---|---|
| Evolution | ▪ Strong stable of FTV content remains a cornerstone of production. Premium content remains a primary driver of pay-TV access | ▪ The key distribution platforms remain Freeview, Sky and Virgin<br>▪ New roles for YouView, connected TVs<br>▪ Shift toward pay at the expense of free is largely a function of the growth of "enablement" pay | ▪ Increasing, though not universal, demand for non-linear access<br>▪ Existing subscriber relationships retain traction<br>▪ Linear consumption remains critical mass | FTV/pay mix |
| A platform world | ▪ Content ownership becomes a more dominant determinant of market outcomes<br>▪ Legacy aggregators extend rights to multiple devices/windows | ▪ Pay windows become strong gate-keepers for all content – including premium original content<br>▪ Hybrid models optimise broadcast-IP delivery | ▪ Bundled propositions become more important, spanning multiple access points (e.g., fixed, mobile, linear, non-linear); bundled (e.g., triple play) favours authenticated consumption on multiple devices | Pay-TV bias (traditional pay-TV model) |
| An Apple world | ▪ Content rights are disaggregated<br>▪ Premium content retains its appeal<br>▪ Non-exclusive access becomes the norm | ▪ IP networks deliver content to multiple connected devices<br>▪ Content is aggregated within libraries behind pay walls (i.e., the iTunes model)<br>▪ SVOD and micro-pay models become the norm | ▪ Consumption favours non-linear access over multiple connected devices<br>▪ Consumer behaviour favours discrete purchase/consumption (alongside some traction for SVOD) | Pay-TV bias (likely to be SVOD) |
| A Google world | ▪ Content rights are disaggregated and fragmented among many players – rights windows collapse<br>▪ Content is available on an anytime anyhow basis | ▪ Content is widely available on multiple portals, distributed over IP networks<br>▪ Search engines play a major role in surfacing/presenting content<br>▪ Advertising becomes primary funding mechanism | ▪ Consumption favours non-linear access over multiple connected devices<br>▪ Behaviour embraces new forms of consumption, linked to social networks and search engines | FTV bias |

# These scenarios would result in starkly different market outcomes over time – with differential outcomes for the role of free and pay...

## The parameters of a changed world: outcomes in 2024 *(illustrative)*




*Source: Mediatique*
*Y-axis refers to nature of leisure consumption*
*X-axis refers to nature of primary business models*

- An evolutionary outcome represents a broad extension of the current trajectory, and is rooted in presently identified dynamics, including main set connectivity, triple-play bundling models and robust linear viewing,
- Other scenarios will emerge as a result of changes in the relative importance of the key levers identified
- Of these factors, network improvements might be transformative (and will in turn iteratively lead to changes in revenue models, business strategies and possibly accelerate shifts in content availability)
- ...but these improvements alone are a necessary but not sufficient condition to unlock more transformative scenarios; changes in consumer behaviour and preferences (enabled by changes in technology) will be crucial
- In practice, each of these more radical scenarios will contain a range of behaviours, players and outcomes, and we would expect a range of models and players to emerge, within a hybrid landscape of free and pay models. Indeed, consumer preferences are unlikely to be uniform, and households may will ultimately employ a "pick n mix" approach to consumption, securing content from multiple players across a range of business models

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4. The transition towards DVB-T2 standards in the UK
   - The role of T2 in the platform market
   - Drivers of transition towards DVB-T2

5. The evolution of the platform market to 2024

6. **Appendices**
   - **A framework for considering the strategic incentives of multiplex operators towards a T2 transition**
   - Profiles of selected markets

# In considering the practical barriers to a T2 transition, we have developed a framework for considering the commercial incentives for multiplex operators to switch to T2 standards...

- A switch to T2 has opposing implications on multiplex operators, as T2 standards effectively release more capacity for a given amount of spectrum (allowing them to lease more channels, or launch capacity-rich services such as HD channels). However, a channel that secures new T2 capacity will only be able to address T2-enabled homes – this places a multiplex operator's existing revenues at risk and potentially locks in lower prices for T2 capacity
- Against this, however, is the impact of remaining at T1 (and therefore lacking a key enabler of platform evolution) on the size of the DTT universe
- In the following pages we have considered a framework for considering if and when multiplex operators might reach a commercially viable time to switch their operations to T2
- Our framework is necessarily an abstraction from reality, and we highlight opposite some practical challenges to our consideration of commercial incentives
- We have focused on commercial multiplex operators here, as the PSB multiplexes have universality obligations which makes a transition to T2 more problematic at penetration levels less than 100%

## Issues in determining commercial incentives for multiplex operators

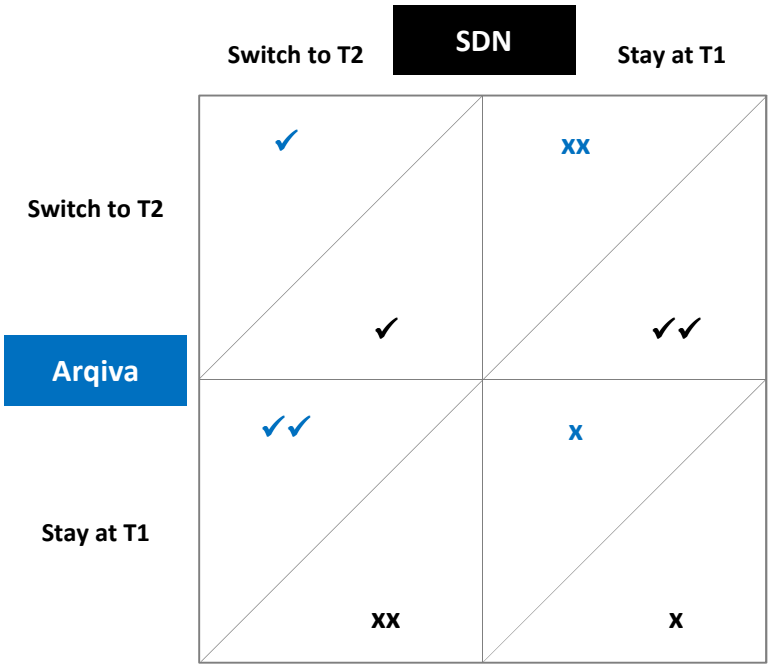
| | |
|---|---|
| **Contractual relationships** | ▪ DTT capacity contracts range in length and complexity, with different start/end points<br>▪ Coordinating the renewal of contracts to ensure that tenants have certainty of distribution presents a strong challenge to shifting broadcast standards |
| **Lack of an "HD premium"** | ▪ There is limited evidence that channels are prepared to pay more for an HD slot on DTT than an SD slot (this largely reflects channels' inability to secure higher revenues from HD channels versus SD)<br>▪ This presents a strong disincentive to move capacity to T2 if operators cannot secure a price premium |
| **Circular dynamics** | ▪ Multiplex operators will only switch to T2 if they can secure higher revenues, but they can only secure higher revenues if the DTT platform outperforms (which is dependent on there being HD services launching on T2) |

**Our framework in this section has focused on relative revenue outcomes across T1 and T2 multiplexes. In practice, there will also be capital expenditure and operating costs related to any move (some of which will be passed onto channel tenants). Other costs in future might include AIP. For modelling purposes, we have excluded costs from our analysis.**

# The existence of competing commercial multiplex operators (Arqiva and SDN) further complicates the incentives towards a T2 switchover...

- The decision by one multiplex operator to switch from T1 to T2 will have important implications for the commercial incentives of the competing multiplex operator
- We suggest that there is a structural prisoner's dilemma in the UK marketplace
  - Were Arqiva and SDN to both switch to T2, its tenants would suffer from a loss of coverage with a potentially negative impact on prices paid
  - Were one operator to switch to T2, a credible competitor response may be to remain at T1 (with "universal" commercial coverage) and poach key contracts from the T2 operator among those clients that place a premium on having universal coverage to sustain mass-market audiences
  - In this context the difference in value ascribed by ad-funded channels between sub-national and national coverage is unlikely to be linear, as there is a premium for ubiquity and *relative* share compared to competitors is a critical determinant of advertising prices
- This dilemma highlights one of the execution risks of shifting to T2 on a unilateral basis. Such a dilemma can be overcome if the revenue impact of launching additional channels via T2 outweighs the counter-factual T1 revenue – we explore a framework for this in the following pages

## A prisoner's dilemma for multiplex operators (illustrative)




| ✓= revenue gain | x = revenue loss |
|---|---|

- If both operators move to T2, they will both benefit from an outperformance of DTT
- If they both stay at T1, they will both suffer from an underperformance of DTT
- If one multiplex operator shifts to T2 (and the other stays at T1), the T1 operator may poach key contracts from the T2 operator (on the basis that they can still offer universal commercial coverage)

# A decision to switch to T2 standards will be informed by the potential revenues that such a switch could secure compared to the existing contractual revenues under a T1 configuration...

- In the absence of uncertainty and the coordination issues that we highlight, a multiplex operator may make a commercially rational decision to switch its capacity to T2 at the point where potential revenues from a T2 multiplex outweigh the existing revenues from a T1 multiplex
- Such revenues will be determined by the scale of capacity (number of slots) and the price of such capacity (price per slot)
- A T1 multiplex will generate different capacity/price outcomes from that of a T2-configured multiplex
- A rational multiplex operator will seek to optimise revenue outcomes across the key variables (saleable slots, DTT households, demand for slots and price per slot)
- We set out opposite the key dynamics that will determine multiplex operators (with pricing trends analysed overleaf)

## Dynamics influencing revenue outcomes

| | Supply (S) | Coverage | Addressable base | Price (P) | Revenues (=SxP) |
|---|---|---|---|---|---|
| **Commercial multiplex on DVB-T1** | ▪ T1 standards currently allow up to 13 standard-definition channels per multiplex | ▪ All DTT homes (whether with T1 or T2 receivers) will be able to watch services carried on a T1 multiplex | ▪ Lack of HD services on DTT is likely to impair the platform, resulting in churn away from DTT to competing platforms<br>▪ DTT may secure 7.0m homes by 2030* | ▪ The current price of DTT capacity is sustained by having universal coverage, but compromised by an under-performance of DTT | ***A combination of supply (# slots) and price (determined by coverage and DTT base) will determine the scale of revenues under each scenario*** |
| **Commercial multiplex on DVB-T2** | ▪ A transition to T2 should allow the multiplex to continue carrying 13 SD channels and an additional 3 HD channels<br>▪ ...or up to 7 high-definition channels | ▪ T2 multiplexes will reach fewer homes than a T1 multiplex (in line with our forecasts)<br>▪ We understand too that a retune to allow the carriage of 13SD and 3HD channels will also compromise some coverage | ▪ The launch of HD services on DTT will strengthen the platform's consumer proposition<br>▪ With the launch of additional HD channels, DTT may hold on to 10.5m homes by 2030** | ▪ Channel tenants will be prepared to pay less for T2 slots as a result of their reduced coverage<br>▪ ...but prices may be protected over time in line with the out-performance of DTT | |

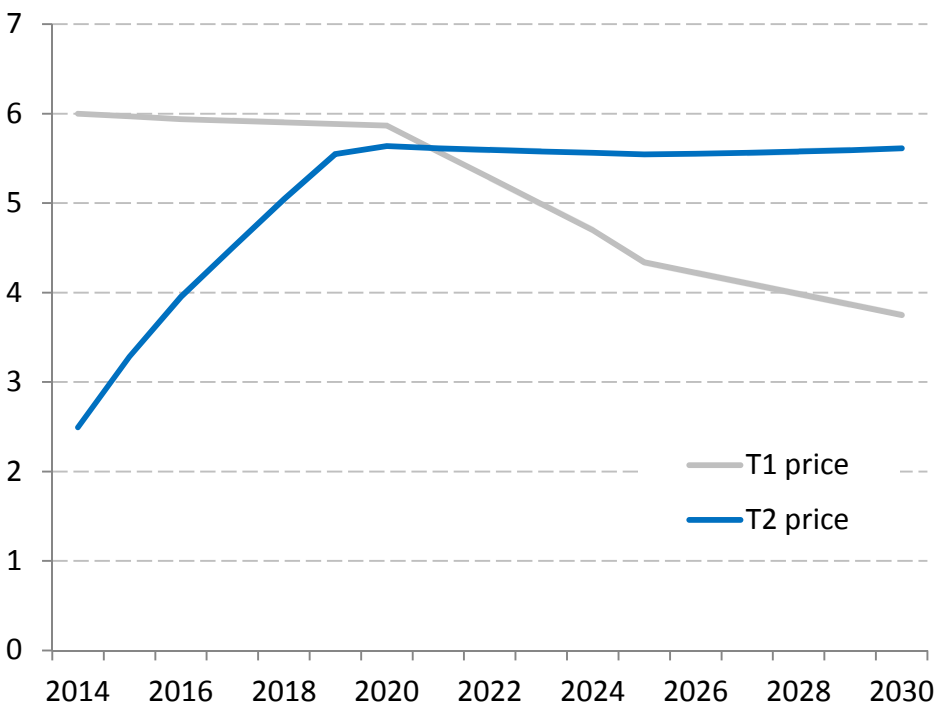
** Based on our forecast earlier in this report ** We have not made a direct link between this DTT outcome and a specific line-up of channels – this is a modelling assumption that (up to) 3 new HD channels per commercial multiplex might secure a DTT outcome of 10.5m homes by 2030*

*We explore this in more detail overleaf*

# In the short term, a multiplex operator is likely to secure a higher price for T1 capacity (reflecting higher coverage); over time, T1 prices will be affected by the underperformance of DTT...

- The interplay of DTT penetration and T1/T2 coverage provide proxies for assessing the demand for DTT capacity in T1 and T2 scenarios, and are a crucial determinant of prices for DTT capacity. Channels will pay more for DTT slots with near-universal coverage that address a significant universe of DTT homes
- As a working assumption, we assume that current T1 slots are valued at approximately £6m per year, although this is likely to decline as the number of DTT homes falls under a T1-only scenario (where DTT distribution becomes less attractive and less financially viable for channel tenants). Were prices to fall in line with the decline in DTT penetration, T1 slots might be priced at £3.8m by 2030
- At equivalent coverage, T2 distribution on its own is unlikely to be priced differentially to a T1 slot. Therefore in 2014, we might argue that T2 slots are priced at 42% of a T1 slot (in line with current T2 penetration). Over time, as a T2-configured platform enables the DTT platform to outperform, we might expect the price of T2 slots to grow both in line with T2 penetration and in line with the outperformance of DTT
- ...on this basis, T2 prices might reach £5.6m by 2030
- The uses of T1/T2 capacity will also play a role – were a multiplex operator to use T2 capacity to launch SD channels only, it would potentially over-supply the market with a corresponding impact on price

**Price trends in DTT capacity (£m, per year)**




This exercise is necessarily arbitrary in its approach to determining price trends. In practice, the price of DTT capacity is determined by negotiations between multiplex operators and channels (including channels' expectations of trends in current/future supply and demand)

# A multiplex operator must choose an optimal T2 line-up in order to judge the outcomes against the existing T1 outcome...

## T1-only: SD channels

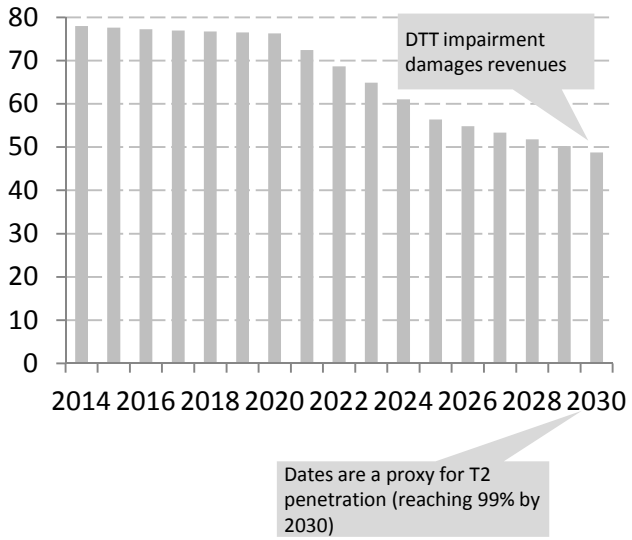
- In this scenario, a multiplex operator continues to lease its existing 13 SD channels in line with the T1 price (over time)
- As the lack of HD channels impairs the DTT platform and reduces the price of DTT capacity, the multiplex operator's revenues decline
- This is the central case against which all other commercial outcomes are judged

## T2-only: HD channels

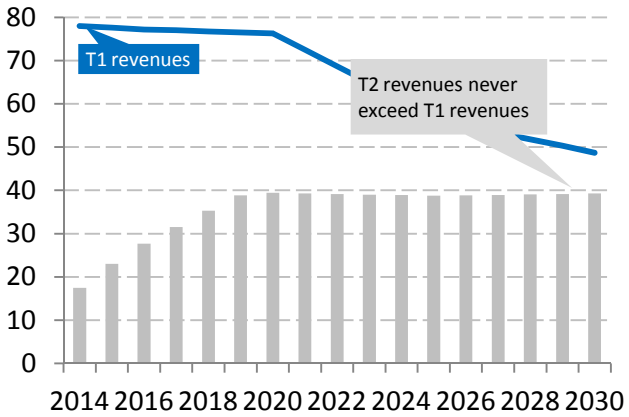
- In this scenario, the operator transitions its multiplex to T2 and launches 7 HD channels
- This provides some protection to the DTT platform, although without any explicit price premium for HD capacity. As a result, the price protection that this creates is not sufficient to outweigh the impact of selling fewer slots (7 channels vs. 13 under T1)
- On this basis, it is not rational to switch to T2 to launch HD channels only at any point

- These outcomes represent the two extreme cases for a multiplex operator – of remaining at T1 or using T2 to launch HD channels only
- An optimal outcome is likely to exist which optimises the number of SD vs HD channels such that:
  - It safeguards the DTT platform without compromising the number of saleable slots
  - It optimises the price at which these slots can be sold
  - It caters for demand among existing and potential channel tenants
  - It delivers an acceptable trade-off between T2 coverage and the price discount that existing tenants would demand for a loss of coverage

*Multiplex revenues, £m*



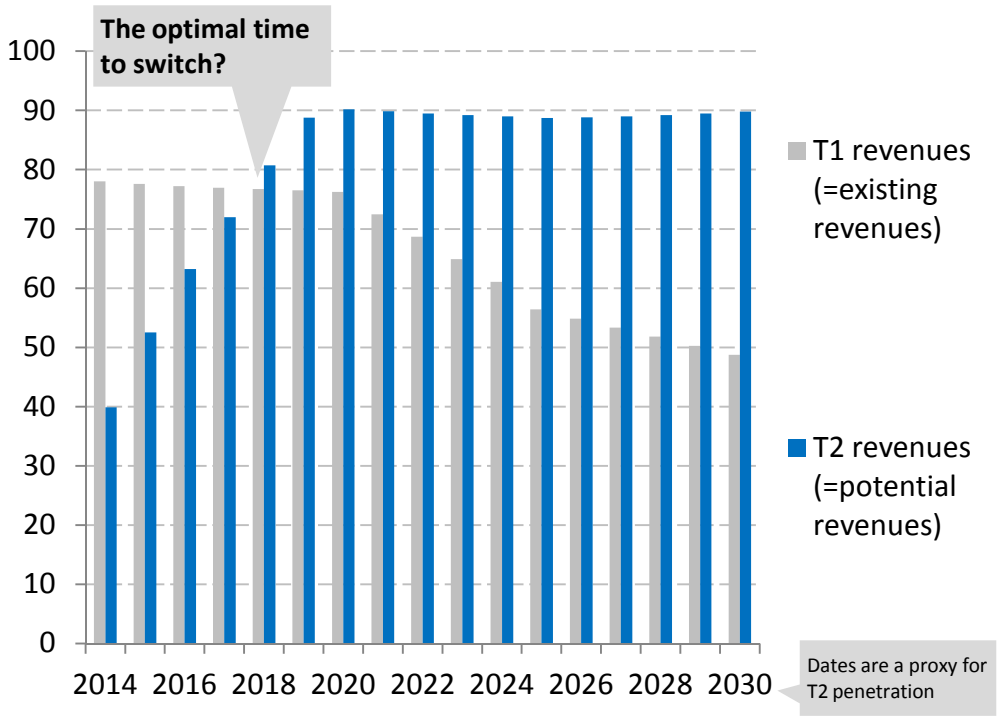

*Multiplex revenues, £m*



## Ultimately, the multiplex operator will seek a scenario which optimises the number of channels it can sell against the impact on DTT penetration (which will determine the price at which it can sell these channels)

- In practice, the multiplex operator may launch a combination of SD and HD channels – this would allow the operator to sell a greater number of channels (at a consistent price) and may also boost the overall DTT proposition
- We have run a scenario whereby a multiplex operator retains its existing 13 SD channels and launches a further 3 HD channels per multiplex
- ...we have assumed that the SD and HD slots are sold at the same T2 price, which is influenced by the scale of coverage and the addressable DTT base over time. As such, the multiplex operator is likely to secure lower prices from its SD tenants than it would have secured by remaining at T1 (in line with differential penetration)
- In this scenario, the operator's T2 revenues exceed its T1 revenues at a T2 penetration rate of 85% during 2018
- **We reiterate that this framework models a potential outcome for a single multiplex operator, and makes a series of assumptions on linear potential price movements and DTT outcomes as a result of changes in coverage and the line-up of HD and SD channels**

**An optimal time to switch to T2:: T1/T2 revenues, £m, per year**




We can summarise the framework as follows:

- T1 revenues = # slots x price per slot*
- T2 revenues = # slots x price per slot*

(*where price per slot is a factor of T1/T2 coverage and DTT penetration)

**The multiplex operator will switch to T2 in the year where T2 revenues exceed T1 revenues**

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## France

*At a glance:*

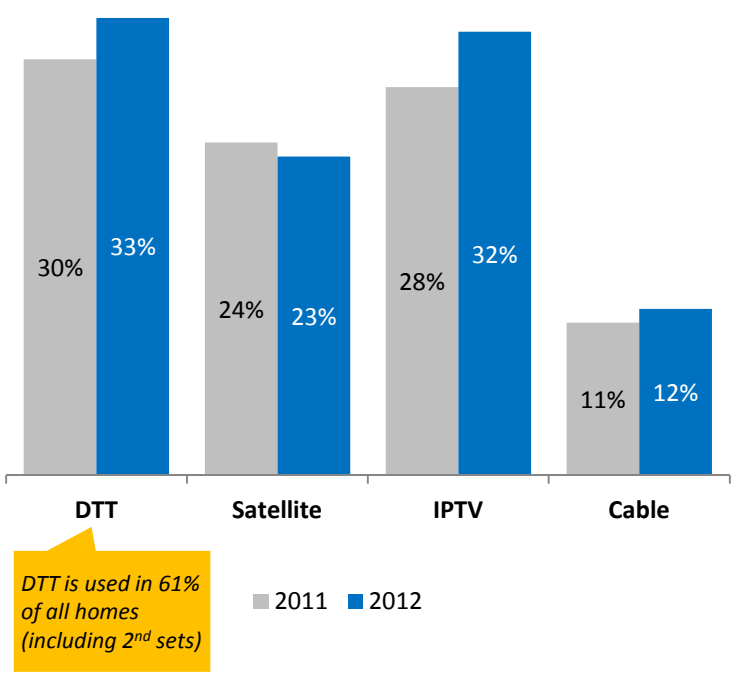
| | |
|---|---|
| **Number of TV households** | 27m |
| **IPTV penetration** | 32% |
| **Fixed broadband penetration** | 79% |
| **Superfast broadband penetration** | 9% |
| **Average broadband speed** | 6.5 Mbps |
| **Linear viewing** | 87% |

# France has a competitive IPTV market with near-universal coverage, enabling IPTV to secure significant traction as the primary TV provider...

## Overview of the IPTV market in France

| | |
|---|---|
| **Overview** | ▪ IPTV services were launched in 2003 (two years before DTT), enabling telcos to establish a strong foothold in the TV market<br>▪ IPTV is available as part of bundled propositions from France Telecom (Orange), SFR, Free, Bouyges Telecom and the cable network Numericable<br>▪ France has the highest household IPTV penetration worldwide |
| **Availability** | ▪ France's IP multicast network reaches over 90% of the population, enabling the high take-up of IPTV services as the primary form of TV reception |
| **VOD market** | ▪ At present, Canal+, Netgem and Virgin Mobile (Studio Box) have SVOD offerings in France, and Netflix have held formal discussions about launching their service in the near future<br>▪ SVOD content is restricted in France. Under current rules, a film cannot appear in an on-demand video service that is bought as a monthly subscription until three years after its debut in cinemas<br>▪ 89% of prime time content shown by 'historic channels' is available on broadcaster catch-up services (e.g. My TF1, Pluzz, Arte+7, M6 Replay)<br>▪ TVOD players in France are required to invest 15% of their turnover in European works and 12% in French works<br>▪ A recent survey suggests that 57% of French people stream videos at least once a week, and 57% watched a programme on catch-up. However, only 34% paid for VOD content<br>▪ Movies and series are the most downloaded to own genres, and these are consumed almost exclusively (95%) on a computer |

## Platform penetration (% of primary sets, TV households)




*Source: Ofcom International Communications Market reports, Akamai "The State of the Internet Q3 2013", CSA, OECD, ITU, Analysis Mason, European Parliament, Iliad, GfK*
*Note: Platform share based on Ofcom's International Communications Market reports. Platform penetration may vary from previous Mediatique reports or CSA reported figures*

# Public policy in France remains committed to the future evolution of the DTT platform, and there is currently consultation on the implications of 700 clearance...

## Factors affecting broadcast spectrum clearance

**Spectrum auction**

- France's communications ministry (DGMIC) and media regulator (CSA) have launched a joint consultation over the future of DTT after a probable reallocation of spectrum in the 700 MHz band to telecom operators
- The agencies have emphasised that DTT will continue to play an important role in French broadcasting and that the debate is over the relative mix of technologies (mobile vs. television) following any spectrum reorganisation
- Views are being sought on multiple topics, including service mix (in particular whether HD will become the standard format for DTT), the evolution of compression technologies, the evolution of reception equipment, the impact of spectrum loss and the potential for convergence between TV and mobile services

**T2 transition**

- All DTT channels in France currently broadcast in DVB-T, with multiplexes using a mix of MPEG-4 and MPEG-2. The CSA has been pushing for a transition to DVB-T2 and HEVC in order to evolve the platform and increase the number of HD channels available. Trials of DVB-T2 are currently underway in various cities across France
- The CSA is seeking to launch a DVB-T2 multiplex to carry UHDTV channels in 2018, with a transition from MPEG-2 to MPEG-4 for all multiplexes by the end of 2015, and a further full transition to DVB-T2 by the end of 2020

## Germany

*At a glance:*

| | |
|---|---|
| **Number of TV households** | 38m |
| **IPTV penetration** | 5% |
| **Fixed broadband penetration** | 82% |
| **Superfast broadband penetration** | 48% |
| **Average broadband speed** | 7.6 Mbps |
| **Linear viewing** | 92% |

# Germany's IPTV providers have struggled to gain traction against the large cable and satellite operators...

## Overview of the IPTV market in Germany

**Overview**

- IPTV services are provided by Deutsche Telekom and Vodafone (following the withdrawal of Telefonica's Alice TV in 2013)
- Deutsche Telekom operates under the Entertain brand, and is the largest of the two operators with more than 2m subscribers – with Vodafone at close to 200k subscribers
- Both providers are seeking to extend their functionality to compete with the dominant cable providers: in July 2013, Deutsche Telekom launched a multi-screen TV service 'Entertain to Go', offering access to around 40 TV channels from PC, laptop and iPad on users' home WiFi networks

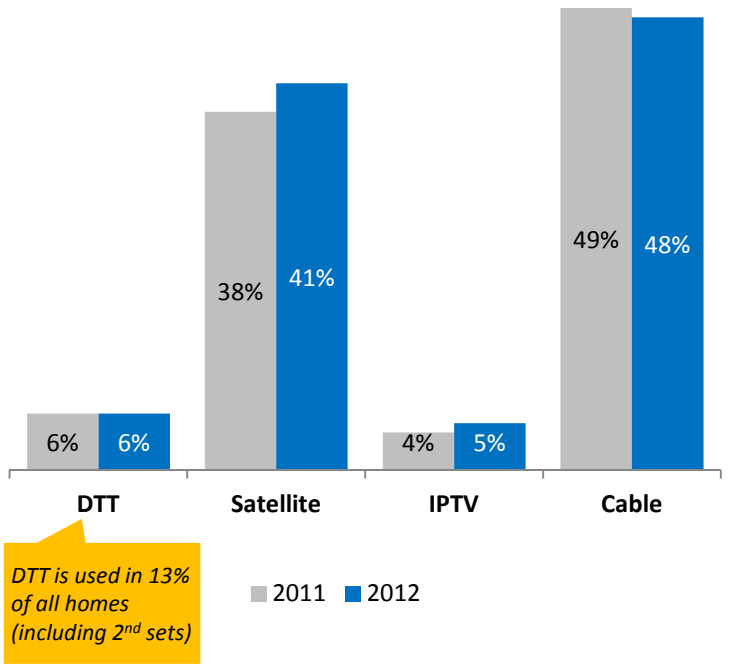
**Availability**

- Deutsche Telekom's Entertain service is available to c20m households. Vodafone's coverage is at 8-10m households
- The services require a 25-50 Mbit/s in order to watch live HD or 3D channels

**VOD market**

- VOD is still very much an emerging and fragmented market ,with the DVD market remaining a major driver of consumer revenues
- There are c50 VOD platforms, including Mediatheken (ARD/ZDF), Maxdome )ProSiebenSat.1(, RTL now, iTunes, Amazon, Videoload (Deutschen Telekom), Snap (Sky) and Watchever (Vivendi)
- In 2013, the total turnover of VOD platforms was €163 million, of which €73 million was for TVOD services. The DTO market contributed €57 million, and SVOD c€33 million
- ProSiebenSat.1 and RTL recently tried to create an equivalent service to Hulu – 'German Gold'. However this was blocked by the regulatory authorities on the basis that the platform would own a disproportionate amount of content rights

## Platform penetration (% of primary sets, TV households)




*Source: Ofcom International Communications Market reports, Akamai "The State of the Internet Q3 2013", OECD, ITU, Analysis Mason, European Parliament, GSMA, BNetzA, Deutsche Telekom, SES*
*Note: Platform share based on Ofcom's International Communications Market reports. Platform penetration may vary from previous Mediatique reports and other reported figures*

# Germany has sent mixed messages on the future spectrum allocation to DTT, with the recent coalition government committing itself to earmarking spectrum for DVB-T2

## Factors affecting broadcast spectrum clearance

**Spectrum auction**

- The German telecoms regulator has announced that the auction for 700 MHz (as well as 900MHz, 1800Mhz and 1.5GHz) may take place in 2014. Due to the lack of support and planning for DTT, it is possible that less consideration will be given to DTT than in previous auctions when spectrum bands were reserved for broadcast
- In early 2013, RTL announced that it would be withdrawing from DTT over the coming years due to spiralling costs, uncertainties over the future use of frequencies for mobile services across Germany beyond 2020, and the lack of a plan for DTT involving a future migration to DVB-T2
- However, the recent coalition agreement for the new government agreed to continue to earmark frequency spectrum for the continuation of DVB-T2 broadcasts in the country, leading to RTL officially reconsidering their position

**T2 transition**

- All terrestrial broadcasts are currently on DVB-T in Germany. The public broadcasters, ARD and ZDF, want to deploy the DVB-T2 standard (from 2016 and 2017 respectively) in order to launch new services, including HD channels. They have lobbied the regulator to retain 700 MHz spectrum for broadcast use until “at least 2020”
- ProSiebenSat.1 and RTL have also lobbied regulators to seek assurances over the allocation of 700 MHz to broadcast – they have refused to participate in a switch to DVB-T2 until they receive greater clarity on spectrum allocation

## Italy

*At a glance:*

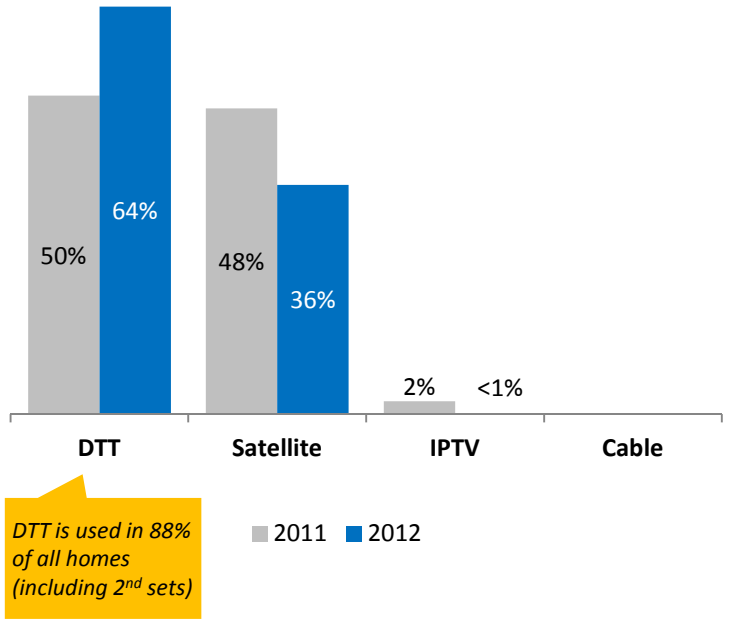
| | |
|---|---|
| **Number of TV households** | 25m |
| **IPTV penetration** | <1% |
| **Fixed broadband penetration** | 59% |
| **Superfast broadband penetration** | 2% |
| **Average broadband speed** | 4.9 Mbps |
| **Linear viewing** | 93% |

# Italy has experienced a significant degree of corporate failure in the IPTV market, with Telecom Italia remaining the only IPTV player – this partly explains the lack of IPTV penetration in this territory...

## Overview of the IPTV market in Italy

| | |
|---|---|
| **Overview** | ▪ Italy was a pioneer of IPTV competition in the early 2000s; however, many players collapsed including Tiscali, Fastweb, Dahlia and Infostrada<br>▪ As a result, Telecom Italia remains the only IPTV provider and has posted significant subscriber losses (in part as a result of broader pressures on pay-TV generally as a result of the economic environment)<br>▪ Sky Italia and Telecom Italia are investigating whether the companies can work together to create a next-generation IPTV platform over which the entire Sky programming line-up could be distributed |
| **Availability** | ▪ IPTV in Italy is only available in a small number of cities, and Fastweb's exit from the IPTV has led to a further reduction in this availability<br>▪ We estimate that IPTV coverage stands at roughly 35% of the Italian population |
| **VOD market** | ▪ Mediaset and Telcom Italia both offer SVOD services, with Sky On Demand also entering the market in 2014<br>▪ Mediaset and RAI dominate the catch-up market, due to the content the own and strength of their brands |

## Platform penetration (% of primary sets, TV households)




*Source: Ofcom International Communications Market reports, Akamai "The State of the Internet Q3 2013", OECD, Agcom, ITU, Analysis Mason, European Parliament*
*Note: Platform share based on Ofcom's International Communications Market reports. Platform penetration may vary from previous Mediatique reports and other reported figures*

# Italy remains a DTT-heavy country and, as a result, spectrum allocation continues to favour DTT and the promotion of DVB-T2 remains a key policy goal...

## Factors affecting broadcast spectrum clearance

**Spectrum auction**

- In early 2013, Italy's Communications Authority (AgCom) unanimously approved the final version of the regulations for the auction of key spectrum blocks currently used for broadcast. AgCom will hold two separate auctions:
  - The first will offer three 20-year licences in the 600 MHz band for DTT networks. Small operators and new entrants may bid for all three, whereas existing operators that already own two multiplexes may only bid for two more
  - Originally termed a 'U allotment', part of the 700 MHz band was also going to be auctioned for DTT, with 5 year licences being offered. However AgCom have decided, after consultation, to instead make this spectrum available to mobile operators in a second spectrum auction

**T2 transition**

- One DTT multiplex currently broadcasts on DVB-T2, carrying a mix of HD and SD services including TV, movies and adult channels
- Rai and Mediaset currently broadcast their HD services in DVB-T, although both are currently trialling the DVB-T2 broadcasts in key regions. DGTVi (the Italian 'Freeview' including RAI, Mediaset and Telecom Italia Media) is seeking to launch new services on DVB-T2/HEVC services from 2014.
- As of January 1, 2015, all TV manufacturers must incorporate DVB-T2 into their models as standard (including idTVs and set-top boxes). A switchover date to DVB-T2 has yet to be agreed by the regulator

## Sweden

*At a glance:*

| | |
|---|---|
| **Number of TV households** | 5m |
| **IPTV penetration** | 14% |
| **Fixed broadband penetration** | 87% |
| **Superfast broadband penetration** | 41% |
| **Average broadband speed** | 9.3 Mbps |
| **Linear viewing** | 92% |

# Sweden's IPTV market contains a number of national and local operators, with near-universal coverage enabling IPTV networks to secure market traction...

## Overview of the IPTV market in Sweden

**Overview**

- There are three main national operators of IPTV – TeliaSonera, Telenor (B2bredband) and Fast TV
- TeliaSonera is the largest of the three, and is now the 3rd largest TV provider in Sweden after ComHem (cable) and Boxer (DTT)
- Boxer dropped out of the IPTV market in November 2010 in order to concentrate on digital terrestrial television
- There are many smaller regional IPTV services in operation – including players that work with public bodies such as housing trusts and local broadband operators (e.g., Kalejdo IPTV)

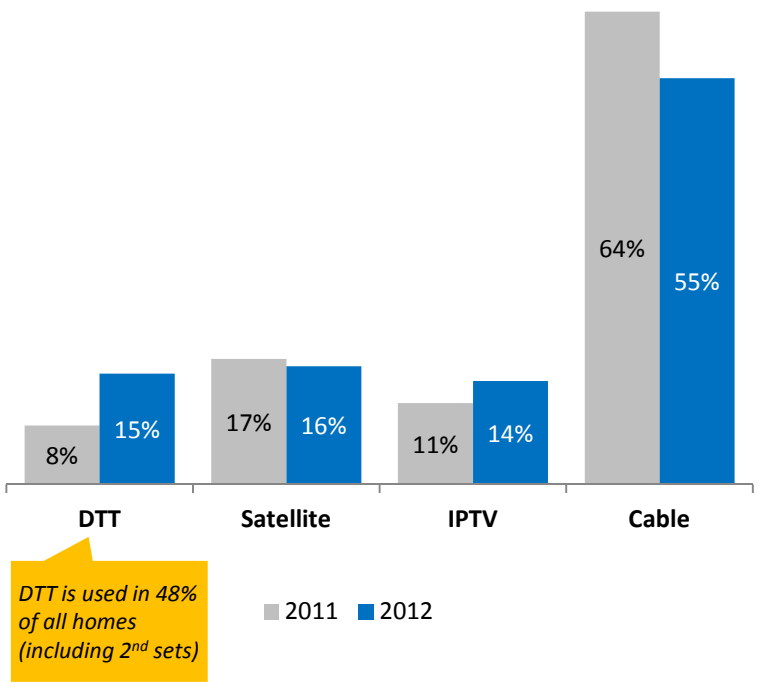
**Availability**

- The majority of the Swedish urban population is able to subscribe to at least one IPTV service, due to near nationwide reach of the multicast network
- Certain rural areas remain outside the scope of IPTV provision, making coverage less-than-universal at roughly 90%

**VOD market**

- The VOD market in Sweden is very competitive, with Netflix, Magine, C More, Voddler, Viaplay, and HBO Nordic all providing services, alongside catch-up services offered by platforms and broadcasters and the usual players such as iTunes competing for DTO and TVOD revenue
- Netflix has c300k subscribers in Sweden, representing 1/3 of the SVOD market
- Catch-up service are offered by broadcasters, such as SVT Play and Aftonbladet TV

## Platform penetration (% of primary sets, TV households)




*Source: Ofcom International Communications Market reports, Akamai "The State of the Internet Q3 2013", OECD, ITU, Analysis Mason, European Parliament, SBA "Broadcast Space for terrestrial television during the license period 2014-2020", Teracom, MMS*
*Note: Platform share based on Ofcom's International Communications Market reports. Platform penetration may vary from previous Mediatique reports and other reported figures*

# Sweden's public policy is committed to the future evolution of DTT, with a transition to DVB-T2 favoured by the regulator...

## Factors affecting broadcast spectrum clearance

**Spectrum auction**

- Broadcast space in Sweden is found in two bands: 174-230 MHz and 470-790 MHz. The Swedish Broadcasting Authority has proposed that the government preserve the spectrum used for DTT until 2020
- The SBA is currently consulting on the future of the 700 MHz band. Any decision to allocate spectrum in this band to uses other than terrestrial TV would have implications of the carriage of existing TV services (and also requiring collaboration with neighbouring countries)
- A decision has yet to be made on the timing of any auction

**T2 transition**

- DVB-T2 was introduced to DTT in Sweden in 2010, with two out of seven DTT multiplexes broadcasting on the T2 standard. These multiplexes broadcast a total of 9 HD channels, including simulcasts of SVT1, SVT2 (the public service channels) and TV4 (the largest commercial broadcast channel)
- The SBA has agreed to promote a gradual transition to DVB-T2 during the licensing period for multiplex operators (2014–2020). A further multiplex is expected to transition to DVB-T2 by the end of 2014 and the other multiplexes are to likely to migrate gradually during the licence period

## South Korea

*At a glance:*

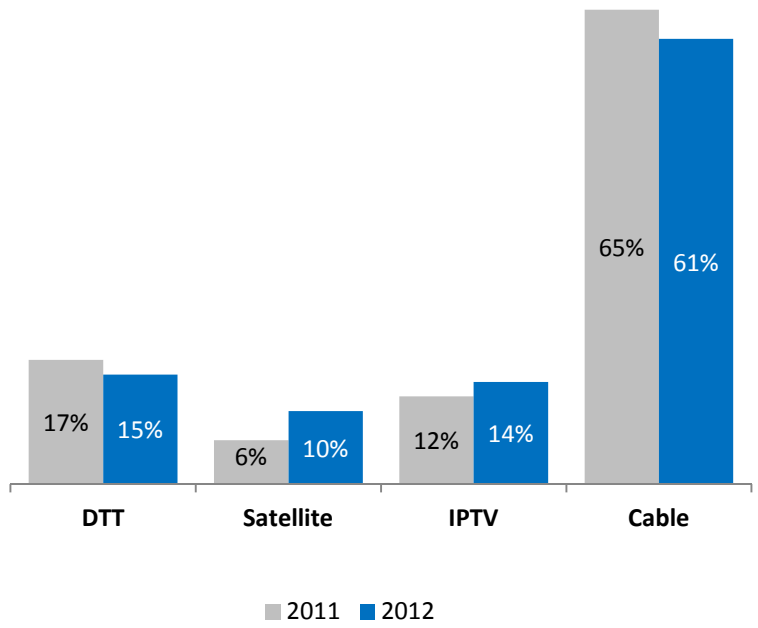
| | |
|---|---|
| **Number of TV households** | 20m |
| **IPTV penetration** | 14% |
| **Fixed broadband penetration** | 98% |
| **Superfast broadband penetration** | 82% |
| **Average broadband speed** | 22.1 Mbps |
| **Linear viewing** | c70% |

# South Korea has an active IPTV market (rooted in a robust national IP network), although delivery of TV services remains dominated by cable...

## Overview of the IPTV market in South Korea

| | |
|---|---|
| **Overview** | ▪ South Korea has three large IPTV providers – LG (U+TV), Korea Telecom* (Olleh TV) and SK Broadband (BTV) – and a number of smaller players<br>(*KT provides a pure IPTV service alongside a hybrid IP-satellite service)<br>▪ The IPTV services face stiff competition from a dominant cable industry, and have sought to evolve their propositions to secure market traction – for example, KT launched an HTML-based IPTV service in 2013 that makes its content available both on traditional set-top boxes and PCs, smartphones and tablets |
| **Availability** | ▪ South Korea has an extensive fibre network that enables IPTV to be delivered to over 80% of the population |
| **VOD market** | ▪ South Korea's VOD market grew 26% in 2012 to c£120m, whereas DVD sales totalled less than £20m. Nearly half its residents use a legal VOD service<br>▪ The market is dominated by KT Media Hub, SK Broadband and IG U+ Medialog<br>▪ In 2013, Disney and Sony both experimented with renting movies via VOD whilst they were still playing in cinemas |

## Platform penetration (% of primary sets, TV households)




*Source: Mediatique, Akamai "The State of the Internet Q3 2013", KCC, Analysys Mason*

# Public policy towards DTT in South Korea is relatively ambivalent, reflecting cable's dominance – future allocation of spectrum is currently subject to consultation however...

## Factors affecting broadcast spectrum clearance

**Spectrum auction**

- The Ministry of Science, ITC, and Future Planning, and the Korea Communications Commission operate a joint research taskforce that continues to investigate the allocation of spectrum in the 700 MHz band
- In January 2012, the Korea Communications Commission decided to allocate 40 MHz of bandwidth out of the 700 MHz band to mobile telecom services. The use of the remaining bandwidth is currently being considered (informed by its consideration of the development trends in convergence technology and the role of DTT) and is subject to public consultation

**ATSC upgrade**

- South Korea switched from analogue (NTSC standard) to digital (ATSC standard) in 2012, although there are currently no (public) plans to switch to more efficient ATSC standards
- Indeed, the development of a ATSC 2.0 standard has been subject to delays, although finalisation of the standard is expected in early 2014. The 2.0 standard offers better compression and interactive elements. An upgrade to ATSC 2.0 will not require consumers to upgrade TV sets to keep receiving DTT signals
- A further ATSC 3.0 standard is in the early stages of development, but would require new compatible TV sets (much like DVB-T2)
- South Korea is already testing broadcasts of ultra-HD/4K – driven in part by the launch of 4K-compatible screens by LG and Samsung – were this to become standard, then the DTT platform would face significant pressure to upgrade from ATSC

## USA

*At a glance:*

| | |
|---|---|
| **Number of TV households** | 114m |
| **IPTV penetration** | 8% |
| **Fixed broadband penetration** | 72% |
| **Superfast broadband penetration** | 48% |
| **Average broadband speed** | 9.8 Mbps |
| **Linear viewing** | 92% |

# The USA has a number of quasi-national and regional IPTV providers, which have replicated the propositions of cable and satellite providers within bundled triple-play services to gain market traction...

## Overview of the IPTV market in the USA

**Overview**

- IPTV is a growing subset of the TV market, with two main operators – Verizon and AT&T, and a number of regional players (e.g., Surewest, CenturyLink Prism)
- IPTV was the only segment of the US pay-TV market to achieve growth in Q2 2013

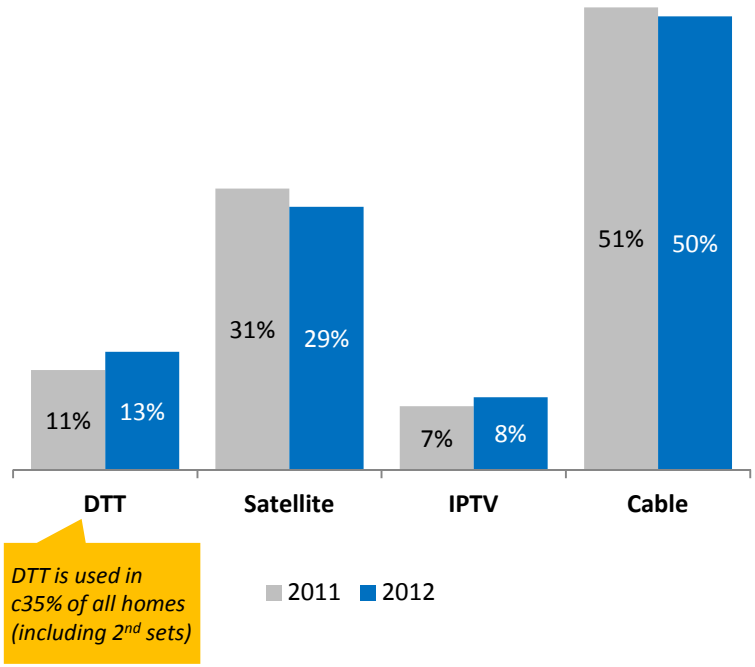
**Availability**

- Both Verizon and AT&T have invested heavily in fibre (to the cabinet and to the home)
  - Verizon's FiOs service reaches 18m homes in 16 states with 5.0m subscribers
  - AT&T's Universe service reaches 20m homes in 24 states with 5.5m subscribers
- In total, over a third of US homes are passed by a multicast network

**VOD market**

- VOD services are now available to 60% US television homes through set-top boxes
- There are more than 25 OTT SVOD services in the US, the most popular of which is Netflix, who report c30m paying subscribers to their platform in the US
- Networks also provide both ad-funded and SVOD services
- In total, SVOD subscriptions are estimated to be taken out by over 50m people. The VOD market in the US was estimated to be worth over £900m in 2012
- Apple dominates the DTO sector, with c65% market share for movies and 67% for TV shows (based on transactions)
- iTunes is also the major player for TVOD, with a 45% market share, whilst Amazon (its nearest competitor) has an 18% share

## Platform penetration (% of primary sets, TV households)




*Source: Ofcom International Communications Market reports, Akamai "The State of the Internet Q3 2013", FCC, ITU, Analysys Mason, Netflix, LPTV Spectrum Rights Coalition*
*Note: Platform share based on Ofcom's International Communications Market reports. Platform penetration may vary from previous Mediatique reports and other reported figures*

## The US regulator continues to follow a broadly commercial route to spectrum allocation, although the allocation of spectrum to terrestrial broadcast is likely to have some protection...

### Factors affecting broadcast spectrum clearance

**Spectrum auction**

- The Federal Communications Commission is planning to invite local broadcasters holding valuable terrestrial licences to give up their spectrum for re-auctioning to mobile operators aiming to launch wireless broadband services
- The FCC says it will compensate any broadcaster who elects to vacate the spectrum out of the proceeds
- This is a complicated process and is likely to appeal mainly to holders of local licences and spectrum that do not normally seek re-trans fees from pay TV operators under the US system of “must carry” versus “re-transmission consent”; vacating broadcasters (no longer enjoying a backstop right of “must carry”) may thereafter seek to be available on cable, satellite and IPTV on commercial terms or simply pocket their share of the auction proceeds and retire
- The process is not now expected to begin until 2015

**ATSC upgrade**

- The USA’s over-the-air broadcasts currently use ATSC standards. The development of ATSC 2.0 and 3.0 standards (see South Korea for summary) would enable more efficient use of existing spectrum allocation to broadcast
- The FCC continues to monitor developments around 2.0 and 3.0 standards, and the implications on spectrum allocation, forthcoming spectrum auctions, the roll-out of additional HD (including 4K) services and consumer costs

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