Mediatique

Connected TV gateways: review of market dynamics

A report for Ofcom

August 2020

Contents of this report

Executive summary (1)

Mediatique

Introduction

- In this report, based on desk research and a range of interviews with market participants, we first describe the supply and value chains characterising the connected TV market in the UK
- We then review the key business models pursued by sector players, and thereafter provide an in-depth analysis of the dynamics and characteristics of the market, focussing on: barriers to entry; financial attractiveness of different market segments; synergies available across the value chain; and the strategies of major players (a representative list of sector participants is provided in the Appendix)
- The goal is to determine how these factors condition competitive outcomes in the UK connected TV market and in particular how the relationship between content suppliers and those mediating between content and the end consumer currently operates
- Finally, we have been asked to consider how the market is likely to change over the medium term, and how this might affect competitive outcomes across the value chain; in particular, we focus on outcomes in relation to content providers such as the Public Service Broadcasters ('PSBs')

Market overview

- As technology changes and consumer behaviours evolve, the connected TV supply chain is becoming increasingly complex: possible routes between content and the end consumer are varied and extensive, even on the same TV screen
- These multiple routes, enabled by fast broadband and device proliferation, create multiple influences over what content consumers see, reinforcing the importance of prominence while establishing a role for the operating system ('OS') and user interface ('UI') as key *loci* for enabling user choice:
  - Consumers using a smart TV will typically be offered the prospect of accessing content via a series of apps on the home screen: the order in which these are presented will be decided (at least initially) by the TV set manufacturer and/or the provider of the TV set's OS and may well be the result of negotiation and traded value (cash, revenue share)
  - The UI may also be directly influenced by whether the operator in control of the home screen has its own content, services or functionality to promote and/ or has traded this to a third party
  - The consumer may also be a subscriber to a pay TV platform (Sky, Virgin, BT), which also provides a 'homepage' or navigational starting point (e.g., Sky's Guide) and access/prominence for suppliers to the platform will also be subject to negotiation and traded value

Market overview continued

- In other cases, consumers have neither a smart TV nor a pay TV subscription, but have attached hardware to their screen to allow them access to a range of content (a streaming stick, a games console); sometimes, these devices enable 'casting' of content from a tablet or phone; otherwise, the prominence and positioning of content will be set by agreement with the device manufacturer, whose interests may well extent beyond TV content and the TV screen (e.g. Google seeking to sell ads around YouTube content or Amazon aiming to lock in Prime shopping subscribers)

- Once within a content environment – say, having navigated to Netflix or the BBC iPlayer – the consumer's experience will then be influenced by the content provider itself (e.g., by 'auto start' offerings of a new episode, editorial recommendations, and search functionality at the service level rather than at the platform level)
- Some environments can be tailored by the consumer (e.g., downloading apps and even determining their order on a homepage) and others will be directly influenced by algorithms tracking consumer behaviours (either within the on-screen environment or perhaps even on other devices sharing the data – e.g., starting to watch a programme on a tablet and being offered the chance to pick where the viewer left off on another device); single households may well have multiple routes to content ('toggling' among and between a pay TV box, a smart TV, voice controlled remote) and individual users within a household can have personalised access to content, search, recordings
- Finally, consumers continue to learn about and so seek out content they like through a range of other means – word of mouth, PR, off-platform marketing (notwithstanding the power of prominence, presentation and search via connected gateways); this may favour legacy brands like the BBC

Key dynamics and characteristics of the connected TV value chain

- The value chain delivering connected TV content includes key global players operating across multiple market segments (content production, aggregation, delivery and hardware, for example) able to leverage advantages that are not necessarily open to less well resourced and integrated competitors
- TV manufacturers initially controlled the operating system and user interface for 'smart' TVs: today, while some continue to do so (Samsung, Panasonic), many have elected to use a standard OS from a third party (e.g., Roku, Amazon Fire) or have used Google's Android TV (ceding significant control to these OS providers over data capture and UI/UX in return for, typically, revenue share and lower technology costs)

Executive summary (3)

Mediatique

Key dynamics and characteristics of the connected TV value chain continued

- New entrants (Google, Apple, Amazon) have typically clustered towards the consumer-facing end of the connected TV value chain, where barriers to entry have been lower, rapidly asserting control over OS and UI (via streaming devices and more recently providing OS to manufacturers)
- They have also used financial resources generated in adjacent markets (e-commerce, hardware sales, music) to enter even high-barrier market segments such as content production (where Apple and Amazon have joined Netflix as multi-billion pound investors in content)
- Control of the OS generates key benefits, particularly around data collection and the subsequent use of this data to derive income in a range of adjacent markets (e.g., e-commerce for Amazon, digital advertising for Google) – thus while margins are relatively low in the OS segment, some global players will accept these low margins or even 'forego' revenue in order to unlock or maintain value in another segment or adjacent market
- These global players are seeking to 'own the home' by capturing as much of a household's engagement as possible (via smart devices in particular), leading to stronger brand loyalty, multiple revenue streams and higher customer lifetime value
- The key direct and indirect revenues in the connected TV market (analysed in depth in this report) include subscription (SVOD, Electronic Sell-through), advertising, cloud services, 'ad tech', payments for prominence and position – and value is 'traded' across the value chain, in cash and in kind, largely between content providers and those controlling the gateways (OS providers, pay-TV operators), many of which have content offerings of their own
- The balance of power is shifting in favour of large, global players: scale – both global and financial – is having a profound impact, not only because of the proven 'stickiness' of global brands (and ability to overcome significant cost barriers), but the leverage that comes from operating in multiple market segments, whereby synergies are unlocked; this has already led to observable declines in the bargaining power of domestic content providers
- Taken together, these market dynamics are already visible in the mergers and acquisitions that have taken place in recent years and will continue to inform the business strategies of major global players, with implications for local markets and local players

Future outcomes

- Change in the future is likely to be driven by a range of factors, including further shifts in consumer preferences, developments in technology and innovations in competitor strategies and responses – these will determine how and where (along the value chain) 'value' is traded, and how bargaining power between suppliers and platforms evolves

Executive summary (4)

Mediatique

Future outcomes continued

- Content is likely to continue to be a critical advantage, especially in conjunction with distribution, meaning a central dynamic of future scenarios will be conflict between 'old' and 'new' aggregators, with new entrants particularly equipped to wrest value from legacy platforms through ease of integration with other devices in the home (smart hubs, smartphones) – this is rendered more likely if, as expected, TV manufacturers continue to cede control of operating systems to one or another of the 'new' providers (Google, Amazon, Apple)
- However, legacy pay-TV operators may retain market share by incorporating new services (such as SVOD) into their bundled propositions, where consumers use these pay-TV platforms as the main means of accessing content (rather than toggling between apps on underlying hardware, such as smart TVs) – the battle between 'new' and 'legacy' aggregators will be a central theme in the market over the medium term
- The outcome is likely to be determined by consumers' willingness to adapt to new forms of consumption, their acceptance of bundled services, billing and permissive use of data, as well as individual partnerships between pay-TV operators and content providers
- Our analysis of the dynamics suggests the growing importance of negotiations for access and prominence at global level and the degree to which bargaining power and trading are determined by dynamics arising in other segments in the value chain (data, content delivery, billing)
- We expect the connected TV market to continue to favour global providers with multiple points of presence across the value chain
    - this suggests significant challenges ahead for domestic TV content providers that do not share these advantages (already to an extent visible in negotiations between smart TV manufacturers and the PSBs where the PSBs find their bargaining power reduced)

Conclusions and implications

- Our analysis suggests two broad and immediate impacts: the growing importance of negotiations at global level (e.g., between Netflix and Sony) and the degree to which trading on access and prominence is determined by the operation of other segments of the value chain (i.e., arrangements on content delivery, cloud services; revenue shares on data-enabled programmatic advertising, subscriptions and TVOD; horizontal relationships involving content aggregation and the OS – e.g., Amazon Fire favouring Amazon Prime Video)

Executive summary (5)

Mediatique

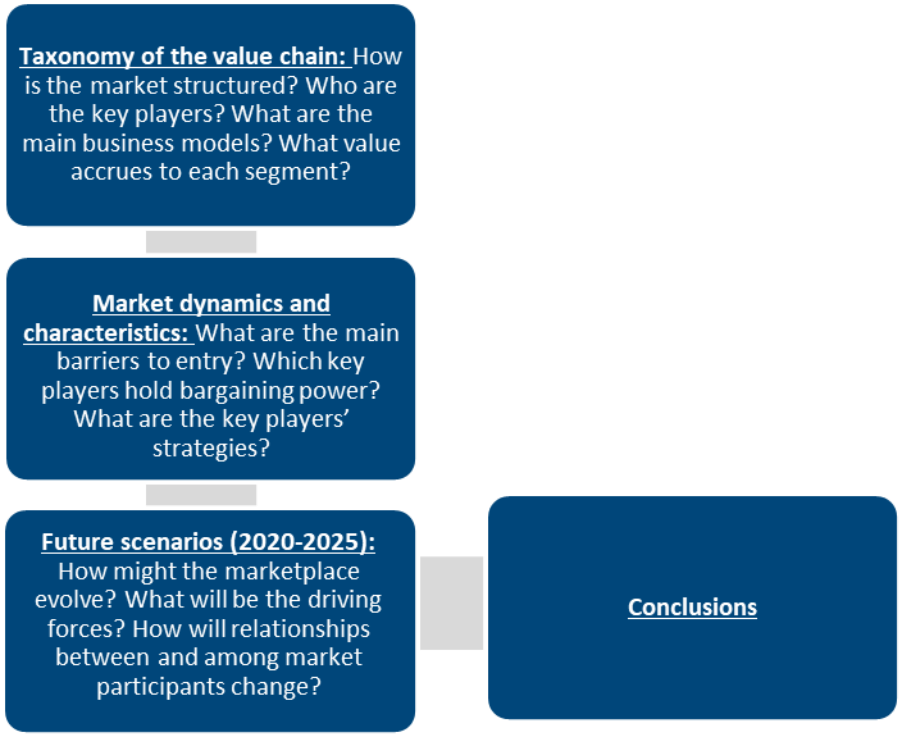
Conclusions and implications continued

- The OS segment is relatively small in revenue and profit terms; however the ability of digital giants to generate value and returns elsewhere along the value chain underpins their willingness to provide no or negative margin supply of OS to TV manufacturers (thereby disincentivising new entry)
- Moreover, the control of the OS in terms of data, advertising, and potentially billing, will generate significant revenue opportunities in the future, over which consolidated OS providers will have a significant claim
- There are mitigations to this: continued commitment of TV manufacturers to their own OS; the enduring role of pay-TV operators (including those, such as BT and Virgin with 'last mile' networks); and the likely evolution of consumer preferences for content, and in particular SVOD and other non-linear propositions, which may permit content providers (including domestic players) to retain significant control intra-app (search, navigation, personalisation)
- In determining bargaining power and leverage, future dynamics are likely to favour both critical-mass content providers (Netflix, probably Disney) and value-chain participants with global footprint and/or multiple points of entry (Google, Amazon, perhaps 1-2 pay TV operators)
- Our analysis suggests Google and Amazon will emerge as significant players across the value chain, increasingly present in OS provision and able to sustain a connected eco-system through access to data, provision of cloud and other services and content; Apple's strategy suggests a different emphasis – on revenue share with third-party providers, and conceivably a role as OS partner for large-scale network providers such as Virgin or BT
- Pay TV operators will need to offer 'super aggregator' propositions to compete (Sky is most likely in the medium term to thrive)
- For domestic TV providers, the challenges are significant:
  - Until recently, the enduring appeal of domestic broadcast content in the UK, including catch-up and other online variants (iPlayer, ITV Hub, All4), has ensured that connected TV platforms sought access to this content as a pre-condition of offering a full consumer proposition
  - PSBs may be able to rely on continued consumer loyalty to domestic content brands and services, at least for a time; however, global arrangements are set to trump domestic bargains, and PSB content is likely to become harder to discover on connected devices
- Absent regulatory intervention, the main scope for response by the PSBs will lie in joint action – e.g., to withhold their services (where possible and to the extent permitted under competition rules) in order to extract undertakings on access, prominence, search/navigation and/or compensation

Mediatique was asked by Ofcom to develop a structured and forward-looking understanding of the current supply and value chains of TV services in the UK, focussing on gateways in the connected TV market

- The future evolution of the UK's TV markets is relevant to Ofcom in a number of ways, including the delivery of the purposes of public service broadcasting and the functioning of the UK's TV and broader communications markets. In this context, Ofcom commissioned Mediatique to 1) develop a framework for understanding the current 'connected TV gateways' supply and value chains and their operation in the UK and 2) use this framework to inform a consideration of future market developments
- Foundational to our work has been the development of a 'taxonomy' of the elements making up the supply chain (the delivery of TV services to end consumers) and the value chain (the value generated as a result of the delivery of relevant services), covering key activities, the identity of players involved and the main business models pursued
- We go on to analyse the dynamics and characteristics of the connected TV gateways market – with a particular focus on market entry, barriers to entry, the bargaining power accruing to certain players and/or player categories
- We then assess the drivers of change, developing scenarios for how the connected TV gateways market might evolve between now and 2025, focussing on suppliers (content providers, distributors, operators, platforms) and consumers

Structure of this report



We used a number of research techniques in the preparation of this report, including bespoke interviews with a range of market participants

- In order to complete our work, we undertook extensive desk research, including a review of company reports, investor relations documentation, trade articles and third-party analysis available in the public domain; this research was focussed on the UK market but included review of developments in other relevant territories
- We also took into account data and analysis provided by Ofcom (in the public domain), including its sectoral estimates of revenues, expenditure, device take-up and platform penetration in the A/V sector, as relevant
- Where possible, we used Ofcom-validated data in preference to any other source; where this was not available, we used reputable third-party sources (note our caveats under Important Information)
- We undertook a number of bespoke and confidential interviews with key market participants from across the connected TV gateways value chain, including OS providers, pay TV operators, CE manufacturers, broadcasters and stakeholder groups
  - We have used the information provided in these interviews to validate our work and provide perspectives on the dynamics of contracts and negotiations among and between parties along the value chain
  - Where relevant and possible, we have referred to information gathered in this way throughout the report
  - It is important to underline that some of this information provided to us is confidential and commercially sensitive; we have not divulged in this report (or to Ofcom) any details shared with us on the basis of our non-disclosure undertakings reached with stakeholders prior to our interviews

Mediatique

Executive summary

Introduction and note on methodology

Taxonomy of the value chain

Business models

Market dynamics and characteristics

Future scenarios (2020-2025)

Conclusions

Glossary and definitions

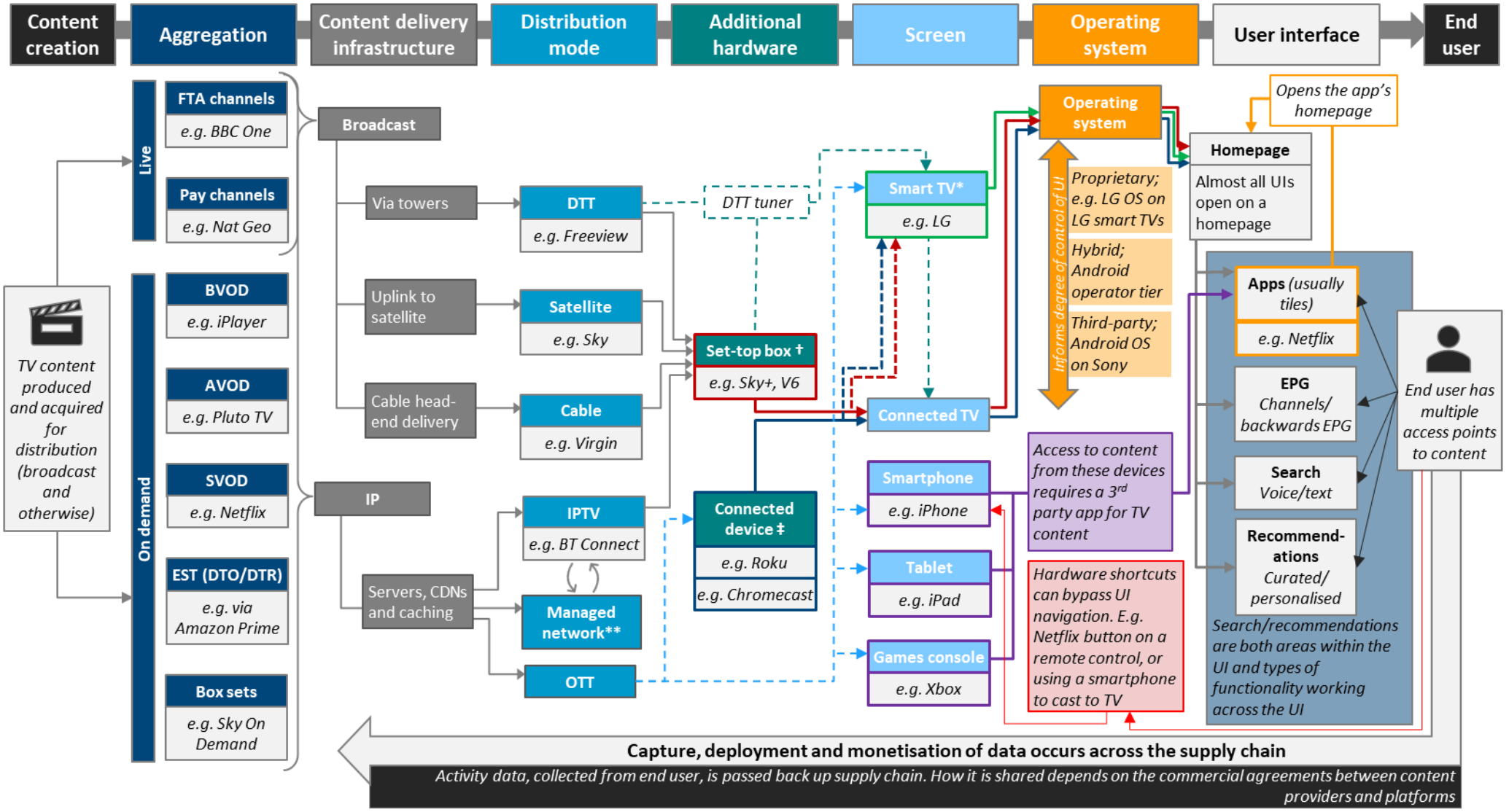
Appendix

We identify below segments in the supply chain that connects content and the end consumer, before detailing the identity of key players within (and across) the segments and the resultant value chain

Market segment	Description	Key players (e.g.)
Aggregation	▪ The collation and organisation of content into a product for consumers ▪ Traditionally, aggregation meant broadcast channels (FTA and pay) but now includes content aggregated for delivery on demand, including content originally broadcast via legacy channels; thus, most channel providers now offer catch-up or on-demand services – i.e., 're-aggregated'	▪ PSBs ▪ Sky ▪ Netflix
Content delivery infrastructure	▪ The physical and virtual (e.g., cloud) infrastructure underpinning delivery to the consumer ▪ Whereas linear delivery tends to take place through 'managed' delivery systems (even when streamed via IP), 'over the top' ('OTT') delivery uses the 'open' internet to transmit to end users (these distinctions are blurring as OTT delivery becomes more reliable) ▪ We use 'distribution mode' to refer to how content ultimately reaches the end consumer; can be free (Freeview, Freesat) or subscription (Sky, Virgin) broadcast, or direct-to-consumer OTT (Netflix, Amazon) via smart devices, or a hybrid (e.g., Sky Q). Often bundled with other services (including broadband and hardware)	▪ Arqiva ▪ Akamai ▪ Virgin ▪ BT
Consumer products	▪ Devices on which content can be viewed (smart TVs, 'dumb' TVs, smartphones, tablets) and any devices that allows or enables on-demand and/or IP-delivered viewing, including traditional set-top boxes ('STBs'), connected devices (such as streaming sticks) ▪ Connected devices are subject to different dynamics to STBs; we distinguish connected devices from STBs through their lack of memory/storage capacity, although with streaming (which requires no home storage) the division is becoming increasingly blurred with cloud storage and 'just in time' content delivery via the cloud	▪ Roku ▪ Google ▪ Apple ▪ Sony
Operating system	▪ The software that acts as intermediary between the hardware (screen, connected device, etc.) and the user and that controls the device (not sharing that role with any other software) ▪ The OS 'sits between' the device and apps (where viewers access content) and allows end users to choose between apps – when a user is inside an app, we use the term 'in-app functionality' to refer to the processes the app provider controls ▪ It is possible for both CE manufacturers (e.g., Sony) and developers (Android) to control OS behaviour; i.e., Android can develop the entire back end of its OS and cede control to Sony for its day to day management	▪ Android (Google) ▪ Tizen ▪ WebOS
User interface	▪ The consumer-facing segment of the OS; acts as the main consumer 'gateway' to content (often in a hierarchy within which a branded provider – e.g., Netflix – can play a role) ▪ Issues of prominence, search/navigation, voice control and recommendations play out here, affecting consumer actions	▪ Android ▪ Netflix

As the diagram below attests, the supply chain has become increasingly complex, and possible routes to the consumer are varied and extensive

Mediatique



** Set-top boxes and streaming sticks can be plugged into smart TVs so users can toggle between ecosystems, e.g., by turning off Sky Q to access a smart TV's homepage. ** Delivered via managed IP (or 'pushed' via broadcast) to legacy STBs. † Includes IP streaming, and through home storage, both platform push VOD and PDL ‡ We distinguish connected devices from set top boxes through their lack of memory/storage capacity, however the division is increasingly blurred given the ability to stream content from the cloud without home storage.*

Within the OS segment, manufacturers can develop their own proprietary systems, use open source options or partner to use third-party OSs, the most popular of which is Android TV

- There are three main types of OS: proprietary systems – LG's webOS, Samsung's Tizen; third-party systems – Android OS, Roku OS; and hybrid systems – Android TV Operator Tier; the latter allows manufacturers greater control over UI customisation but the OS provider still exercises significant control over search, navigation, data capture, access
- In the hybrid case, both TV manufacturer and Android exert control over the user experience (app placement, access, navigation); decisions on serving advertising on the OS are taken by Google, data is shared with it, and users can download Google Play apps without CE manufacturer intervention)
- Content providers (e.g., PSBs) will negotiate (separately or collectively – e.g., through Freeview Play) with the ultimate OS provider, directly or via the manufacturers, meaning the OS provider is key to determining prominence arrangements
- Some of the biggest sellers in the UK market (LG, Samsung and Panasonic) use proprietary OSs, but this may change over the medium-term, given cost and as OS providers adapt to manufacturers preferences (particularly UI customisation)
- UIs can be also be 'nested' such that moving from smart TV homepage to SVOD service changes who can collect user data and what the data looks like (see slides 26-27)

Hypothetical user journey and what data is collected by whom

	Smart TV OS	iPlayer in-app functionality	Netflix in-app functionality
User turns on TV, smart TV homepage opens	Starts tracking user's movements and usage	(This approach is mirrored by other providers – e.g., ITV Hub, All4, UKTV Player)	(Third-party apps all follow Netflix example – e.g., Disney+)
Selects linear channel through EPG	Smart TV knows which channels watched and duration of watch session on each		
Opens BBC iPlayer app from homepage	Smart TV knows iPlayer app has been opened and can track time spent*	iPlayer tracks all user data when user is in app; content watched, session duration, log-in used	
While in iPlayer, uses remote control to go directly to Netflix	Smart TV knows app has changed; destination app and time spent	iPlayer OS knows when user leaves app	Netflix tracks content watched, session duration, user preferences

** The level of data known about content will depend on level of metadata integration and use of automatic content recognition. Smart TVs and apps may also have access to data from other online and offline sources including interest-based data and browsing history.*

Our taxonomy permits us to identify a number of dynamics across the relevant supply chain that may begin to inform future developments

Mediatique

While IPTV in the UK is not common, IP-enabled TV is growing	▪ While full IP-only pay TV (i.e., with no broadcast element) is relatively rare in the UK, IP-enabled TVs are common and their use is growing rapidly (more than half of all UK households have connected their TVs to the internet) ▪ This includes smart TVs, connected TVs and IP-enabled pay TV platforms which use IP to add functionality to 'traditional' broadcast platforms (usually from ISPs who can bundle traditional pay TV with internet access (BT TV, TalkTalk)
The distinction between 'live' broadcast and IP-delivered content on demand is lessening	▪ The distinction between live (free-to-air and pay channels) and on demand is becoming less clear as traditional broadcasters launch their own OTT services and consumers increasingly expect to be able to access both live and on demand on the same platform or device ▪ Further, many BVOD services – including BBC iPlayer and ITV Hub – have implemented live-streaming, which allows consumers to access live channels over IP within the BVOD ecosystem
The proliferation of content providers has reinforced the importance of prominence	▪ The access points to content in smart and connected TVs are more numerous than in 'dumb' TVs (search, voice, recommendations, 3rd party apps, etc.) meaning prominence from being at the top of the EPG is no longer as privileged as it once was; this has put a premium on access/prominence as more and more services vie for consumer attention ▪ Meanwhile, smart TVs have meant an increased ability by a number of players to dictate which content surfaces prominently or in response to a search or recommendation – ranging from the SVOD provider when users are within an app (e.g., Netflix), the operating system provider (manufacturer or a third party such as Roku, Google) or the platform operator (Sky, BT)
There is a growing role for the operating system and user interface in determining how content is surfaced	▪ Take up of connected TVs and the proliferation of content on them has favoured the operating system provider, which increasingly plays a determinant role in assigning prominence and positioning of apps, determining how content gets surfaced (e.g., through search, 'top picks') and how first-party data is collected, stored and used ▪ The balance of power is shifting in negotiations between 'pure' content service providers and other players across the value chain, particularly around prominence, search/recommendation functionality and access to the revenues associated with data capture / monetisation – we return to these issues in detail in the relevant sections of this report

Thus, connected TV gateways offer multiple methods for consumers to access content, even on the same TV screen – making for a hierarchy of access, where influence on what consumers see is varied and complicated

Mediatique

There are multiple influences over what audiences see

We expand on the implications of these multiple routes to content more fully in our conclusions, with particular focus on the resultant 'hierarchy of access' and how dynamics around prominence and access will continue to shift

- The net impact of the changes in technology, consumer behaviour and business models across the connected TV space has been to render far more complicated and various the routes that consumers can take to access content on their TV screens, and the identity and characteristics of the players with influence over what consumers see
- For example, consumers using a smart TV will typically be offered the prospect of accessing content via a series of apps on the home screen: the order in which these are presented will be decided by the TV set manufacturer and/or the provider of the TV set's OS (this might be two different players, depending on whether the manufacturer has its own OS or has adopted one from a third party) and the terms of position and order may well be the result of negotiation and traded value (cash, revenue share); the User Interface may also be directly influenced by whether the player in control of the home screen has its own content, services or functionality to promote or has traded this to a third party
- The consumer may also be a subscriber to a pay TV platform (Sky, Virgin, BT), which also provides a 'homepage' or navigational starting point (e.g., Sky's Guide) and access/prominence may be negotiated; in some cases, consumers have neither a smart TV nor a pay TV subscription, but have attached hardware to their screen to allow them access to a range of content (e.g., Amazon Fire Stick, Chromecast, Now TV); in some cases, consumers use their phones or tablets to 'cast' content to these attached devices; in others, the prominence and positioning of content will be set by agreement with the device manufacturer, whose interests may well extend beyond TV content and TV screen (e.g. Google seeking to sell ads around YouTube content or Amazon aiming to lock in Prime shopping subscribers)
- Once within a content environment – say, having navigated to Netflix or the BBC iPlayer – the consumer's experience will then be influenced by the content provider (e.g., by 'auto start' offerings of a new episode, editorial recommendations, and search functionality at the service level rather than at the platform level)
- Making the picture even more complicated, some environments can be tailored by the consumer (e.g., downloading apps and even determining their order on a homepage) and others will be directly influenced by algorithms tracking consumer behaviours (either within the on screen environment or perhaps even on other devices sharing the data (e.g., starting to watch a programme on iPad and being offered the chance to pick where the viewer left off on a new device); single households may well have multiple routes to content (a pay TV STB, a smart TV, voice controlled remote) and individual users within a household can have their own log in or STB access for content, search, recordings
- Finally, consumers continue to find content they like through a range of other means – word of mouth, PR, off-platform marketing (notwithstanding the power of prominence, presentation and search) – PSB content remains popular and sought after and 'global' content from, e.g., Netflix, Amazon does not necessarily sate consumer preferences

Reflecting this 'hierarchy of access', players operate across multiple market segments, leveraging specific advantages (e.g., in production, delivery, operating systems and user interface)

- We have specified at right the presence across the supply chain of relevant players, revealing the extent to which different players operate in multiple stages
- While the supply chain identified in our analysis shows how content gets to end consumers, it does not necessarily reveal how value is generated and to whose benefit
- Players may be content to earn no or even negative margin in a discrete supply-chain segment, if by being present in the relevant segment they unlock or maintain value in another
  - This is similar to the 'mutually assured disruption' of the 2000s when broadband providers subsidised content and content platforms subsidised broadband, making their returns elsewhere
- In the next section of our report, we consider whether players with multiple points of presence across the market are at an advantage (leverage, access to market synergies), and in particular whether players with global presence and capabilities and the ability to reach global arrangements benefit at the expense of domestic players

Presence of key players in market segments in the UK

Market segment	Content production	Aggregation	Content delivery infrastructure	Distribution	Additional hardware	Screen	OS	UI
Apple	Y	Y	Y		Y	Y	Y	Y
Google		Y	Y	Y	Y	Y	Y	Y
Sky	Y	Y	Y	Y	Y		Y	Y
Amazon	Y	Y	Y		Y		Y	Y
BT		Y	Y	Y	Y		Y	Y
Virgin	Y*	Y	Y	Y	Y		Y	Y
Netflix	Y	Y		Y				Y
Roku		Y	Y		Y		Y	Y
Samsung					Y	Y	Y	Y
LG					Y	Y	Y	Y
Panasonic					Y	Y	Y	Y
Sony	Y				Y	Y	Y	Y
Microsoft			Y	Y	Y			
Freesat		Y	Y	Y	***	***		***
Freeview		Y	Y	Y	***	***		***
ITV	Y	Y	**					
BBC	Y	Y	**					
Youview		Y			Y			

*Source: Mediatique. * Virgin produces some drama content but not on the same scale as others listed. ** As shareholders in Freesat, Digital UK (and Freeview), ITV and BBC participate in content delivery (the BBC stakes are through the public service, and not BBC Studio . *** Freeview and Freesat are not manufacturers but set out standards for using their kitemarks on hardware, and that can affect UI layout within smart TVs and connected hardware. Freeview has developed a standard ('Freeview Play') to govern how on demand content from the broadcasters is presented/discovered on compatible devices; Freesat has a similar standard – Freetime.*

By re-configuring our supply chain to reflect how and where value is generated, we are able to propose a 'value chain' for connected TV gateways (note we explore 'adjacent' revenues – e.g., e-commerce – separately)

Mediatique

	Content and production	Aggregation and distribution	Content delivery infrastructure*	Consumer products	Operating system and user interface**
Size of global market (2018)	Production and content sales: **£161bn**	Pay TV: **£151bn** TV advertising: **£105bn**‡ SVOD, BVOD, EST**: £32bn** YouTube: **£11.3bn**	Cloud services for video streaming: **£5.5bn**	Set top boxes: **£17.2bn** Smart speakers: **£4.2bn** Games consoles: **£30.7bn** Smart TVs: **£119bn** Smartphones: **£391.6bn** Tablets: **£2.7bn**	n/a
Global market size	**£161bn**	**£299.3bn**	n/a	**£565.4bn**	n/a
Global profits (estimated) †	**£28.2bn**	**£74.8bn**	n/a	**£49.5bn**	n/a
Size of UK market segments (2018)	Production and content sales: **£5.1bn**	Pay TV: **£6.4bn** FTA: **£7.5bn** SVOD: **£1.3bn** BVOD: **£391m** YouTube: **£900m** EST: **£300m**	DTT: **£500m** Cable: **Nil** Satellite: **£500m** ISP: **£1.1bn** Cloud services for video streaming: **£610m**	Set top boxes: **£688m** Smart speakers: **£448m** Games consoles: **£700m** Smart TVs: **£3.3bn** Smartphones: **£7.1bn** Tablets: **£200m**	Prominence *(EPG listings, equivalents on smart TVs/devices)*: **£1.1bn** Access *(bounty on subscription sales (15-30%); rev. share on Sky AdSmart (10-15%)*: **£100m** Licensing *(of software/OS subsidies to manufacturers for integration)*: **£500m** Data collection / monetisation: **>£100m**
UK market size	**£5.1bn**	**£16.8bn**	**£2.7bn**	**£12.4bn**	**£1.8bn**
UK profits (estimated) †	**£893m**	**£4.2bn**	**£338m**	**£1.1bn**	**£135m**

*Sources: Ofcom, GfK, IHS Markit, Canalys, Mediatique, press releases. Columns may not add due to rounding. * Given parts of content delivery infrastructure (satellite, DTT, cable, ISPs) are tied into local markets, we have not provided global sizes of market (with the exception of cloud services as an indicator against UK cloud services). Assumptions: DTT – combines 2 BBC multiplexes (£85m), Digital 3 & 4 (£35m), SDN (£120m) and Arqiva Muxco (£240m); a total of £482m. Accounting for interim muxes, we reach £500m. Cable – channels are carried net of affiliate payments; a small number of EPG and platform charges exist in these deals but are immaterial. ISPs – Sky 'direct' network (23% share) is equal to £600m (this covers routers, payments to Openreach, etc.); Virgin is c.£200m pro-rated to account for network monetisation; BT (32%) is read across at £250m. ** Mediatique acknowledge that further down the value chain it is difficult to ascertain value within key segments. Through consultation with industry stakeholders, Mediatique produced indicative figures for the types of agreements being made; these estimates include in-kind and other non-cash value trading). † In instances where we have used a ranged segment margin, we have used a median figure. ‡ We have used linear TV advertising market as a rough proxy of FTA size of market; note this does not include any public funding for TV in other countries or other commercial opportunities such as TV shopping, interactive or sponsorship (which are all included in FTA figure for the UK).*

In this 'value chain', the degree of consolidation in the UK market varies significantly, as do market size trends

Mediatique

Market segment	Segment category	Market size	Key players	Revenue growth trend	Degree of consolidation	Degree of consolidation: explained
Aggregation	Pay TV	£6.4bn	Sky: 56% Virgin: 24% BT: 11%			*Dominated by small group of players with credentials in other segments of the chain (delivery infrastructure; telephony)*
	SVOD	£1.3bn	Netflix: 60% Amazon: 31%			*Likely to remain significantly consolidated because of existing licensing deals in UK (HBO Max/HBO & Sky); of recent new entrants Disney+ could most feasibly take share from current leaders*
	AVOD/BVOD (inc. YouTube)	£1.3bn	Google: 69% ITV: 24%			*YouTube dominates, with ITV taking significant remaining share*
Content Delivery Infrastructure	ISP	£1.1bn	BT: 32% Sky: 23% Virgin: 18%			*Three players with significant stakes in the market; new entrance possible via partnership and leveraging existing relationships*
Consumer products	Smart speakers	£448m	Amazon: 64% Google: 26%			*Heavily concentrated; two players with tiered entrances to the chain (i.e., Amazon Dot versus Amazon Echo)*
	Games consoles	£700m	Sony: 48% Microsoft: 30%			*Two major console brands (Sony PlayStation & Microsoft Xbox); consolidation likely to continue with new gen consoles to be released in 2020*
	Smart TVs	£3.3bn	Samsung: 22% LG: 21% Sony: 9%			*Market share relatively spread amongst 4 – 5 major players; recent success in comparable territories (e.g., Hisense in the US) has demonstrated potential for further fragmentation*
	Smartphones	£7.1bn	Apple: 41% Samsung: 19%			*Potential for further fragmentation in Huawei's continuing emergence; strong handset performance (P20) has offset its partial omittance from the UK's 5G network plans*
	Tablets	£200m	Apple:64% Samsung:15% Amazon: 9%			*Shrinking market still dominated by Apple and to an extent Samsung. Limited scope for fragmentation given the market is no longer a lucrative one*
OS & UI	Smart TV OS	£1.8bn	Android: 33% Tizen: 28%			*Currently a relatively fragmented market; however this is likely to change, as is explored more fully later in the report*

Revenues and margins across the TV gateway value chain do not necessarily capture all 'value' – for instance, locking in customers to a given content service, generating adjacent revenues (e.g., music, gaming, e-commerce)

Mediatique

Revenue generation for aggregators has remained relatively buoyant	▪ Despite declines in linear viewing, broadcast has maintained margins, supporting, e.g., high dividend yield at ad-funded ITV and high ARPU for from legacy pay TV households (mitigating disintermediation by new entrant SVOD providers); meanwhile, growth of SVOD has only led to limited cannibalisation of pay TV in the UK (although trend toward 'skinny bundles' has affected sector-wide margins); potential role for both pay TV platforms and tech giants such as Apple and Amazon as 'super aggregators'
Digital advertising through connected TVs, enabled by ad tech, is starting to gain traction	▪ Programmatic is still not as simple on TV as via other devices, but new services are on the rise – broadcasters are particularly keen to find solutions (addressable, dynamic ad insertion) ▪ New forms of advertising (including within the UI itself) are increasingly important as hardware manufacturers seek post-purchase monetisation opportunities (shared with OS providers, ad tech) – prospect of revenue share between BVOD players and OS gateways (e.g., Amazon, Roku)
Potential opportunities in OS/UI to monetise	▪ Manufacturers are seeking new ways to monetise the user interface, as the value of prominence increases (in line with a proliferation of content providers); the smart TV UI increasingly acts as the key first port of call for consumers and as the mechanism to collect data; this may accelerate further if content is further disaggregated within the UI (through voice control, search/recommendations functionality); we note that manufacturers may elect to cede this UI advantage to third parties (e.g., licensing Google, *et. al.)*
Content delivery can drive outcomes in adjacent markets	▪ Delivery of TV content has often been used to drive outcomes in adjacent markets – e.g., bundled with broadband from ISPs; some of the biggest global players have used content to sustain outcomes in a range of adjacent markets (music, gaming, e-commerce), increasingly personalising services through data capture ▪ Best example is Amazon using Amazon Prime Video to secure and maintain e-commerce activity)
Global players also seeking to colonise households	▪ Google and Amazon in particular are seeking to use home assistants/smart speakers as a means of capturing all household engagement (for example, enabling voice to control Big Screen TV with a common search interface); this is easier if common OS is found in multiple devices (TVs, speakers, phones, tablets) ▪ Global players increasingly prepared to 'buy' market share through subsidised hardware, services – earning returns elsewhere along the value chain, in adjacent market segments or being prepared to delay payback

Below and following, we outline trends in relation to the key business models that underpin value generation along the connected TV segments, starting with the fastest growing: SVOD

- The growth of SVOD take up in the UK has been substantial – more than 14m households now have at least one SVOD service, and we estimate the value of the market to be £1.3bn in annualised revenues (by 2018)

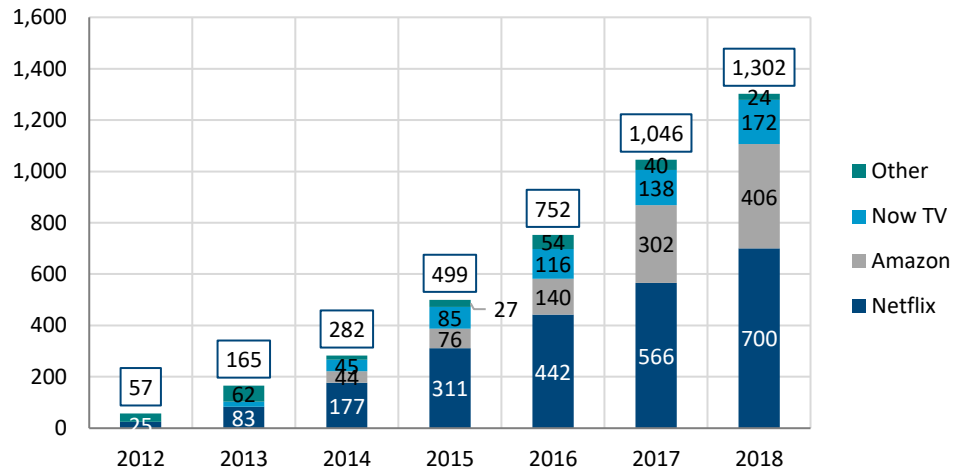
- Legacy broadcasters are looking to offset declines in linear viewing by launching a range of on demand services, including Disney+ (Disney), Peacock (NBC-U), and HBO Max (WarnerMedia); it is possible the SVOD market will start to consolidate – as the channels market did previously

  – This may come as the result of 're-bundling' by legacy pay-TV operators or through growth in new aggregators such as Amazon and Apple, capitalising on consumer preferences for single billing, single ecosystems and bundled pricing

- Bundling has been common in pay TV, but may also become a model for OTT, particularly for Apple, where a slowing smartphone market has led the company to look to subscription services (including from third parties) to fuel growth (OS providers typically seek to charge 20-30% of revenues)

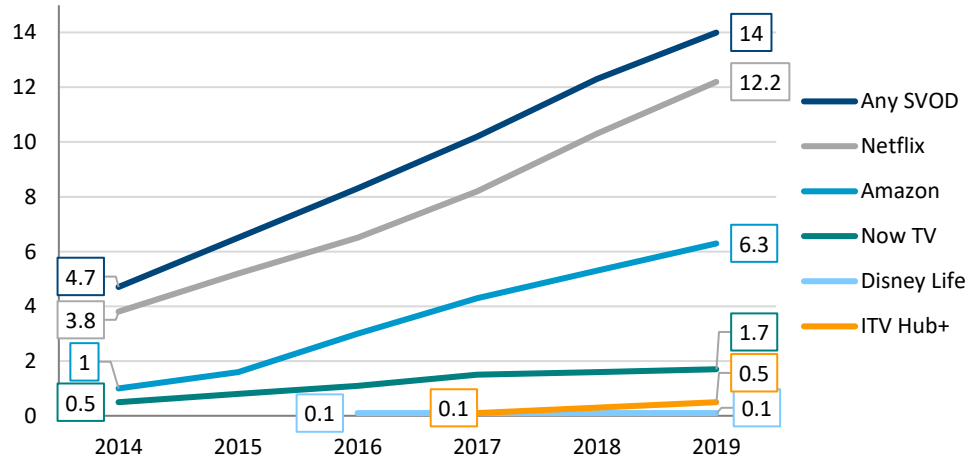
- In particular, analysts expect the launch of bundled subscriptions, including Apple TV+, Apple Music, Apple News+ and Apple Arcade this year

SVOD revenues in the UK, real terms, £m (2012-2018)



Source: Mediatique, Ampere Analysis.

Take up of selected pay TV and SVOD services in UK households, in m

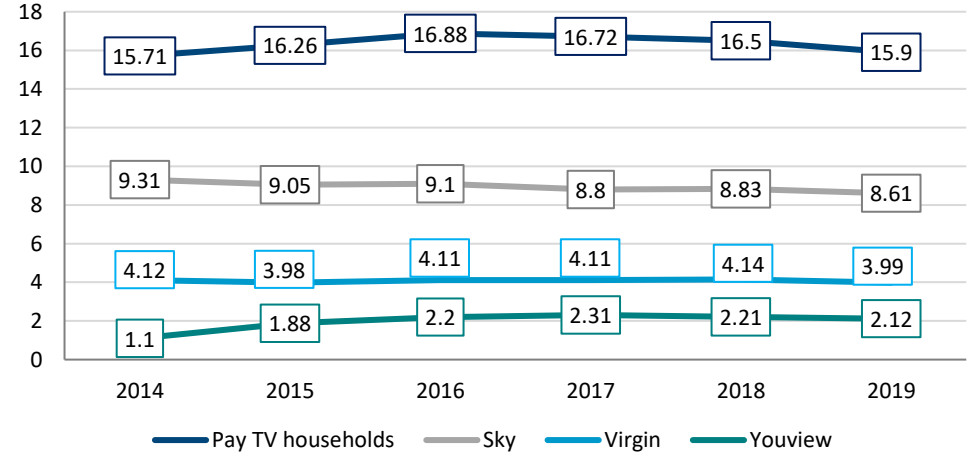


Source: Mediatique.

Traditional pay TV subscription has come under sustained pressure in the face of SVOD services and cheaper 'lite' pay options, although not to the same extent as seen in other mature markets

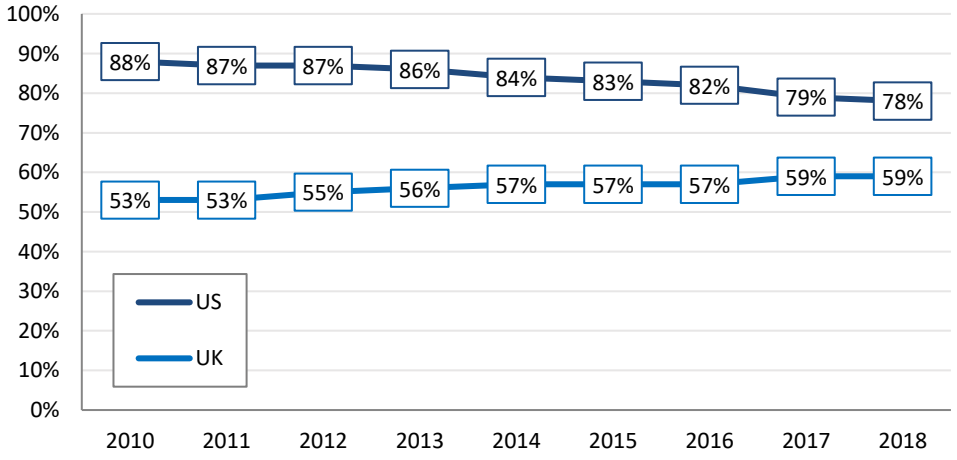
- Unlike in other mature markets (e.g., the US), the growth of SVOD take up has not led to endemic cord-cutting
- Nonetheless, UK pay-TV operators have come under pressure – conceding ground to new entrants and offering their own lower-ARPU alternatives and greater flexibility for customers
- However, net additions have slowed; in response
  - Sky has opted to segment audiences, offering both low-cost OTT services (Now TV) – to capture any customers looking to spin down – and premium platforms (Sky Q) to lift ARPU of 'full-fat' customers
  - In contrast, Virgin has focused on premium bundling, cancelling its lowest-cost standalone TV package
- For both, the challenge of customer retention in the face of continued SVOD entry (Disney+, Peacock, etc) will persist
- The pressures on pay TV operators have informed significant strategic shifts (diversification by product and service, aggregation of SVOD on proprietary platforms, investment in content and 'smart' advertising, realignment of content supply (focussing on fewer channel/service propositions)

UK pay TV households, m (2014 – 2019)



Source: BARB. YouView includes households with BT, TalkTalk and YouView platforms.

Pay TV penetration in the US and UK, % of households (2010 – 2018)



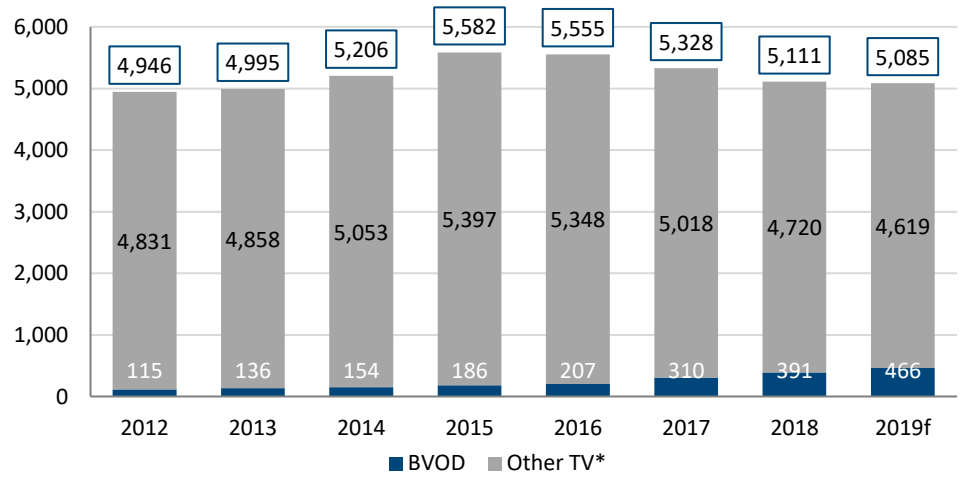
Source: Leichtman Research Group, Mediatique.

TV advertising, while remarkably resilient, is showing signs of a shift in favour of ad-tech enabled solutions, following consumers in the balance of linear versus non-linear viewing

Mediatique

- Pressures from declining linear audiences have suppressed TV advertising in real terms; the losses incurred by broadcasters have not been offset by BVOD (see at right)
- While common in digital advertising, programmatic and targeted advertising have proven difficult to implement in linear TV viewing (for a combination of technical and strategic reasons – i.e., disinclination to unnecessarily accelerate the pace of disintermediation)
- However, this is starting to change with the advent of dynamic ad insertion technology that delivers truly addressable advertising (and realisation among traditional players that the trend cannot be resisted)
- Other ad tech-supported platforms are being piloted on behalf of broadcasters, including Planet V (ITV) and Sky AdSmart (also deployed for Channel 4 and Channel 5 in return for revenue share on 'adsmartable' inventory, inventory that can be layered with household data to sustain premium pricing); advertising is also a key revenue target for OS providers
- Currently, measurement across linear and non-linear is lagging – with BARB's Project Dovetail still being rolled out and CFlight (Comcast's US fusion of linear and non-linear) only recently announced for the UK (in tandem with Sky)

TV advertising, adjusted for CPI, gross, £m (2012-2019)



*Source: AA/WARC. * 'Other TV' is comprised of spot only, sponsorship and any other revenue accruing to linear TV channels.*

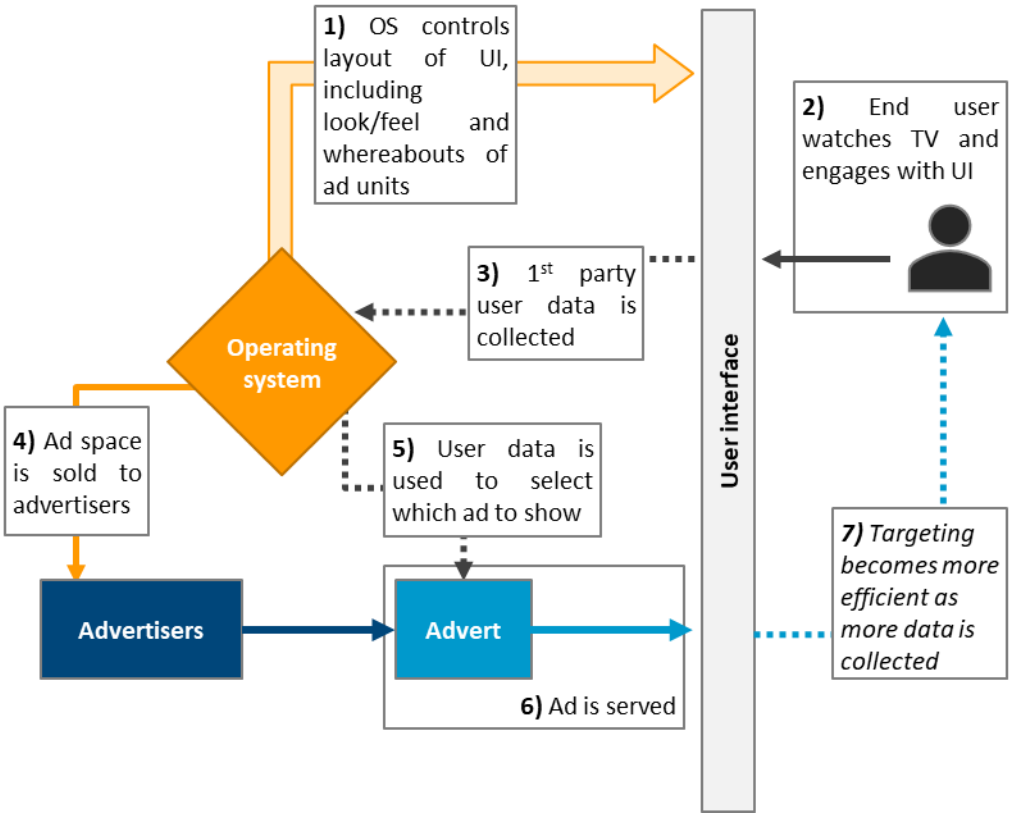
Key UK broadcasters and ad tech implemented

Broadcaster group	Ad tech	Vendor
ITV	Planet V (addressable ad platform for ITV Hub based on Amobee tech); Sky AdSmart	ITV sales
Channel 4	Sky AdSmart (across Sky and Virgin platforms)	4Sales
Channel 5		Sky Media
Sky	Sky AdSmart; CFlight (ad measurement tool)	Sky Media
Virgin Media	Cadent (addressable ad platform)	Virgin Media Solutions
CBS, Disney, Discovery, NBCUniversal, WarnerMedia	Project OAR (working to produce a technical standard for an industry-wide cross-platform ad measurement)	*n/a (not yet launched)*

IP-enabled smart TVs and other connected devices have created new possibilities for advertising – this is particularly important as hardware manufacturers and OS providers aim to generate recurring revenues

- Ad units – spaces for single (e.g., banner) ads to sit within a UI – have long been a feature, e.g. via Amazon Fire TV or Roku
- However, increasingly ad units are becoming more prominent on CE home screens as well, as manufacturers and their OS partners look to generate incremental revenues beyond hardware
- In late 2019, LG gave over the first navigation point on the launcher bar – the position a user lands on first when turning on the TV – to an ad unit: this shift also underlines the importance of control of the OS
- Recently, Google updated the Android TV OS on several smart TV brands, including Sony, Xiaomi and Nvidia, which adds a row of 'Sponsored content', with scrollable ads to a range of content and apps; these targeted ads are wholly managed and controlled by Google; however, the percentage of revenue thus associated to Google is unknown
- As is evidenced by these developments, the scope of advertising is widening; as we see overleaf, CE manufacturers are increasingly ceding control of ad inventory on homepages to a third party (the OS provider or an ad-serving partner such as Samba), taking a revenue share in return

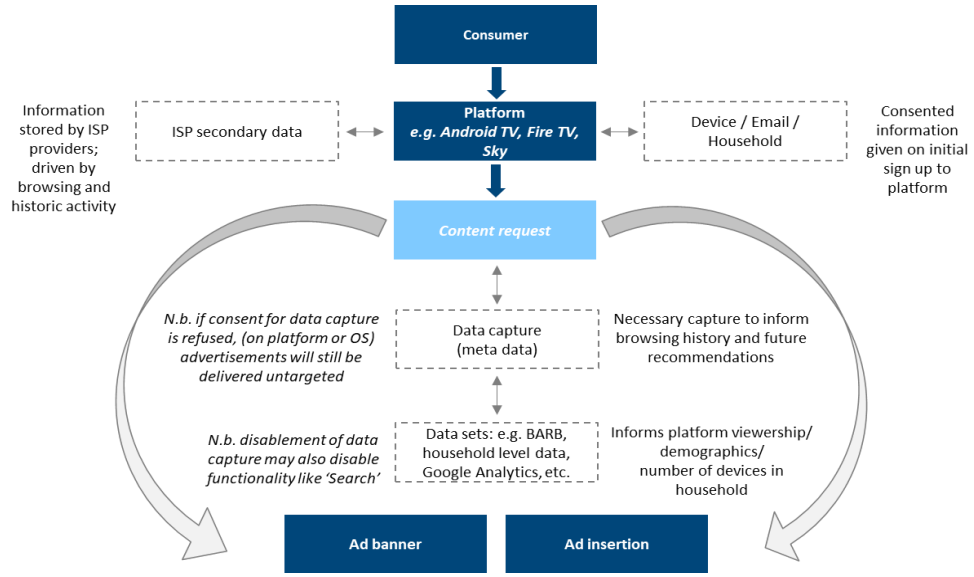
How ad unit space is sold and delivered on smart TV interfaces



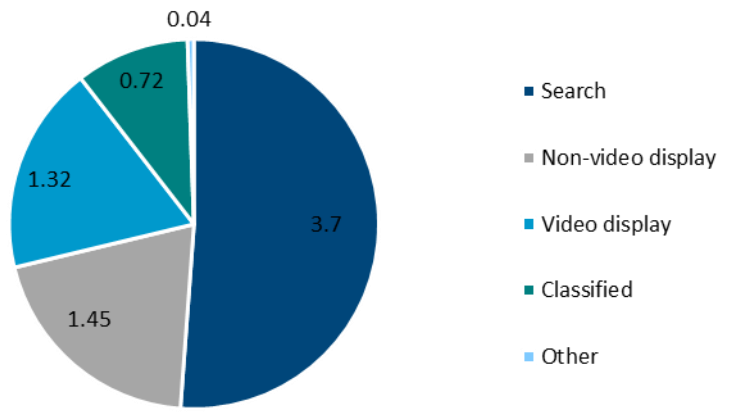
A greater level of data integration will create substantial new opportunities for digital advertising, enabled by smart devices and a shared ecology (e.g., within an Amazon, Apple or Google eco-system)

- Much of the data to inform engagement on connected TVs is captured in two ways: either it is licensed by OSs to third-party advertisers (e.g. Samsung to Samba TV) or kept by the OS to use itself (Roku TV OS) – see overleaf
- This data may be aggregated with data generated within a given eco-system (for example, Amazon smart speakers/tablets/phones or via Google Android) – driving significant revenues from, e.g., YouTube and from the banner advertising available on home pages of connected TVs
- The commercial PSBs have all launched their own broadcaster VOD propositions (ITV Hub, All4, my5) and all revenue generated via these propositions is retained by the broadcaster
- However, there are increasing calls from OS players (Google; Amazon) to take a share (up to 30%) of revenues generated by BVOD viewing; this is similar to the revenue share demanded by Sky AdSmart (see: https://www.wearema.co.uk/2019/07/15/sky-adsmart-affordable-targeted-tv-advertising-for-your-brand/)
- Thus the separate silos of digital advertising – banner, AVOD and the specialist BVOD subset – may well begin to merge, with OS providers in particular able to leverage a share of BVOD (with all digital advertising benefiting from the declines in linear share and revenue)

Journey toward addressable advertising



UK Digital Ad Spend, H1 2019, £bn (IAB UK)



Source: IAB.

Advertising via smart TVs – whether within the OS or more generally – relies on a greater degree of data collection which can either be used internally or sold to third parties

- 1st party data collects automatically when hardware is IP-enabled and data is mediated by the associated OS
- A number of value-chain participants are able to collect relevant data, including ISPs (with 'perfect' knowledge of bandwidth but less extensive transparency on specific activities); OS (depending on level of permissive data capture and degree of 'sharing' with third parties such as Google); apps (tracking, for example, all activity when consumers are within the app – content requested, time spent, consumer journeys)
- The data collected is often more valuable because of its granularity – it can be used to target individuals rather than applied at the household level (this is even more granular when fused, where available, with other data such as from Google, Sky Experian, etc.)
- More detailed data capture is necessary for broadcasters as advertisers have been used to a much greater degree of targeting in digital ad spaces for almost a decade
- Broadcasters have only recently embraced new ad-tech – particularly around dynamic ad insertion and programmatic, and these forms remain relatively nascent in the market

Although TV manufacturers get portions of first-party data, data by definition is owned by the OS (generated by apps downloaded to the TV's hardware)

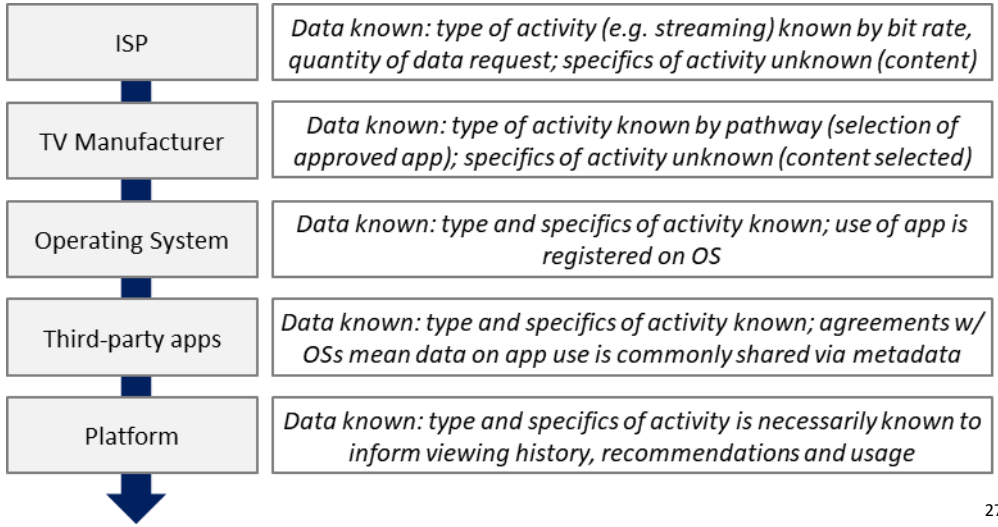
Samsung smart TV case study: data collection

Type of data collection	What does this encompass?
Provided information	▪ Name; date of birth; comms history; contact information
Collected information	▪ Contact information; shipping information; billing information; device information; unique identifiers (e.g. IMEI & serial number); phone numbers (of user and of address book contacts); mobile network code; IP address; location/GPS information; voice searches (if enabled)
Obtained information	▪ Publicly and commercially available information; information from third-party-social networking services (if user consented)

For what purpose?

- *Practical*: registration of new devices and provision of services and requests;
- *Commercial*: customised content delivery; customised advertising; targeted sponsored content and macro analysis of the wider Samsung ecosystem

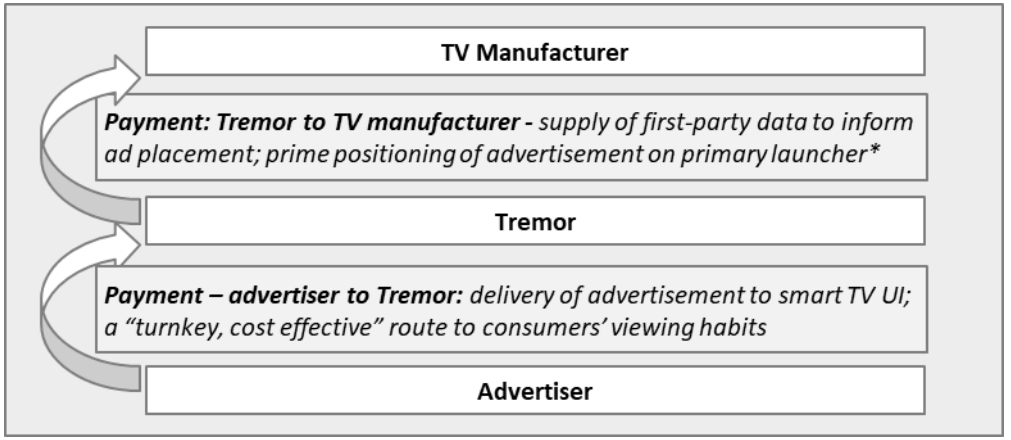
Types of data collected/shared by various players along the value chain



The growing need for TV platforms and services to fully monetise their offerings has created a dense market for B2B services, particularly focused around enabling first-party data collection

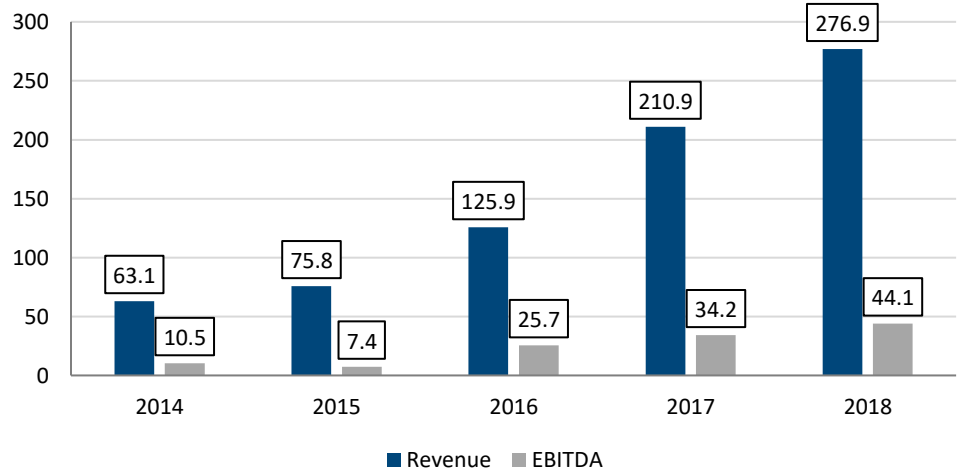
- While global players may be able to develop and implement their own proprietary systems for using first-party data on their platforms, many smart TV manufacturers cannot
- A network of B2B relationships has resulted, e.g.:
  - Tremor Video: Tremor provides entertainment advertisers and apps with visible ad unit placements on the UI (supplementary to promotional content) that are native to the smart TV experience
  - Samba TV: Samba TV is employed by advertisers to deliver ads to devices connected to the same internet connection as an ad just served on television; makes use of IP, location and content history
- In addition to these B2B relationships, there has been a marked trend in recent years toward adopting standardised OS propositions (e.g., from Google Android, Roku
- We have heard from a range of stakeholders that manufacturers (Sony, LG) are increasingly turning to 'standard' sources of OS to enable next generation connectivity on a most cost-effective basis: Sony has been the most recent major player to opt for Google Android
- Samsung remains wedded to its own OS

Case study: Payment flow in delivery of advertisement (via Tremor)



** The primary launcher is the bottom row of the launcher navigation tool that launches when the home button is pressed.*

Tremor's revenue and EBITDA, in $m (2014-2018)

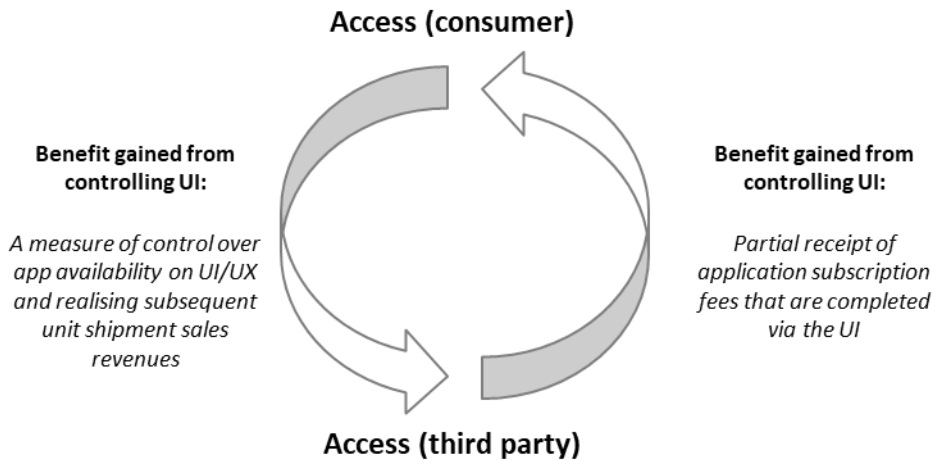


Source: Tremor annual reports.

The benefits available to those controlling the TV UI may be realised in myriad ways, and these benefits are often considered globally rather than at the level of the domestic market

- Where a provider controls the OS and conditions the terms of access to content and services, it can:
  - Lock in revenue from unit sales (e.g., of Fire sticks) that are driven in part by the availability of a complete suite of third-party applications
  - Access recurring revenue is driven in part by subscriptions to third-party applications completed via the OS (for example, subscribing to Netflix via a OS-related single bill)*
- We consider at right the implications of the dual advantages of maintaining control of the UI in the context of how Fire TV, as OS provider, seeks to monetise its gatekeeper status
- We note that these UI elements are subject at times to global trends (e.g., agreeing prominence and access arrangements for a given service provider at global level)
- Local market participants report there is small value monetisable by broadcasters for metadata; however, we have heard in our stakeholder interviews that much of this data is replicable via 'scraping' off air
- In terms of leverage, only iPlayer has 'hygiene factor' value among PSB players (this has informed LG's decision, following inability to agree terms with Freeview Play, to favour bilateral negotiations, starting with the BBC)

Mutual benefit of 'Access' when controlling UI/UX



Case study: examples of how TV UI can be controlled – Fire TV

Method	Application
Access	▪ Fire TV/JVC: a 'Netflix' button incorporated to smart TV remote; value of a full application suite attracting consumers to the platform outweighs threat of competition from Netflix
Prominence	▪ Fire TV and ITV remain in negotiation over the prominence of the ITV Player app on the Fire TV UI; Amazon requesting 30% of ITV advertising revenue in return for favourable positioning
Hardware shortcuts	▪ Re – programmable hardware shortcuts, e.g. buttons on remotes, gives controller of UI the ability to auction access to that shortcut (e.g. Rakuten purchasing 'Movies' button on LG smart TV remote controls).

*See https://developer.roku.com/en-gb/docs/features/monetization/monetization-overview.md; and https://variety.com/2018/digital/news/amazon-channels-data-1202815573/.

Potential opportunities in OS/UI to monetise have yet to be fully realised (moreover, commercial terms are seldom openly shared); prominence is emerging as a key battleground, however

- OS/UI monetisation opportunities include data sharing, sharing of subscription or advertising revenues, payments for optimised search outcomes, payments for inclusion in recommendations
- 'Traditional' distribution costs (e.g., broadcast) will eventually be supplanted as content delivery is transitioned to IP and margin is 'freed up'
- Prominence on UI home screens is of vital and growing importance as the number of TV services available via connected TV gateways proliferates and as more devices become inter-operable (e.g., smart speakers/TVs – see slides 30 and 31)
- Legacy EPG protections do not (yet) extend to smart devices/TV UIs; prime positions are auctioned to the highest bidder (or are subject to other forms of value 'trading' – including revenues shares, or promoting 'owned and operated' services)
- Like paying for 'virtual prominence' on a UI home screen, control of a TV UI enables monetisation of hardware (e.g. rewireable shortcut buttons on TV remotes)

Samsung Smart TV UI: App prominence

Source: Samsung.

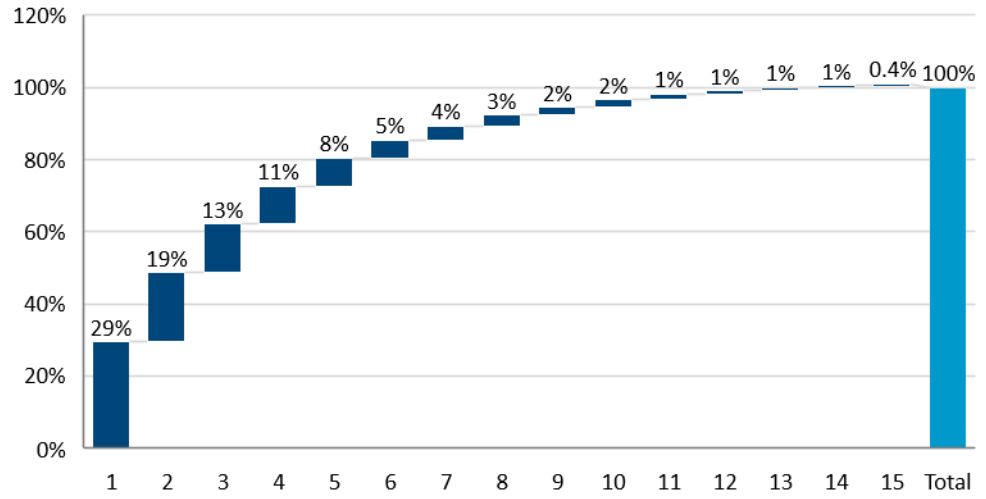
Rakuten TV: shortcut buttons on smart TV remote controls

Source: Manufacturer websites.

The value of prominence is difficult to capture, but a read-across from traditional pay-TV EPGs suggests the homescreen will remain a battleground among and between manufacturers, platforms and service providers

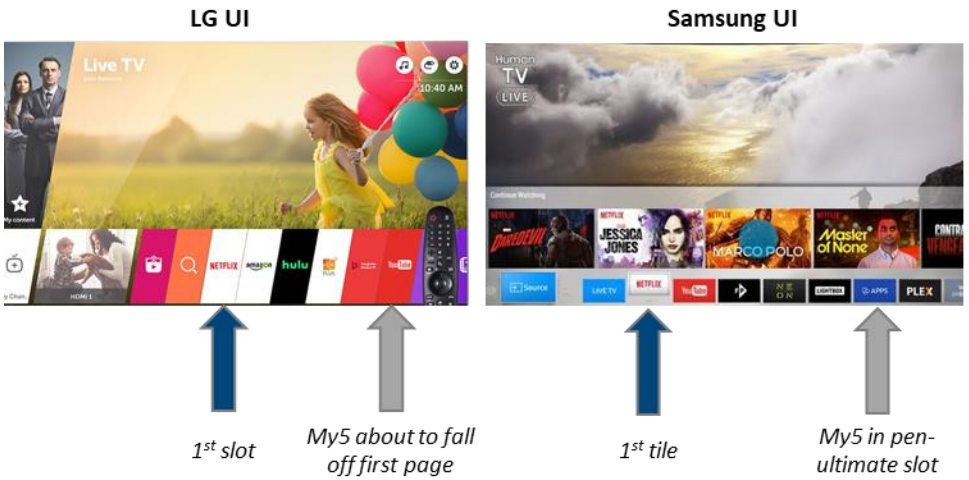
- In the face of sustained and unprecedented entry from global operators – who come with global budgets and look to negotiate deals on a global (and not just local) level – it is useful to consider the size of threat to legacy broadcasters for which prominence has been a vital benefit
- Prominence on connected TVs has been notoriously difficult to value – and the ways in which content is surfaced (through both home screen but also via additional layers/tiles, previewing, recommended content, voice controls permitting search to by-pass the home screen, etc.) is changing
- Even so, the home screen remains an important piece of real estate, and is area of specific bargaining between content providers and gateways (reading across from the traditional EPG, at right, suggests 30% of value in connected TVs might be on the front page)
- In recent negotiations on prominence, broadcasters report manufacturers are asking for 'tens of millions' of pounds in return to prominent positions on a homepage (see overleaf)
- This suggests that, in a fully commercial world (in which prominence is not guaranteed for PSBs) a channel or service would have to pay significantly to maintain prominence against (global) newcomers and other commercial players

Value of pages 1-15 as a proportion of total EPG (Sky/Virgin), 2018



Source: Mediatique, Expert Media Partners.

Position of My5 if two new entrants take top two slots on UI



In the horizontal TV market, traditional prominence was easier to mandate; this is not true of the connected TV market, where non-broadcast services jockey for position

- Traditional EPG prominence has been possible to protect in national markets as TV interfaces were based on live broadcast TV schedules, which vary by market; until recently, even non-linear prominence was reasonably well protected as CE manufacturers all sought to accommodate 2-3 'global' propositions and all the PSB players
- With the growth in non-broadcast services (including both linear and non-linear IP), there are now a number of entrants vying for prominence, and positioning on home screens has increased in value
- Currently, negotiations in the UK between service providers (e.g., BBC, ITV) and companies controlling the OS and UI/UX are complicated and in a state of flux
- The PSBs have agreed to mandate DUK to negotiate prominence and certain aspects of consumer navigation on behalf of all the PSBs – BBC, ITV, Channel 4 and Channel 5 – and these negotiations have typically been held with the CE manufacturer (LG, Panasonic, etc.) and have resulted in the payment of a licence fee (set per TV sold) in return for the use by a CE manufacturer of the Freeview Play kitemark and branding

Agreements between service providers & OSs, various

Negotiating parties	Description of agreement
Google (Android) & DUK	Given the role of Google in supplying Google Android TV OS, there is an agreement between Google and DUK (which covers the relative position of the PSB Apps and the search and functionality requirements for Freeview Play); this also extends to Freeview Play on Android mobile devices
Samsung, Freeview Play & PSBs	Samsung is not a Freeview Play CE partner, and has reached bilateral agreements with each PSB separately; terms have not been disclosed publicly
Amazon Fire, iOS & various others	Several manufacturers are experimenting with new OS partners – e.g., Amazon Fire TV, iOS – as these are being offered for free by the partners (who are compensated in other ways, such as access to data, advertising revenues and locking in customers for e-commerce) – we review some of these sources of adjacent value overleaf
LG & Freeview Play	DUK reports that LG is not renewing its Freeview Play kitemark deal, and is instead seeking bilateral agreements with the PSBs directly; the expectation is that LG will accommodate the BBC's requirements on prominence, search integration and brand accreditation (and in any event the BBC cannot withhold under its Syndication Policy)

UK content prominence in the context of global providers

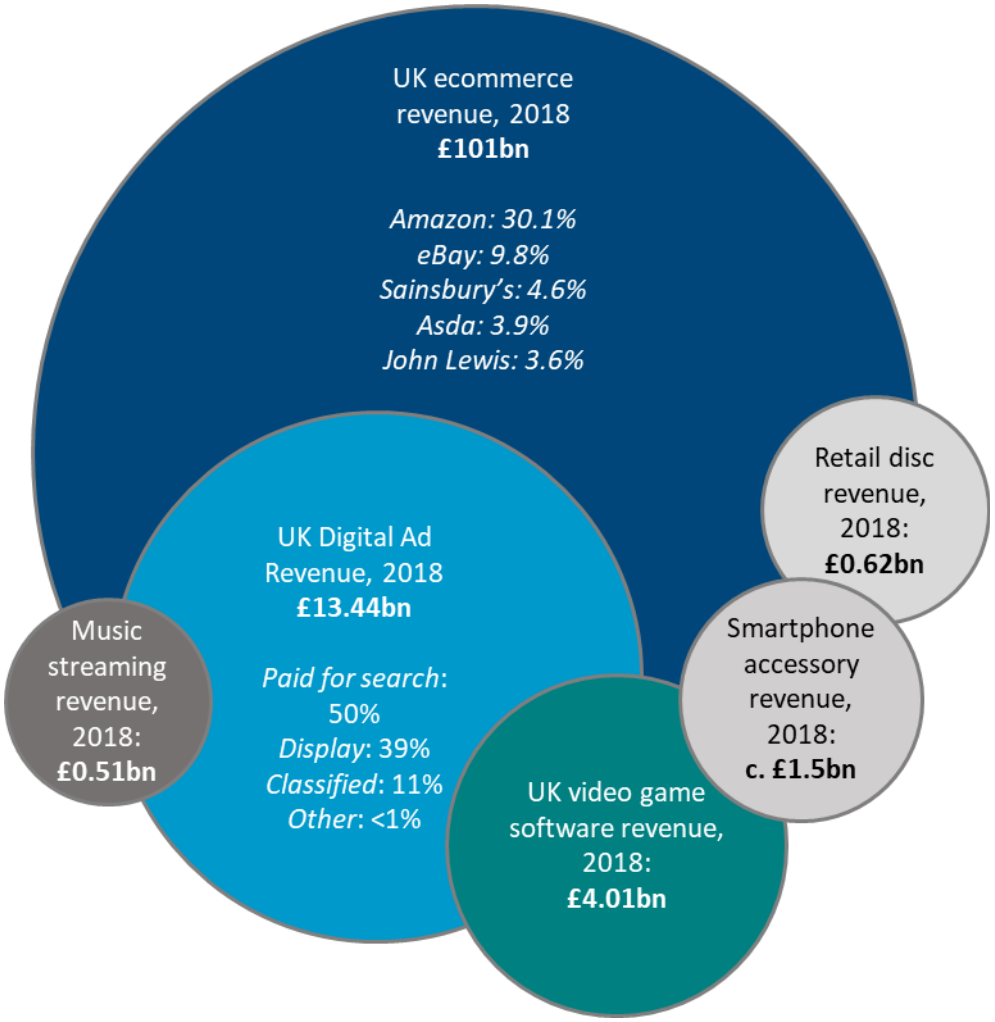
UK content providers report their discussions with CE manufacturers and/or (where relevant) third-parties such as Google, are all subject to the imposition of certain constraints around positioning vis à vis large global providers such as Netflix, Amazon Prime, YouTube and, more recently, Disney+, all of which are likely to be more prominent that most if not all PSB players on UK connected TVs. While there is no transparency, it is assumed that large players have all paid for prominence, with only Netflix now likely to be carried without cash payment by smaller manufacturers because of its strong market share in multiple territories.

While we have concentrated in our work on values arising from connected TV gateways directly, we outline here the degree to which 'adjacent' silos of revenue generation can have an impact on value chain dynamics

Mediatique

- In addition to the values generated in the delivery of TV services to end consumers via connected TV gateways, there are a number of adjacent revenue categories that are important to consider (and which may lead value-chain participants to accept no or negative margins in relevant segments if they can identify value generated adjacently)
- Digital advertising – including search, non-video display – which accrues to some of the same players as those active in the TV value chain, and is in turn reinforced by the activities the relevant players in TV gateways – Google is the obvious example
- Mobile subscription and usage revenues – the ability of providers to maintain and/or grow their income from mobile services can be increased by the market position they take in connected TV gateways – Apple, Amazon and Google are all examples
- E-commerce – the significant advantages of a strong market position in the connected TV segment provides a mutually reinforcing impact on a company's existing e-commerce footprint – Amazon is the classic example (see overleaf)

Value of selected adjacent silos not captured on value chain



Source: Mediatique, IAB UK, PwC Ukie, Base, Deloitte, BPI; Sizes of circle are indicative of market size.

Amazon Prime Video is a stand-out example of how value generated away from the connected TV gateway market can be used to justify low or no margin participation in the value chain

- Sky, Virgin and BT have for years identified returns from 'adjacent' businesses as the justification for earning little or negative income in a new segment
- For example, broadband and mobile telephony have been seen by Sky as a means of diversifying revenues and locking in households to core pay TV services; likewise, BT prices its sports content at little or no margin, aiming to offset erosion of its telephony and broadband income
- For new entrants, this 'adjacency' strategy, extends further afield; the clearest example is the role played by Amazon Prime Video in driving Amazon's e-commerce sales
- This so-called 'virtuous circle' can allow Amazon to run Prime Video as a non-profit generating segment while still retaining massive benefits from the service
- The key benefit is to drive/retain subscriptions to Amazon Prime Shopping, lock in Amazon as a 'default' e-commerce engine and add to Amazon's data capture and monetisation capabilities; even at low unit margins, Amazon's e-commerce income is staggeringly high*

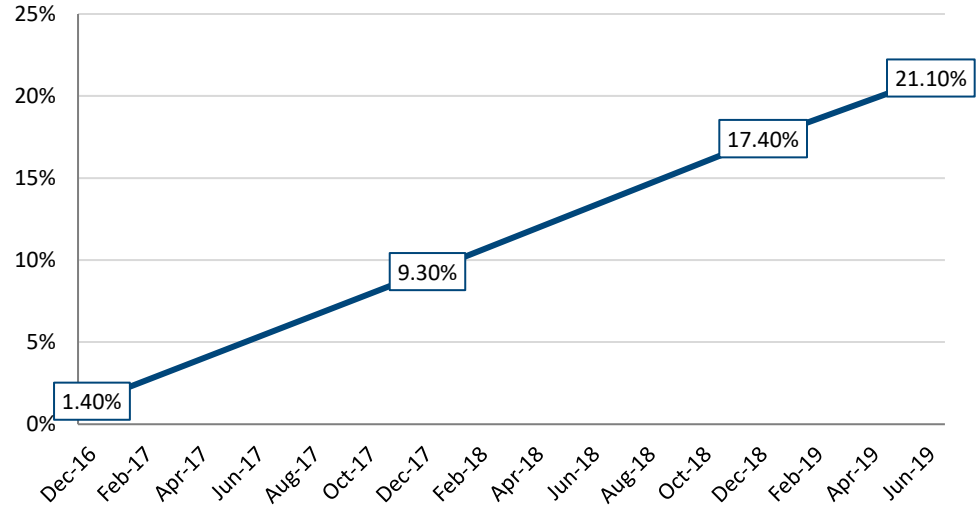
Amazon Prime Video's virtuous circle

*This strategy was summarised in the Sunday Times (3 May 2020): "Amazon Prime Video may look like an attempt to diversify into television on demand. Not so. It's about selling more Amazon's 600m products to its 300m customers."

Finally, the intense competition among providers of smart speakers and home assistants – and likely evolution in this market – will also have a bearing on outcomes in the connected TV gateway value chain

- IP connected devices such as Amazon's Echo and Echo Dot and Google Home are the fastest growing technology for in-home use (see graph at right)
- Significantly, both companies are providers of operating systems for the delivery of a range of content – music, video, gaming (and compete here with the third key consolidating standard for delivery of content and services – Apple iOS)
- While smart speakers and home assistants are to date predominantly audio services, characterised by the use of voice and used mostly to access streaming/radio, they are set to change with:
  - The addition of screens to speakers and home assistants providing new means of navigating to services
  - Increased capability to 'colonise' other devices in the household, taking advantage of common OS features
- This is likely to mean that standardised UI/UX, shared among multiple devices but crucially including the Big Screen, will grow share in UK households
- Providers like Amazon, Google, Apple may favour their own content and services (or those willing to pay the highest price for access, prominence), thus disfavouring domestic providers

Take up of smart speakers in UK households, 2016-2019



Source: Strategy Analytics.

The 'home colonisation' strategy

Colonising the home

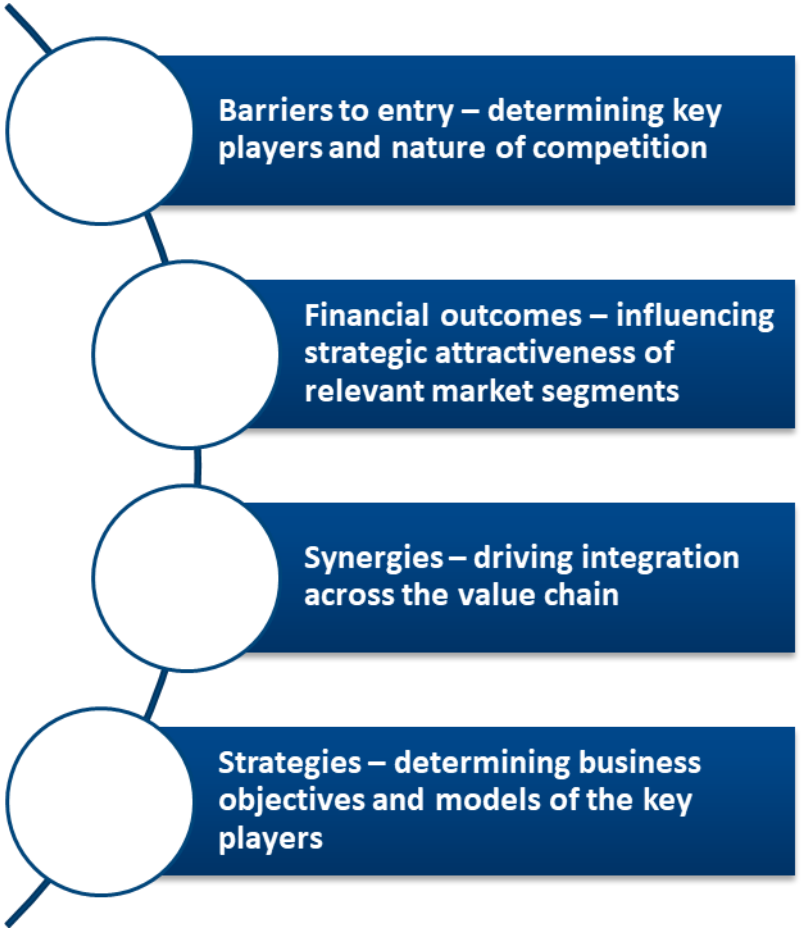
The clear aim of Amazon, Google (and to a lesser extent Apple) is to become the single point of consumer interface in the household and on the move, featuring a single operating system shared across multiple devices, easy (usually voice-assisted) controls, single billing, navigation, personalisation and data capture.

This is aimed not only at securing income for owned and operated services but also taking a share of third-party revenues as well (subscription to other providers, shared advertising income, payments for access and prominence)

We have analysed the key dynamics and characteristics of the connected TV market and considered the implications for future market evolution and activity

- In assessing the key features of the connected TV marketplace, we have considered a range of dynamics including barriers to entry, financial attractiveness, synergies, business strategies (including mergers and acquisitions)
- These dynamics, in turn, have significant implications for market structure and the strategic attractiveness of key elements of the value chain
- They also determine the balance of power along the value chain, and the role that segments play in driving overall outcomes
- We have considered how these market dynamics might influence bargaining power and relative position of providers and gateways, and inform future corporate activity and market entry in the connected TV space

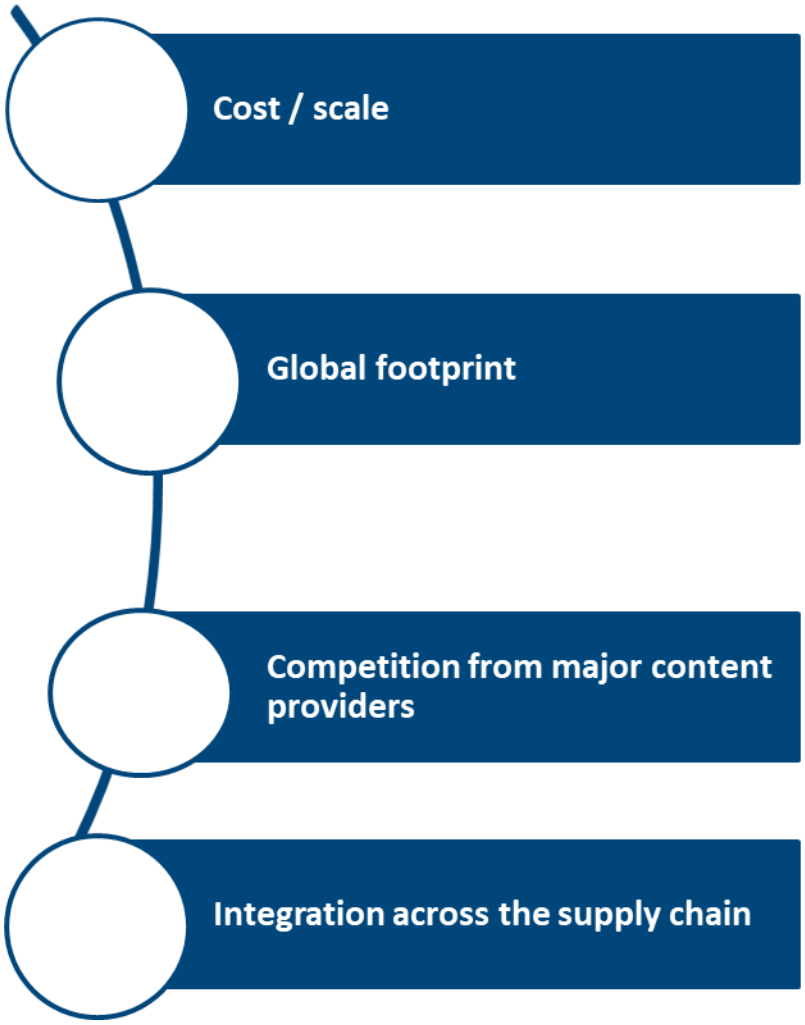
Key market features and dynamics



Barriers to entry are a major factor driving market outcomes in the connected space, notably in determining the presence and role of global players

Mediatique

Barriers to entry in the connected TV space



The ability of new entrants to scale barriers to entry is evident

- Despite significant cost barriers (R&D, skills set, legacy contracts), new entrants may forego profit in the short term to secure long term market share if the 'size of the prize' is attractive enough
- However, a new entrant that has sufficient scale already in its core businesses will have a different approach to risk
- Presence in adjacent markets globally (e-commerce; advertising; content aggregation) can cross-subsidise market entry; this benefit is enhanced by a greater ability to establish commercial deals with other global providers (e.g., homepage presence in multiple markets for Netflix on Sony devices)
- A digital giant with consumer affinity already established (perhaps building on an existing brand) might enjoy easier access to the value chain
- Legacy providers with high (but declining) revenues from pay TV platform operators continue to pose competitive challenges to new entrants – and the cost of funding entry via content propositions is high, even with the shift in consumer behaviour in favour of SVOD and away from legacy broadcast distribution
- Integration across the supply chain promotes entry into multiple points along the chain
- Existing relationships (e.g., content aggregation, cloud services, OS, ad tech) can be leveraged into adjacent market segments

Recent experience suggests that large global players have had the most success in forging market share across multiple market segments, leveraging credentials in other segments of the value chain

Mediatique

- In recent years, new-entrant strategies have clustered towards the consumer-facing end of the value chain, reflecting changing consumption habits and the ease of entry around OTT-IP compared to scaling high barriers to entry in traditional distribution (cable, satellite, DTT)
- Of recent entrants to the chain, those who have made the most significant impact are manufacturers, brands and producers of content who are already recognisable along the connected TV value chain:
  - Now TV (Sky TV): launched in 2014 when Sky was present in 9.31m households, shortly after its peak in 2012
  - JVC & Amazon: smart TV released in the UK; Prime Video has 34% share of UK SVOD subscriptions and a 66% share of smart speakers
  - HBO Max: SVOD (USA launch in 2020) with access to legacy brand content and existing credentials in infrastructure (AT&T)*
- Roku is an exception to the trend of leveraging an existing brand or connected TV presence: it has achieved a market share (1 in 4 smart TV sets sold in the US is powered by Roku OS) without these benefits
- Its success is due to early identification of streaming to TVs as an opportunity: the first player to stream Netflix to TV (2008)

Recent TV service launches

Who: *Sky DTC proposition; low ARPU IPTV service (Now TV)*

Why: *Skinny bundle alternative to Sky Pay TV proposition (£8.99 p/month versus £42.99 p/month)*

How: *Targeting underserved 'skinny' segment of the UK market; leveraging Sky channels experience, original content and existing partnerships*

Who: *JVC & Amazon partnership in TV hardware and Fire TV OS*

Why: *The first integration of Fire TV with TVs (removing requirement for additional hardware e.g. Fire streaming stick)*

How: *Exploitation of existing Toshiba technology; harnessing learnings gained from Fire UI in additional hardware*

Who: *OTT hardware and OS provider (Roku)*

Why: *Competition absent in segment of the market*

How: *Aggressive identification of opportunity (OTT hardware, first player to stream Netflix to TV in 2008); vertical integration across the value chain (progression from hardware to OS provision)*

Who: *HBO (AT&T) SVOD platform*

Why: *Join cohort of new entrants in SVOD and IP delivered content*

How: *Existing expertise in streaming (HBO Now & HBO GO); legacy catalogue of original content*

**HBO Max will not be launching in the UK; instead, HBO has renewed its output deal with Sky. This underlines the importance of brand (HBO is well known in the US; far less in the UK).*

However, barriers to entry vary significantly across the market segments which has significant implications for identifying the main areas of potential future activity

Mediatique

Entry point	Cost/scale	Global footprint	Intensity of competition	Integration across the supply chain	Scale of barriers to entry	Why?
	Effect on entry:	*Effect on entry:*	*Effect on entry:*	*Effect on entry:*		
Content and production	**High** – content price inflation (driven significantly by SVOD) means increasingly inaccessible and bigger budgets required	**High** – content costs growing, favouring those at global scale (richer thus more able to afford) e.g. Netflix	**High** – decline of pay TV and premiumisation of content (SVOD) means accessibility for few	**High** – content and production increasingly performed in-house by existing members of chain		Excessive cost and competitive, capable global market
Aggregation and distribution	**High** – premium content (thus 'fewer, better' channelling) means scope for distribution is narrowing	**Mid** - national PSBs have role but global providers will continue to take share from regional platforms	**High** – crowded space for new entrants but consumer appetite for IP delivery/VOD is maintaining	**Mid** - entrance made easier by integration across supply chain but not impossible (e.g. Quibi)		Increased desire for premium content amidst crowded space
Content delivery infrastructure	**High** – scale of infrastructure and resource required to compete (AWS; Arqiva) is significant	**Mid** – global footprint essential for infrastructure (Akamai); unnecessary for discrete software	**Mid** – new modes of delivery (IP/CDNs) is at expense of traditional (DTT/DSAT)	**High** – Amazon; Google & Microsoft have significant share of market: all integrate on the chain		Significant infrastructure required; capital necessary for new entrants
Additional hardware	**High** – Profit necessarily foregone to gain market share (e.g., Roku still unprofitable despite share)	**Mid** – players commonly found in adjacent segments (Google; Amazon) but Roku shows possible	**High** – market moving toward smart TV and cloud delivery is unfavourable for the segment	**High** – major players leverage existing presence (in OS; SVOD; screen) for device interoperability		Shrinking market; share dominated by small group of global players
Screens	**Low –** cost of screen manufacture (smartphone; TV) is low relative to other costs along the chain	**Mid –** clustering around a core group (Samsung; Apple) but new entrance is possible e.g. Hisense	**Low** – market sentiment suggests continued consumption on smart TVs and on mobile devices	**High –** screen production soon to be synonymous with OS (Android; Fire); presence here is beneficial		Low costs offset by low margins and immovable competitor set (Apple & Samsung)
OS and user interface	**Mid** – tech infrastructure relatively inexpensive to scale with access to right expertise	**Mid** – scale quickly achieved by partnerships with global platforms e.g. Tremor & TV hardware	**Low** – migration to Smart TVs is an opportunity for OSs, and tech within OS, to integrate further	**Mid** – Larger players with existing chain integration will develop tech in-house e.g. Sky AdSmart		Market to consolidate around 3 main systems; smaller opportunities in tech embedded in OS

- Future market entry would be expected to congregate predominantly at the consumer facing end of the chain; screens and OS/UI have the lowest barriers to entry of the points scored here
- These scores are relative, though; despite being low cost, the screen segment continues to cluster around a core group of players (Samsung; Apple) and consolidation of OS is likely to accelerate this; despite seemingly low barriers to entry, consolidation will occur because market gains are rarely realised without secondary revenues or a pre-existing presence on the chain. CE manufacturers are also frequently ceding control from proprietary OSs in favour of the major cohort (Amazon; Google etc.)

Margin outcomes are an important barometer of the strategic attractiveness of market segments, but such financial outcomes can be trumped by broader strategic objectives

Mediatique

Margins of segments across the value chain (revenue margin, %)

Market segment	Content production	Aggregation & distribution	CDI (Content Delivery Infrastructure)	Additional hardware	Screen	OS & UI
Margin	15 - 20%	20 - 30%	10 - 15%	10%	5 – 10%	5 – 10%
Rationale	A core pillar of value across the supply chain; increased competition for content (among a limited cohort of capable producers, often operating at a global scale e.g., streamers; multichannels) will maintain attractive margin prospects	Despite historically high returns, margins in aggregation and distribution will come under pressure as global streamers maximise global exclusivity of content and as traditional aggregators lose share to new entrants	Margins in content delivery infrastructure will generally remain static; the transition toward consolidated CDIs will be core driver of this (AWS; Azure)	Additional hardware meanwhile presents low margin prospects; for the short time it remains relevant to the chain, it will act as gateway to adjacent revenue streams (e.g. addressable advertising) rather than as standalone driver	Likewise in screen, historically margin return has been minimal whilst volume and scale have been sought instead; this will not change: screen (via the OS) will be gateway to adjacent segments of the chain (ecommerce)	Margin in OS & UI are small relative to the rest of the chain; it is realised through subscription 'bounty' and incremental value of first-party data

- New entrants are most likely to be attracted by low barriers to entry and decent margins; again, this favours the consumer-facing end of the value chain
- Margins are most attractive in the aggregation segment (where traditional broadcast continues to generate decent returns, albeit on declining revenues); barriers are high here, however, and require serious capital (as Netflix, Amazon, Apple attest)
- The lower barriers to entry in OS and UI may be attractive, but margins have been driven lower through entry by players unbothered by intra-segment margins (e.g., Amazon and Google make their money not in OS but in the data and/or e-commerce opportunities generated) and, moreover, absolute level of revenue is low
- This skews not only margin generation but ROI as the returns are more likely to be generated elsewhere in the value chain or indeed in adjacent segments

Financial scale *per se* is also a major driver of influence and bargaining power in the connected TV market, shifting the balance of power in favour of large global players

- Scale, content ownership and OS control are significant factors in determining balance of power in relationships across the connected TV value chain:
  - Key players have reached global deals on prominence, access – Netflix, Amazon, Google all prominently displayed on devices in multiple jurisdictions; Disney 'bought' prominent positions in, e.g., the UK, the Netherlands, the US via global deals with Sony, Samsung, LG
- Scale is significant as a factor because of the proven stickiness and brand engagement that it implies; large market share generally translates to leverage when striking agreements, as Netflix proves
- Also a powerful bargaining chip is high quality, exclusive content, a driver that will remain key in driving consumer engagement (evidenced by Sky's HBO co-production deal, Amazon/Netflix focus on original commissions and Disney approach to promoting exclusive content)
- No PSB, with the exception of the BBC, has the 'must have' characteristics that are associated with leverage and bargaining position in relation to aggregators: the PSBs continue to collectively have real value in the UK, but this will diminish over time, absent new regulations, and they may be constrained by competition rules from collective action

Selected SVODs, manufacturers and OS providers

SVODs	Revenue ($m)	Subscribers (2019)
Netflix	15,794	c. 158m
Amazon Prime Video	14,168	156m*
Disney+	n/a	26.5m

TV Manufacturer	Revenue ($m)	Smart TVs sold (2018)
Sony	81,234	n/a
Samsung	205,191	32.97m
LG	51,745	18.84m
Panasonic	76,371	3.14m

TV OS Providers	Global market share	Devices in use**
Google	23%	n/a
Fire TV	1%	n/a
Roku	6%	n/a
Tizen	23%	n/a

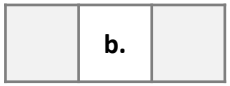
*Source: Mediatique, Netflix, Amazon, Disney, Strategy Analytics. *Figure refers to total number of global Amazon Prime subscriptions, rather than number of active users of Amazon Prime Video. ** As previously stated, it is difficult to quantify actual users of a smart TV OS because of usage of overlapping TV platforms (e.g., pay TV).*

The balance of power between TV service providers and partners (platforms, TV manufacturers, OS, etc.) varies depending on their relative bargaining positions and helps inform payment quanta and direction

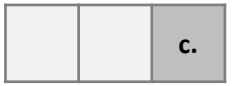
Mediatique

We have drawn the below schematic to give an indication of power dynamics in the connected TV supply chain; a key for each tiled category can be found below:

Denotes the current power balance between content providers ('**1**') and platform / hardware / OS / infrastructure suppliers ('**2**')
Sharing power is indicated by '**1 & 2**'



Denotes value traded:
Simple cash transaction: '**3**'
Share of revenue: '**4**'
Cash or other value for prominence; search returns; recommendations: '**5**'



Denotes future direction of power's travel between two parties; '←' is towards content, '↑' the reverse

1 / 2	Pay TV platforms *e.g. some or all of Sky, Virgin, BT*			CE Manufacturers *e.g. some or all of Sony, Samsung, LG*			OS Providers *e.g. some or all of Roku, Amazon Fire, Google*			CDI Providers *e.g. some or all of BT, Akamai, Arqiva*		
Netflix	1 & 2	4, 5	←	1	3 (button)	←	1	4, 5	←	1 & 2	n/a†	←
HBO	1	3	←	2	4, 5	↑	2	4, 5	↑	2	3	↑
Amazon Prime Video	1	4	←	1	4, 5	←	1	4, 5	←	1	n/a†	←
YouTube	1 & 2	5	←	1	n/a†	←	1	n/a†	←	1	n/a†	←
Apple TV+	2	n/a†	←	2	4, 5	↑	2	4, 5	↑	1 & 2	n/a†	←
PSBs - BBC	1	5*	←	2	5	↑	2	5	↑	1	3	↑
PSBs (commercial)	1 & 2	5*	←	2	5	↑	2	5	↑	2	3	↑
Other channels (tier 2)	2	3	↑	2	5	↑	2	5	↑	2	3	↑

We note some of the key outcomes of these dynamics below:

- TV service providers with global footprint, significant subscriber bases and 'must have' content (e.g. Netflix) get privileged access to platforms and other partners (prominence in particular) and either retain revenues or in some cases share them; those with their own hardware/OS (e.g., Google, Apple, Amazon) can ensure access and prominence accordingly
- Manufacturers and/or OS providers can trade control over UI/UX, prominence, search functionality and recommendations to extract only limited value from 'must have' global leaders (e.g., Netflix is no longer required to pay for its presence on smart TV OSs), but exercise far greater bargaining power with other TV service providers
- In comparison, domestically focused providers either used regulatory advantage (e.g., TPS) or the threat of withholding to secure access via partners – but there is little else to trade except cash or revenue share: Freeview Play licence fees have been paid to DUK to date in return for prominence but these are for one year only (renewable) and may not persist (e.g., LG dealing with PSBs bilaterally). BBC has resisted paying for prominence but resolve is being tested: Sony is requesting payment to guarantee prominence on its home page

**The power balance between PSBs (BBC and Commercial) and Pay TV platforms is necessarily affected by regulation ensuring PSBs favourable positioning on platform EPGs and access under regulated Technical Platform Services (TPS); n.b. that regulation does not stipulate PSB BVOD tiles (e.g. BBC iPlayer and ITV Hub) are entitled to the same favourability as their broadcast channels enjoy, but does inform payment terms which now include discounts in platform fees in exchange for providing BVOD services.*
†Where 'n/a' is given as a score, this indicates non-payment between the two parties and/or no availability; examples of this are no carriage of Apple TV+ by pay TV platforms, players with no requirements for CDIs (e.g. Amazon & AWS) and YouTube appearing on Smart TVs as a hygiene factor

Operating across multiple market segments can yield synergies, particularly for those seeking to exploit content ownership

Mediatique

Synergies across the connected TV marketplace, by market segment

Market segment	Existence of synergies with other market segments
Aggregation	▪ Aggregators must navigate multiple links in the chain before reaching the consumer – vertical integration is thus an effective way to reduce reliance on third parties (in distribution and content organisation/presentation), and can give aggregators control over how and where their content is presented, selected and delivered ▪ Ownership of compelling content brands can mitigate any requirement for integration, as consumers will always navigate to services they want (e.g., Netflix, BBC) – although increasingly, these brands need to engage with network providers and platforms to ensure reliable delivery, prominence and findability ▪ Integration yields limited benefits upstream in terms of commissioning and content acquisition; however, this segment delivers high margins, allowing participants in aggregation to subsidise activities in other lower margin segments (hence periodic new entry, despite the clear barriers)
Delivery infrastructure or networks	▪ Infrastructure provision can be provided on a standalone basis, although the demand profile is increasingly commoditised – both in B2C (broadband subscriptions) and B2B (CDN capacity) which are both very price-sensitive ▪ Delivery operations are best monetised when integrated with other network services (e.g., telephony) or alongside content ownership ▪ As has historically been true, the combination of aggregation and delivery is powerful, allowing content owners to optimise the quality of content delivery and mitigate the reliance on third-parties who may seek to manage/throttle use of their network; hence, pay-TV operators have sought control over the last mile, and content owners (e.g., BBC, Netflix) have invested in CDNs to secure greater control over congested networks (as far as possible) ▪ Over time, net neutrality provisions and vastly improved networks may reduce the ability of network operators to favour their own content or those of preferred parties – this may reduce the appetite of content aggregators to own the network
Devices and screens	▪ Device manufacturers have increasingly sought ways to generate ongoing income to offset competitive pressures in the sale of hardware – this has driven some integration along the value chain ▪ Integration can yield benefits when combined with OS control and a content offer – particularly at the mobile end (e.g., Apple) or with certain smart devices (e.g., Amazon-Alexa); this is less true for TV screens, where control is often ceded to a STB (e.g., Sky/Virgin) or where certain manufacturers lack scale and have agreed to incorporate third-party OS ▪ As such, legacy TV operators (e.g., Sky, Virgin, BT) are still committed to controlling the STB in the home, allowing ownership of the entire customer experience in the home and to be the primary source of engagement with the end user
Operating systems and user interface	▪ Activities in this segment give operators control over how content is presented, organised and selected – and can therefore yield significant synergies for content owners; this may become increasingly valuable as non-linear environments become more crowded and discussions over prominence become more commercial ▪ When operated at scale, a proprietary OS within a set of branded devices can be powerful (e.g., iOS within all Apple products) – this can enable a common interface and syncing of content/services across multiple devices – often voice controlled – with sophisticated data capture and personalisation ▪ However, different approaches exist, and many device manufacturers increasingly rely on third-party OS (e.g., Sony-Google), which these third-parties offer for free in exchange for ability to generate returns elsewhere in the value chain (data, advertising, revenue shares, cloud services)

Some segments in the value chain can operate effectively on a standalone basis, and some integration combinations can yield higher benefits than others

Mediatique

- For many players, integration has given them scale and influence across the value chain – yielding economies of scale, stronger customer relationships and brand traction
- However, ultimately, the primary driver of integration is the ability to secure greater control over how content is presented, selected and delivered
- Downstream operators (device manufacturers, technology companies) have increasingly sought to integrate upstream to tap higher margin segments and to deepen underlying customer relationships
- Upstream operators (producers and aggregators) have tentatively invested downstream, largely in delivery networks, to gain some control over the quality and reliability of distribution
- The current trends seem to indicate that the combination of aggregation and delivery networks (which drove major mergers in recent decades) is still important but may be of declining salience with the improvements in OTT delivery (and the protections of net neutrality); the synergies between OS and aggregation could be more enduring (evidenced by interoperability of smart devices, e.g., Apple TV & Samsung)

Scale of synergies, by market segment combination

	Aggregation	Delivery networks	Devices	Operating system
Aggregation		✓✓✓	✓	✓✓
Delivery networks	✓✓✓			
Devices	✓			✓✓
Operating system	✓✓		✓✓	

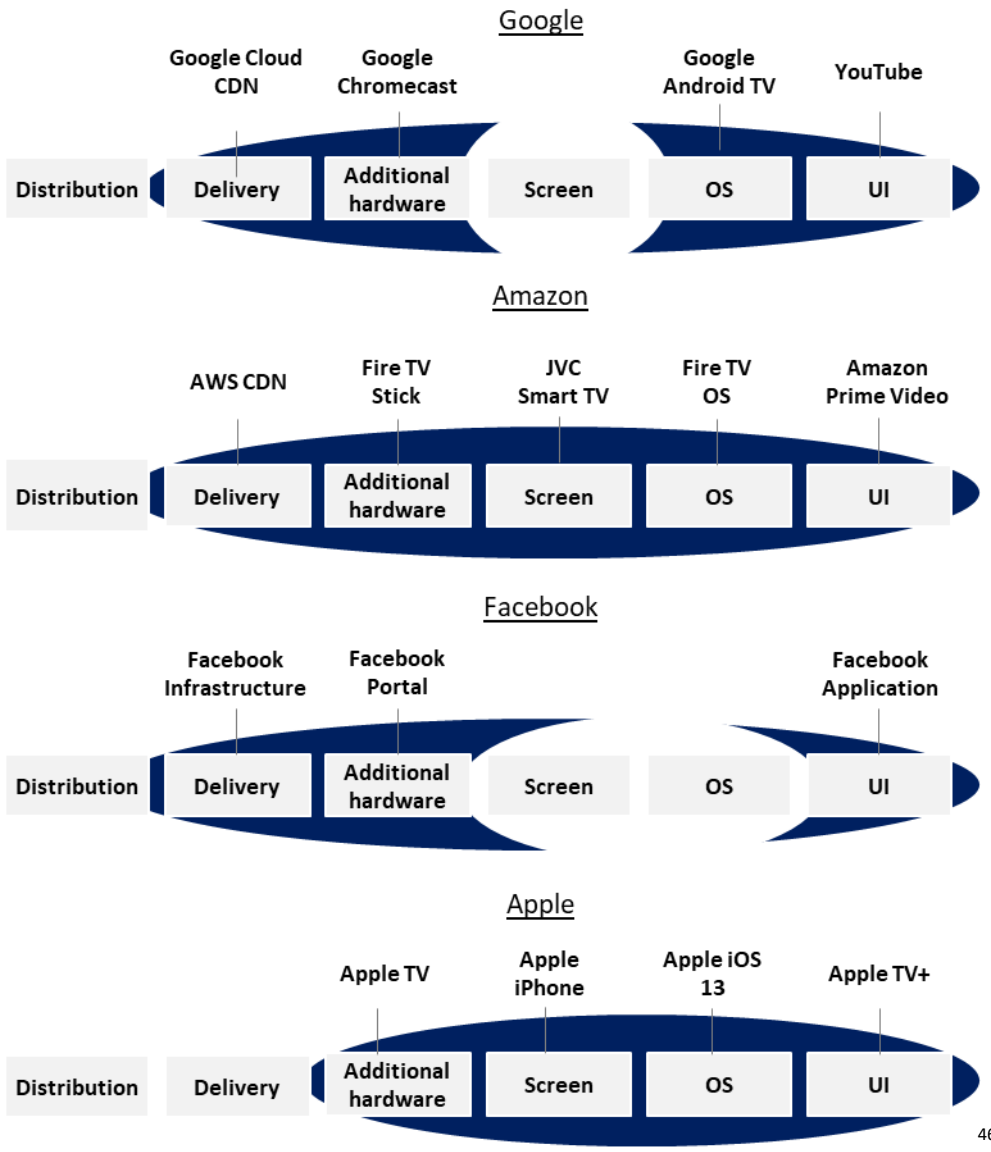
Informed by our analysis, the most effective synergies are yielded through the combination of content aggregation and delivery network (although these advantages are likely to diminish over time, assuming net neutrality remains in place and OTT networks continue to improve)

A more enduring source of synergy is between aggregation and operating system: an OS is the ecosystem most efficient at engaging with users, and as the OS consolidates around 3 – 4 players, ensuring content services are prominently positioned and integrated into search and recommendation functionality will be valued

By way of example, synergies are a major determinant of activity in the OS segment of the market – including the examples of the major global players (Google, Amazon, Facebook, Apple)

- The big global operators have been the main drivers of integration in the connected TV marketplace
- Some have sought end-to-end vertical integration (e.g., Amazon) to secure full control over content delivery – and to drive synergies across different parts of their operation (i.e., device sales, control of user interface, integration of video services and online marketplace)
- Others have sought to integrate in areas that are most valuable alongside their core operations
  - Apple's investments in content can provide on-going value when combined with device sales
  - Facebook and Google have sought to deepen customer engagement (by controlling the delivery of own and third-party content), allowing them greater oversight of customer journeys and the gathering of customer information
- For all these players, control over viewer engagement in the home can yield rich data and insight that can be valuable in adjacent markets – e.g., advertising, e-commerce, purchase recommendations, targeted subscriptions

Illustration of synergies across the value chain at various companies



In line with evolving market trends, companies have pursued a range of mergers, acquisitions and partnerships to gain access to profitable new businesses and/or to mitigate losses in traditional segments

Mediatique

- The value chain is evolving, and margins are likely to be contested variably across the relevant segment; for example, we have already identified a shift from broadcast to IP that disfavours high-margin broadcast and pay TV businesses (by lowering barriers to entry and providing new entrants with competitive leverage)
- Legacy players responded by consolidating to gain greater critical mass and to integrate both horizontally (Disney-Fox) and vertically (AT&T-Time Warner, Comcast-NBC-Sky)
- Other competitor activity in response has been to acquire (or enter into partnerships) to gain required skill sets (e.g., in BVOD, SVOD) and to link traditional and new advertising models (via, e.g., ad tech for trading, data management)
- Some new entrants are willing to forego margin altogether if able to lock in other advantages (e.g., maintain/grow presence in e-commerce (Amazon) or achieve momentum in subscription growth irrespective profitability (Netflix)
- These examples of M&A activity, and the corporate strategies of major players, help define how bargaining power has emerged across the relevant value chain and how each measures 'success'

Selected M&A along the chain (2011 – 2019)

Asset Targeted	Acquirer	Value of deal	Year of purchase	Description of deal
NBC Universal	Comcast	$30bn	2011	Combined leading cable and IP delivery systems (Comcast) with TV channelling (NBC Universal)
Amobee	Singtel	$321m	2012	Telecoms provider acquired advertising solutions provider to increase share of digital revenues
DirecTV	AT&T	$67.1bn	2014	Combined a satellite TV service (DirecTV) with mobile and wireless infrastructure network (AT&T)
Time Warner	AT&T	$108.7bn	2016	Combined a leading telco (AT&T), pay TV platform and major content provider (Time Warner) – made way for a new division: WarnerMedia
Level 3	CenturyLink	$34bn	2017	Combined communications solutions infrastructures (Level 3) to reduce capital expenditure (CenturyLink)
Sky	Comcast	£12bn	2018	Acquired control of Sky's pay TV platforms and key channel brands (inc. the UK's)
Dataxu	Roku	$150m	2019	Acquired an analytics platform; a DSP; device graph technology; to integrate into the acquirer's ad tech proposition
21st Century Fox	Disney	$71.3bn	2019	Acquisition of television networks (Fox, FX, Nat Geo Partners); Fox's 30% ownership of Hulu; the Pixar, Marvel and Star Wars brands, among others

Source: Mediatique, industry reports.

The ability to secure scale advantages, access to content and control of OS are key determinants of the strategies of major players across the value chain and inform how each derives value

Mediatique

Strategy	Example/case study	Description*	Key metrics
Pure play	Netflix	▪ Remain OTT only (i.e., not broadcast) ▪ Focus on subscriber growth ▪ Partner with key pay TV operators to drive subscriber growth where possible ▪ Invest in exclusive content to make ecosystem enticing	▪ Subscriber numbers
Platform/services	Sky, Virgin, BT	▪ Similar to above – focus on subscriber growth but as a platform (including offering multiple products – mobile, broadband) ▪ Willing to offer lower ARPU options in order to retain any customers looking to spin down ▪ Partnering with SVODs to provide on their platforms to protect against further market entry (re-intermediation) ▪ Investing in original content (Sky); potentially partnering with digital giants (BT, Virgin)	▪ Subscriber numbers ▪ ARPU
Monetising OS (advertising)	Roku	▪ Grow share of OS (through partner OEMs) to collect advertising revenue ▪ 'Test case' of Freeview Play-enabled Hisense to grow in UK market ▪ Then approach lower-cost smart TV manufacturers to capture homes that will switch to smart TVs in the future ▪ May be an acquisition target as it is struggling to match its US performance overseas	▪ Advertising revenues (share of OEM) ▪ Subscriber numbers (OS purchases)
Monetising OS (partnerships)	Google	▪ Grow share of OS in order to collect data through Google Store available in each smart TV ▪ Bulk up advertising opportunities (e.g., through heavily promoted YouTube) ▪ Data can be used to drive outcomes in adjacent segment (connected home devices)	▪ Transactions on OS store (Google Play) ▪ AVOD revenues
Adjacent e-commerce/ ecosystem	Amazon	▪ Secure critical mass smart home ecosystem to inform all purchasing decisions (recommendations; recurring orders)	▪ Subscriber numbers (e-commerce)
Adjacent hardware sales	Apple	▪ Use hardware as an incentive to build relationships with consumer and content ▪ Through shipment sales, make ecosystem the single source for all out of home service subscriptions (music, news, gaming, video content), thus diversifying revenue streams	▪ Unit shipments ▪ Revenue share with partners

** These strategic snapshots are informed by company reports, analyst reports, stakeholder interviews and Mediatique analysis; they reflect our judgement rather than that of the companies specified or of Ofcom.*

Unpacking the value chain in terms of business models (and cash/in-kind trading) is a critical exercise to understand how market participants are faring

Mediatique

- The complexities across the value chain, and the ability of market participants to earn revenues at multiple points, obscure key dynamics (particularly when value is 'traded' by means other than cash)
- It is worth summarising the central mechanisms used by participants to generate returns (whether directly or indirectly); these include those listed at right
- Content is the key driver of the ability to charge the consumer (for access to specified content) or the content provider (for, e.g., access, prominence); the content element also underpins trading in data and the validation of digital advertising, as well as driving income in adjacent markets
- Thus content (from a third party or in some cases owned by the OS provider) is a key enabler for all of the other sources of value listed here
- An intriguing insight into how Amazon 'values' content in the context of driving Prime shopping revenues is revealed by Amazon itself: https://variety.com/2018/digital/news/amazon-documents-internal-spending-originals-man-in-high-castle-1202727642/)

Revenue mechanisms found across the connected TV value chain

Revenue mechanism	Description	Mechanism in practice
Subscription	Direct or revenue share; the major growth area in 'TV'	Typically, the CE manufacturer/OS provider seeks to earn a tithe (20-30%) on subscriptions generated/delivered
Advertising	Increasingly non-linear, programmatic and linear-inserted; these modes will dominate	Google Android and Amazon both seek to monetise the audiences aggregated through their gateways (directly or through sharing revenues with a sponsoring CE or content supplier (e.g., ITV Hub)
Access/ prominence	Murky and confidential area, but anecdotally of growing importance	Payments have been made historically (although no longer) by Netflix to be prominently positioned; Disney has traded aggressively to be prominent (within the first two or three 'tiles' on home screens)
Search/ navigation	Where 'value' is often accorded by bundling within a larger supply or service relationship	This area includes 'top picks', search algorithms, paid-for search optimisation – and is increasingly affected by the growth in the use of voice control (over time favouring even more 'personalisation' by individual user
Data fusing	The blending of data from multiple sources, including from 1st Party	In particular, matching individual/household data with actual consumption/usage data to enhance targeting and personalisation
Hardware sales	With some exceptions (high-end Apple), margins are thin	A key factor in realising the strategic goal of colonising the connected home (e.g., through the Trojan Horse of mobile/home assistants)
Adjacent markets	Revenues associated with e-commerce, gaming and music	Apple, Amazon and Google (Play) all seek to generate income from connected users – not just from A/V content

Our market analysis highlights major differences in the strategic role and strength of particular market segments, and will determine who wins in the battleground between major players – content vs. gateways

Mediatique

Content remains critical but may not on its own confer transformative advantage

- Content is a key source of negotiating power across the value chain, as evidenced by rise of original content from new entrants (and legacy players – e.g., Sky), but does not necessarily drive synergies in technical elements of the value chain; this outcome is not automatic
- The role of international partnerships will become stronger (HBO-Sky; Netflix and all distributors; Disney+, the poor negotiating position of Tier 2 – basic channels – propositions)
- PSB content has been a critical 'hygiene factor' in the past, whether in supplying pay TV platforms or early variations of connected TV gateways; there are signs this is set to change, however, as new content propositions seek access (e.g., global streamers), as gateways themselves offer content propositions (Amazon, Apple) and as global negotiations trump domestic arrangements

There is a growing role for OS as UI becomes new battleground for control/access to consumer

- Further convergence of OS is likely when manufacturers renew partnerships, mainly owing to terms offered by OS providers (reduced cost of OS development; margin contribution to unit production; cost-effective UI modification as per CE requests) – the shift will be toward greater reliance on Android and iOS (Samsung will stay committed to own OS), irrespective of content position on the supplier chain
- There are already signs of this, as OS providers adapt to manufacturers' needs at no or little cost to the manufacturer

Colonisation of the home by big, integrated gateways will have a significant impact on the relationship between content providers and OS

Mediatique

Increased take up of other smart devices may inform convergence in OS market (and vice versa)

- As smart device penetration in the home rises, consumers may increasingly gravitate to a specific brand of OS, particularly where differing devices cannot otherwise easily interact
- This is particularly true of smart speakers and home assistants, which are increasingly integrated into smart TVs (or where voice-enablement of the TV allows the interaction)
- We will continue to see certain players in the market push their voice assistant brands into devices in the home – even at the risk of running a loss on the hardware sale
- Those OS providers with an original content strategy may promote their own content ahead of third parties

Concentration of power at OS level will have implications for balance of power between content providers and platforms

- Notwithstanding pay TV strategies (see overleaf), the increased concentration of power at the OS level will have a series of concomitant impacts – for instance on who controls data, how interactive advertising is handled and the power ascribed to each provider across the value chain and how this power results in outcomes of traded value; the impacts will be:
  - Growing advertising revenues (a result of increasing value of ad units; ad tech realising power of targeted advertising; revenue share of BVOD/third-party app advertising) will accrue to OS providers (Roku, Google)
  - Google YouTube will continue to dominate AVOD market via connected TVs
  - Increasing ability of Amazon, Apple, Google to take share of subscription revenue

The tensions between 'traditional' and 'new' aggregators (e.g., Sky, Virgin, BT versus Google, Apple, Amazon) is emerging as a key further dynamic, and this will have an impact on balance of power across the value chain

Mediatique

Traditional pay TV platforms will continue to play a role, with a focus on bundling and 're-aggregation'

- Legacy players (including pay TV platforms and potentially Samsung in the connected TV space) will seek to maintain control over the home, including where relevant ownership of the set-top box and last-mile delivery and a single bill offering
- Sky in particular will continue to exert power and control across the connected gateway value chain by leveraging legacy customer relationships, doubling down on exclusive content (including its own), and having increased access to capital given size and new owners
- This will be supported by bundling, 'best of breed' aggregation, 'copying' new entrant UI/UX, and functionality – encouraging consumers to connect to Sky, for example, and by-pass underlying TV connectivity offered by manufacturer and associated OS (e.g., Sky's 'super aggregator' approach to advertising (Sky AdSmart) and OTT (revenue share/common billing with, *inter alia*, Netflix, Disney) – very important in the context of potential SVOD 'fatigue'
- C.f. the success to date of Sky Q, counter evidence that Virgin (without the same advantages in content, critical mass) is challenged

A holistic review of the key dynamics in each segment suggests that the market overall is becoming more consolidated and the pace of change is being dictated increasingly by global new entrants

Mediatique

Snapshot review of dynamics & consolidation in the value chain

Entry point	Key players	Market concentration and key dynamics
Content and production	▪ Netflix ▪ Amazon ▪ Disney ▪ HBO ▪ Sky ▪ PSBs	Segment revenues will remain high for a limited cohort of global players; bargaining power will be retained by this same group (e.g., Netflix; Amazon Prime; Disney); it will remain hugely expensive to enter, thus favouring players with scale able to commission and compete with production budgets
Aggregation and distribution	▪ Broadcasters ▪ SVOD players	High margins and revenues driven by legacy player entry will result in a dense market; only 'Tier 1' brands will transition easily to new aggregation formats
Content delivery infrastructure	▪ SES/Sky ▪ Virgin ▪ Arqiva ▪ BT ▪ Akamai ▪ AWS	Revenue and margin for this segment will be affected by inevitable disintermediation of broadcast (DTT, satellite) in favour of IP (fixed and mobile); new-age delivery infrastructures are dominated by three main players (Amazon, Microsoft and Google)
Additional hardware	▪ Google ▪ Amazon ▪ Roku	Sunset technology (low margins and market shrinkage due to smart TV take up); demand will remain for home-memory STBs for a time
Screens	▪ Samsung ▪ Sony ▪ LG ▪ Panasonic	An important but commoditised segment: high revenues accompanied by low margins; dominated by a cohort of key players; significantly affected by players' involvement in other segments (e.g., in OS)
OS and UI	▪ Tizen ▪ iOS ▪ Google Android	Subject to consolidation to 4-5 brands, led by Google, Amazon; Roku may be bought rather than being one of these; revenues available with scale in native/ad-associated technology

- The current picture suggests consolidation is evident throughout the value chain
- A key driver has been the entry by Google, Apple and Amazon into the connected TV gateway value chain – where market presence is multiple and significant
- A critical effect has been to ensure that margins remain relatively low in those segments where barriers to entry are not otherwise an impediment (e.g., OS, UI/UX)
- A key observation is that TV manufacturers are offered attractive terms to designate third parties (Google, Amazon, Roku) as their OS supplier to permit them to cut costs and protect razor-thin margins
- This has provided new entrants with a key position on the value chain (enhancing their ability to generate returns elsewhere – particularly in advertising and e-commerce)
- Content providers (such as the PSBs) have to compete with a number of other providers (Netflix, Disney) with deep pockets and the ability to strike global deals with CE manufacturers and (increasingly) their consolidated OS partners
- Moreover, these same OS players often have their own content and services to promote, helping to raise costs of access and prominence to third parties

Key findings from this section: 1) Content continues to play a role in engaging users of connected TV gateways, and permitting value-chain participants to generate revenues

Mediatique

- The availability of content (usually long-form professional programmes but with an important ancillary role played by short form and/or use-generated content, e.g., via YouTube) is a critical factor in how connected gateways are used (and valued) by consumers
- The role played by content underlines the strategies of new entrants in particular, with Apple, Amazon and Google all keen to promote both their own and aggregated content as part of their offerings (and often favouring this over and above content from third parties)
- Apple and Amazon are also keen, however, to generate revenues from third party content providers, in two main ways:
  - Sharing in the opportunities to generate digital advertising (typically with manufacturers where they provide an OS solution but also with content providers able to generate income as a consequence of their access to OS-enabled households and to the data capture/deployed as a result); and
  - Sharing revenues generated through subscriptions and digital purchases (i.e., via Electronic Sell-through), as Roku, Google (Play), Apple and Amazon (Fire and Channels) do
- Given this, and in order to ensure consumer preferences are catered for, content provided by third parties is critical to the success of connected TV gateways, just as being available on platforms and via operating systems is important to content suppliers
- This suggests that in negotiations between providers and CE manufacturers and/or OS providers), both sides have value to gain, and stand to lose value in the absence of key content
- The critical question to ask is where the bargaining power resides – in favour of the 'platform' or the content supplier?
- We observe that the dynamics of the value chain, and in particular the growing importance of new entrants (Google, Amazon and Apple) in several segments) increasingly advantage global over domestic content providers – whether favouring their own content or agreeing to promote the services of big, global providers able to 'buy' prominence
- Domestic providers lack financial resources and a global footprint; there are increasing signs that their bargaining position(s) will be eroded (see overleaf)

Key findings from this section: 2) The PSBs will be increasingly disadvantaged by trends across the connected gateway value chain, outgunned financially and with declining ability to leverage access, prominence

Mediatique

- The key changes in the value chain to date informing a shift in bargaining power are:
  - Improvements in network speeds and increased penetration of smart devices (often inter-operable using a single OS) – benefiting from ability to access households without controlling physical distribution ('last mile')
  - A clear migration by CE manufacturers away from bespoke OS and toward adoption of standard approaches (up to and including an effective 'ceding' of the OS to a third party (e.g., Roku)
  - Investments by new entrants in key segments of the value chain (content, cloud services, hardware, OS), giving them access to synergies and cross-subsidising segmental entry, thereby creating/reinforcing barriers to entry
  - Securing the advantages of international scale and scope and negotiating with content providers globally
- The impact on the UK domestic content market has been considerable, as we summarise at right
- Initially, IP-enabled connected device propositions in the UK needed the domestic providers (principally the PSB players) to ensure consumer traction
- All early connected gateways featured content from the BBC, ITV, Channel 4 and Channel 5; more recently, most (but not all) TV set manufacturers accepted the need to adopt (and pay for) the standard Freeview Play rules for integrating non-linear services alongside broadcast
- Evidence that the PSBs are now facing headwinds in securing prominence and access on several devices/platforms is multiplying:
  - LG has elected not to renew FVP standards, and is seeking a bilateral deal to carry the iPlayer – assuming that other PSBs will necessarily fall in line thereafter
  - Channel 5 has lost 'front page' presence on some platforms, and this is likely to recur as new propositions launch into the on-demand space (notwithstanding 5's US studio ownership via ViacomCBS)
  - CE manufacturers/OS providers said to us (in stakeholder interviews) that prominence is a revenue source and the price is increasingly set by the global market

Key findings from this section: 3) There is significant variation in the ways PSB players are accommodated on connected TVs, indicating differential bargaining strength and appeal

Mediatique

Relative power dynamics between PSB VOD services

PSB VOD Service	Description
BBC iPlayer	▪ Viewed by key connected TV gateways as an important 'hygiene factor' for a comprehensive smart TV proposition ▪ Normally within the first few 'tiles' on a home screen, usually sharing this privilege with Netflix, Amazon, YouTube (on Google Android devices) and – increasingly – Disney+ ▪ CE/OS players report that BBC Syndication policy favours supply of iPlayer
ITV Hub	▪ Nearly always prominently displayed on connected gateways ▪ Both sides of the bargain report friction on prominence and access going forward, particularly on terms of revenue share (e.g., of BVOD) ▪ CE/OS players maintain other propositions (globally) willing to pay/share more than ITV for prominence
All4	▪ Consistently less prominent on home screens, often after, e.g., Google Play and even Facebook Watch on Samsung late generation sets ▪ Harder for C4 to argue 'must have' status as does not have significant long-tail programme rights as these are often traded directly by IP rights holder with other distributors
My5	▪ First of the PSB providers to lose front page prominence as a result of subsequent (global) SVOD launches ▪ May secure advantage from parentage (ViacomCBS) over time, depending on evolution of Pluto TV (and other services) integrated into My5

Mediatique

Executive Summary

Introduction and note on methodology

Taxonomy of the value chain

Business models

Market dynamics and characteristics

Future scenarios (2020-2025)

Conclusions

Glossary and definitions

Appendix

Based on our analysis, and identification of key dynamics and characteristics, we suggest there are four drivers of future change in the connected TV gateway market, led by shifts in consumer behaviour

Mediatique

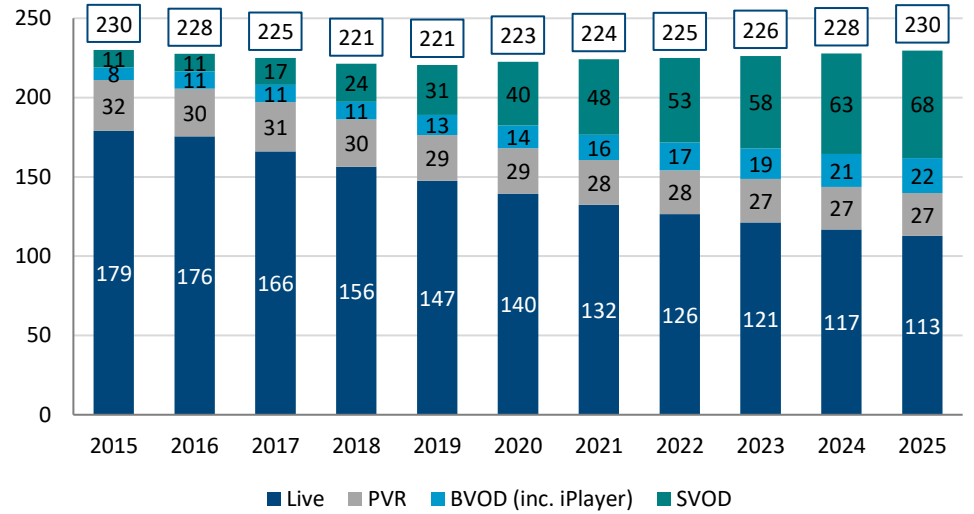
Drivers of scenario outcomes

Consumer preferences	▪ Pay versus free (willingness to pay, aversion to ads) ▪ Genre/format preferences ▪ Degree to which consumers gravitate toward inter-operable devices, permitting trusted data collection to ease choice/availability of content, services ▪ SVOD stacking trends – how many is 'enough'?
Technical developments	▪ Search and navigation trends (aggregation, voice-led, algorithm) – including importance of smart speakers as 'Trojan Horse' in TVs ▪ Improvements in broadband network speeds, capacity and reliability ▪ Changes in device functionality
Business model evolution	▪ Across key categories – share of wallet/share of attention ▪ Who owns the data? Who owns the customer relationship? Who gets attribution? ▪ How do providers charge – subscription, per use, advertising? ▪ How will bundling evolve/develop?
Competitor activity	▪ Relationship between platforms and new aggregators (unbundling vs. re-bundling) – potential partnerships between, e.g., BT and Apple? ▪ Continued migration across value chain – increased investment in content, CDI ▪ Potential for M&A activity (e.g., studio consolidation, SVOD streamer consolidation, new entry into OS via acquisition of a sub-scale incumbent – e.g., Roku; potentially by Netflix?)

Consumer behaviour: our base case assumes that in 2025 live viewing still accounts for the majority of long-form viewing, despite increased take up on SVOD services

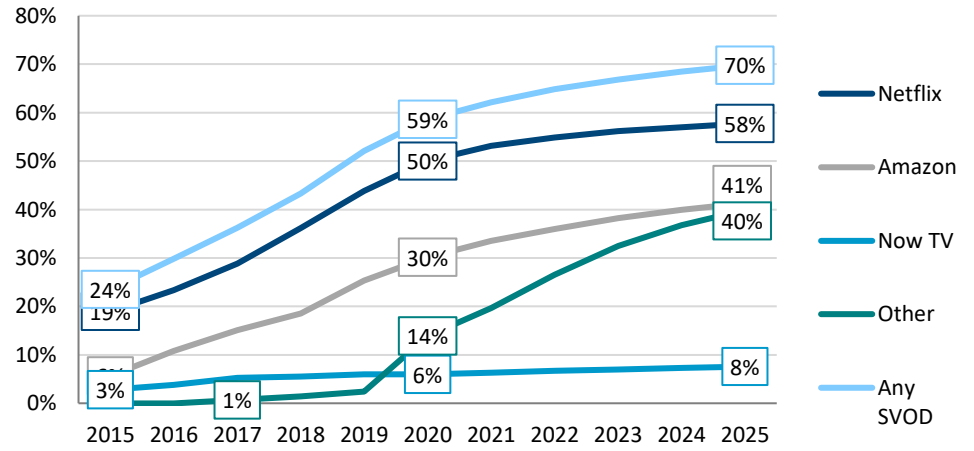
- Linear TV remains relatively strong, at 63% of total long-form viewing – it still accounts for just 2 and a half hours of daily viewing for Individuals 4+; the decline in linear viewing is gradual – it does not fall over a 'cliff edge' before 2025
- However, legacy broadcasters will continue to adopt hybrid solutions that include BVOD and SVOD over the period; together, total BVOD and SVOD share of long-form viewing are forecast to reach 40% by 2025
- SVOD households will grow at an average rate of 4% each year to reach over 20m by 2025 (70% of all households); the number of SVODs per SVOD home increases from 1.5 to 2.2
- Over the same period, 'full fat' pay TV continues to lose market share, in favour of 'lite pay' and SVOD
- We caution that there will be a limit to the amount consumers are willing to pay for discrete SVOD services (SVOD 'fatigue'); we predict consolidation (through service closure and/or aggregation of services in a single proposition with a discounted bill
- Consumers may permit 'trusted' data collectors to ease access and functionality of services via multiple devices (submitting to single eco-systems such as Amazon, Apple)

Total long-form viewing by type, in mins (2015-2025)



Source: Mediatique.

SVOD take up in UK households (2015-2025)

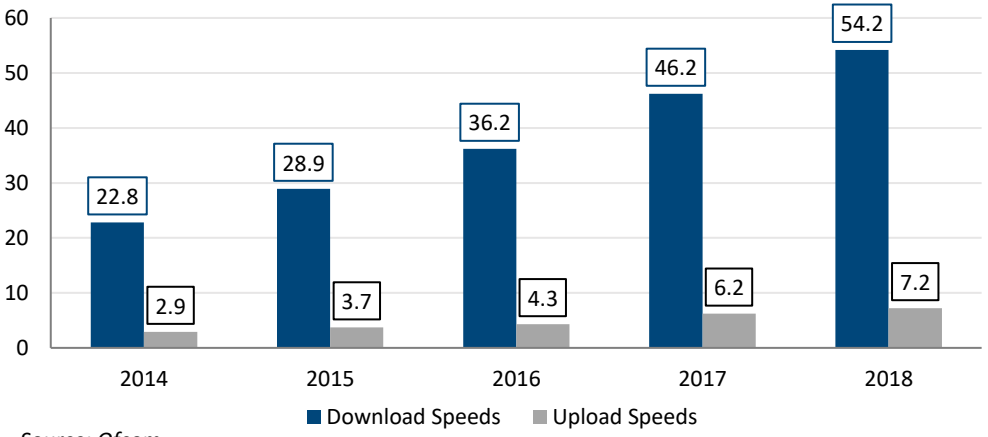


Source: Mediatique.

While the value chain is likely to see significant technological change, key areas in the short to medium term of likely impact will be network speed and innovations in UI/UX, data manipulation and cloud tech

- Twin sources of market change have been the drivers of network speed (superfast, fibre and 4G/5G) and device take-up (most recently smart speakers); network capacity has been a leading indicator of changes to consumer behaviour, as the critical enabler of IP-delivered A/V
- Two further areas of technological innovation are likely to drive outcomes – upstream (cloud tech) and downstream (around the consumer facing UI/UX)
- Upstream, we have identified further innovation in data storage, virtual CDN networks, data management and digital rights management – all areas where large corporate players (Amazon, Google, Microsoft) are active, and can leverage market positions across the value chain
- Downstream, we expect changes in search, navigation, recommendation and personalisation, enabled by more sophisticated data gathering / sharing and lubricated by payments or value trading among value-chain participants
- Key here are two dynamics: the 'screenisation' of smart speakers/home assistants; and increasingly easy connectivity between smart devices and the Big Screen (optimised through a common OS, often controlled via voice and personalised)*

Average home broadband download and upload speeds (2014 – 2018)



Source: Ofcom.

Smart speaker/home assistant audit: integration of display screens

Platform	Name of model	Available hardware – screen integration
Facebook	Facebook Portal (*Alexa integrated*)	*Portal TV* – smart video calling via a TV set; automatic pan and zoom to include all movement and conversation participants *Portal Mini* – tablet device enabling video calls via WhatsApp and Facebook Messenger
Google	Google Nest	*Google Nest Hub* – digital photo display; hands free guidance from Google Assistant; music and video streaming (YouTube)
Amazon	Amazon Echo	*Amazon Echo Show 8* – TV, film and news streaming; smart home voice control; digital photo display; privacy

* *This 'colonisation' favours the providers of standardised OS – Amazon, Google – which already collect and monetise consumer data and which have their own and affiliated content services to promote and to trade against access, prominence and a share of revenues.*

Trends across the value chain, and in particular the decline of pay TV, provides scope for changes to business models ('lite' pay, SVOD and programmatic are likely to cannibalise 'full-fat' pay TV and traditional NAR)

- The pressures on pay TV and broadcast television have already led to declines in pay TV ARPU and traditional broadcast TV advertising
- We would expect significant further growth in SVOD, through a combination of market new entry (Disney, Britbox) and a rise in SVOD stacking (from the current low level in the UK of 1.5x per household to 1.8x by 2025)
- Assuming a cap on consumer willingness to pay, we expect aggregation of SVOD through two mechanisms: the inclusion by legacy pay-TV operators of SVOD services within their own pay-TV offerings (e.g., Netflix/Disney+ within Sky Q); and the aggressive promotion of aggregated propositions by new entrants (typified by Amazon Channels and the Apple TV+ services)
- The integration of services may be influenced by the appeal of certain OS propositions (with consumer traction?) – e.g., Sky, Apple, Google, Amazon, perhaps Samsung – particularly as these players will be able to offer valuable prominence, inclusion in platform recommendations and paid-for search, personalisation across multiple devices, potential of simple, single consumer billing and access to valuable data, trading for cash or revenue share

Presence of key players in market segments in the UK

Broadcaster group	Pay TV subscriptions available for central purchase
Comcast	Showtime; Netflix; Pandora; Amazon Prime Video*
Sky	Netflix; BT Sport
Amazon Channels *(selected players)*	BFI Player+; BeFit UK; Discovery; Eurosport Player; Full Moon Features; Gaia; ITV Hub+; hayu; MGM; Motorvision; MUBI; Nautical Channel; Panna; Pongalo Next; Studio Universal Classics; Sweatflix; Tastemade Plus;; Viewster Anime; Yoga Anytime Channel
Apple TV Channels	Apple TV+; Starz Play; BFI Player; Smithsonian Channel Plus; Moonbug Kids; Arrow TV; Arrow Video Channel; Mubi; Tastemade; Noggin

The growing role of AVOD in relation to video on demand services

Alongside these developments may be further innovations in AVOD propositions – e.g., iterations of Hulu, Peacock, Pluto TV – to provide a route to market for content that does not have premium attributes but that is nonetheless of appeal to some consumers

Ad-funded propositions, prominently displayed, may proliferate, particularly if connected TV gatekeepers leverage data capture to enhance the value to advertisers

Depending on how the impacts of these drivers materialise over coming years, the outcome will determine how 'value' across the connected TV chain is traded (where bargaining power lies and how benefits are shared)

Mediatique

Key observations on dynamics and characteristics

- The emerging value chain, and its likely evolution over the medium term, is likely to be determined by the resultant impact on negotiating power and how value-chain benefits are shared by participants; one distillation of this is to ask where power resides currently, and how might this change
- We expect content to remain a critical advantage, that providers will be able to leverage; however, content owners with stakes in distribution and consumer engagement have a compounding advantage that 'pure play' content service providers do not share
- Moreover, a position of market power in consumer engagement (e.g., in the OS, UI/UX, data capture and manipulation) may be a key determinant of success in connected TVs even without exposure to content
- It appears to us likely that there will be a central dynamic of conflict between 'new' and 'old' aggregators, with Google, Amazon and Apple in particular able to wrest market value away from legacy providers (with some exceptions)
- Residual bargaining power may accrue to pay-TV operators able to innovate by incorporating SVOD (and other) services in a bundled proposition, convincing consumers not to 'toggle' to their underlying connected devices
- The ability of 'new' aggregators to flourish will depend on the willingness of consumers to use their smart TVs (this in turn may well be affected by decisions elsewhere in the household – the take-up of smart devices sharing an OS with the Big Screen, and easy integration of small and large screens to colonise A/V activity throughout the home, enabling significant inter-operability and personalisation)
- In addition to these consumer-facing dynamics, there will be other instances of market advantage that may prove critical in assigning bargaining power to value-chain participants:
  - The ability ('permission') to collect and deploy valuable data
  - The control over prominence and findability of content
  - Linked service bundles (e.g., for CDI distribution, cloud asset management)
- The bargaining across these segments may well occur at a global level, between global participants (e.g., Netflix and Sony) where domestic players lack critical mass and credibility
- The relationships may also be informed by the degree of horizontal integration – for example, the ability of Amazon to promote its own content or at least to establish a price at which it is willing to see its own content displaced by a new entrant with even deeper pockets
- A clear strategy for market entry and tapping of synergies will be via partnerships and M&A (e.g., potential tie-ups between pay TV networks and OS providers; acquisitions – e.g., Netflix of Roku)

Based on our analysis and trends to date, we ascribe the following scores as to the likelihood and extent (impact) of each on the two axes: consolidation versus fragmentation; legacy versus new entry provision

Mediatique

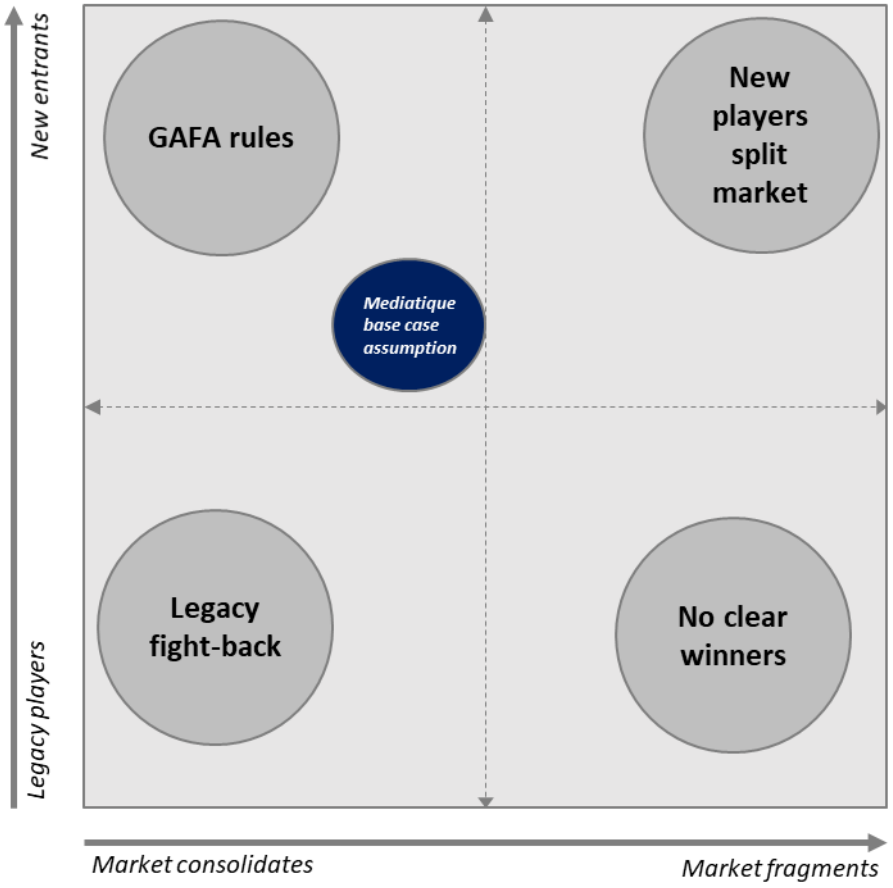
Drivers of scenario outcomes		Likelihood	Extent
Consumer preferences	▪ Pay versus free (willingness to pay, aversion to ads) ▪ Genre/format preferences ▪ Degree to which consumers gravitate toward inter-operable devices ▪ SVOD stacking trends – how many is 'enough'? ***Impact: favouring new entrants and fragmentation***		
Technical developments	▪ Search and navigation trends (aggregation, voice-led, algorithm) – including importance of smart speakers as 'Trojan Horse' in TVs ▪ Improvements in broadband network speeds, capacity and reliability ▪ Changes in device functionality ***Impact: favouring new entrants and fragmentation***		
Business model evolution	▪ Across key categories – share of wallet/share of attention ▪ Who owns the data? The consumer relationship? Attribution? ▪ How do providers charge – subscription, per use, advertising? ▪ How will service bundling evolve/develop? ***Impact: favouring new entrants but rewarding some legacy operators***		
Competitor activity	▪ Relationship between platforms and new aggregators (unbundling vs. re-bundling) ▪ New entry – a review of the barriers ▪ Continued migration across value chain, in search of synergies ▪ Potential for M&A activity (e.g., studio and streamer consolidation ***Impact: favouring new entry (esp. GAFA); rewarding some legacy operators***		

Our base case suggests the leading indicators of consumer behaviour and further impacts from technology will favour new entrants (although to the exclusion of some legacy providers), with GAFA the likely beneficiaries

Mediatique

- We envisage market evolution resulting in four potential scenarios
- **Legacy fight-back:** existing players, led by pay-TV operators, maintain control and the cord cutting trend is stopped and even reversed (with 're-bundling' of SVOD and other services led by the legacy operators, of which only a few succeed). The most unlikely outcome
- **No clear winners:** this scenario sees legacy providers remain in place, with a mix of players (Sky, Virgin, BT, etc.) with no particular traction for new entrants (e.g., Google, Amazon, Apple do not take significant share and Roku succeeds beyond the US). This may transpire assuming gains by GAFA do not persist. Possible but on balance unlikely
- **New players split the market:** the outcome is one of fragmentation; as legacy players recede, there remains a fragmented and competitive environment, with no clear dominance among the new entrants (this outcome depends on various barriers to entry remaining low, and consumers wary of conferring too much control to a single supplier
- **GAFA rules:** the TV market goes mobile, with Google, Apple, Facebook and Amazon dominating the connected TV household value chain – as to UI/UX, billing, advertising, search (Roku bought?)
- Barring regulatory intervention, we expect the outcome to be somewhere between 'GAFA rules' and 'New players split the market', reflecting the greater importance of consumer behaviours and business models as drivers and the degree to which these favour GAFA-style eco-systems

Summary of scenarios under analysis



Mediatique

Executive summary

Introduction and note on methodology

Taxonomy of the value chain

Business models

Market dynamics and characteristics

Future scenarios (2020-2025)

Conclusions

Glossary and definitions

Appendix

Based on our analysis, we expect the connected TV market to continue to favour global providers with multiple points of presence across the value chain, critical mass and global perspective

Mediatique

Structure of the value chain, and strategies of the main players

- The connected TV gateways supply chain is multi-faceted, with a combination of smart TVs, other device hardware, operating systems, pay TV platforms – in many households, this provides multiple routes by which consumers can access content, and a number of providers (in a 'hierarchy of access') with some control over what viewers see (e.g., prominence, search, navigation, personalisation, functionality such as auto start, resume)
- There is a marked trend toward consolidation of operating systems, as smaller TV manufacturers abandon independent, stand-alone OS in favour of standardised OS propositions from third parties (Roku, Google, Amazon); Samsung is the main exception to this
- Of pay TV platforms in the UK, Sky remains wedded to its own UI/UX and operating system (whether the legacy Sky+ base or Sky Q) and aims to remain a key aggregator of its own and third party content with control of billing, data, search, recommendation in subscribing households (often in homes with access both to Sky and to an underlying connected TV service)
- The involvement of key digital giants across the connected TV value chain (Google, Amazon, Apple) is varied:
  - Google offers a fully developed Android TV OS effectively for free to CE manufacturers, and in return generates (or shares in) advertising income and benefits from consumer access to Google Play
  - Amazon, through Fire TV, similarly proposes to intermediate in the OS space, seeking to generate two key values currently: locking in subscribers to its e-commerce offerings; and generating income from data-informed advertising and a share in revenues from third-party apps
  - Apple TV+ is further behind in the connected TV market, relying on smart devices and limited presence on connected Big Screens (e.g., a deal with Samsung for late-generation models)
  - All these digital giants have aspirations to control the household eco-system across devices – smartphones, smart speakers/home assistants, tablets, etc. and all three offer a degree of inter-operability across devices, advanced voice controls, functionality such as 'resume viewing', personalisation and algorithmically informed recommendation, and the ability to source, collect and monetise consumer data
  - Apple and Amazon have made significant investments in content (including launching their own SVOD services), entering into a highly competitive (and increasingly global) market segment where content providers such as Netflix, Disney+ and HBO Max are all active (and able themselves to control consumer UI/UX within their own apps)
- The emergence of a few key players in the OS segment of the value chain, coupled with their significant presence in multiple segments (variously aggregation, hardware, CDI) imposes conditions on how A/V service providers and distributors negotiate critical aspects of access, prominence, participation in search and navigation
- A critical factor will be the degree to which 1st party data is collected and deployed, particularly when combined with consumer data across other devices controlled by providers of OS (e.g., shopping preferences by Amazon; search and video consumption data amassed by Google/YouTube)

Our market observations suggest a number of immediate and longer-term impacts on how content is delivered and discovered by consumers

Mediatique

Commercial relationships and dynamics in the value chain

- Our analysis of these dynamics (supplemented by conversations with industry stakeholders and a review of representative global deals) suggests two broad and immediate impacts – the growing importance of negotiations at global level (e.g., between Netflix and Sony) and the degree to which trading on access and prominence is determined by the operation of other segments of the value chain (e.g., arrangements on CDI cloud services; revenue shares on data-enabled programmatic advertising; horizontal relationships on content aggregation and the OS (Amazon Fire favouring Amazon Prime Video)
- The OS segment is relatively small in revenue and profit terms; however the ability of digital giants to generate value and returns elsewhere along the value chain continues to incentivise their presence and willingness to provide no or negative margin supply of OS to CE manufacturers (thereby disincentivising new entry)
- Moreover, over time the control of the OS in terms of 1st party data, advertising, and potentially billing, will generate significant revenue opportunities in the future, over which consolidated OS providers, benefiting from the synergies we have identified, will have significant control
- There are mitigations to this: the continued commitment of at least Samsung to its own OS; the medium-term implications of the 'last mile' delivering bandwidth-hungry A/V content to connected households; the role of pay TV operators (including those with 'last mile' presence); and the likely evolution of consumer preferences for content, and in particular SVOD and other non-linear propositions, which may permit content providers to retain significant control intra-app (conferring control on search, navigation, recommendations, personalisation, etc.)
- On whether CE manufacturers stay the course on their own OS, our stakeholder interviews suggest a consistent transition at major operators other than Samsung toward third-party OS adoption (favouring Amazon and Google)
- On the 'last mile', the protections of net neutrality and improvements in network delivery will continue to favour OTT – this may encourage some network providers (BT, Virgin?) to concentrate on being 'best of breed' aggregators, potentially incorporating OS provision from one of the digital giants (BT's EE TV has already contracted with Apple TV+)
- Sky, backed by Comcast-NBCU, aims to maintain its control over subscribing households, using multiple services (pay TV, broadband, telephony) and incorporating SVOD services from third parties (e.g., Netflix, Disney+) as a 'super aggregator'
- Consumer preferences for SVOD (and perhaps AVOD) over time suggest there may be further launches of non-linear propositions; a means of aggregating these on a consumer-friendly, bundled basis will find traction (either from a pay TV operator, a digital giant or other OS intermediary)

We conclude that the relationship between content providers and distribution partners will evolve in favour of OS providers and perhaps only 1-2 legacy pay-TV operators; domestic content providers face challenges

Mediatique

The threat to domestic players

- For global providers of content, pure play or integrated, the relationships with CE manufacturers/OS providers/pay TV operators will be multiple and varied:
  - A key area of integration will be around access, prominence, incorporation into search functionality and/or recommendations – often reached at global level with global counter-parties
  - The value traded will often be layered and opaque, involving cash, revenue shares and with commercial returns driven elsewhere on the value chain or even adjacent to it (e.g., e-commerce)
- In determining bargaining power and leverage, these dynamics are likely to favour both critical-mass content providers (Netflix, probably Disney) and value-chain participants with global footprint and/or multiple points of presence (GAFA, 1-2 pay TV operators)
- Our analysis suggests Google and Amazon will emerge as significant players across the value chain, increasingly present in OS provision and able to sustain a connected eco-system through access to data, provision of cloud and other services and content
- Apple's strategy suggests a different emphasis – on revenue share with third party providers, and conceivably a role as OS partner for large-scale network providers (Virgin? BT?)
- Pay TV operators will need to offer 'super aggregator' propositions to compete (Sky most likely in the medium term to thrive, as we argued above)
- For domestic TV providers, the challenges are significant:
  - Until recently, the enduring appeal of domestic broadcast content in the UK, including catch-up and BVOD variants, has ensured that connected TV platforms sought access to this content as a pre-condition of offering a full consumer proposition
  - Increasingly, as can be seen with the LG decision to enter into bilateral negotiations (having failed to reach terms with Freeview Play), only the BBC iPlayer appears to offer 'must have' characteristics; if the BBC concedes ground, commercial PSB players will necessarily have to follow
  - Global arrangements are set to increasingly trump domestic bargains, as is already seen in the relegation of my5 to the second page on many devices to make way for the launch of Disney+
- There is scope for regulation to protect access, prominence (for discrete or aggregated PSB) but the challenges absent regulatory intervention will be acute
- Absent regulatory intervention, the main scope for response by the PSBs will lie in joint action – e.g., to withhold their services (where possible and to the extent permitted under competition rules) in order to extract undertakings on access, prominence, search/navigation and/or compensation

Glossary and definitions (1)

4G	Mobile communications standard allowing wireless internet access; 91% outdoor coverage in the UK
5G	Mobile communications standard to succeed 4G, enabling faster access than its predecessor; services have just launched in the UK
ACR	Automatic content recognition – identification technology that recognises content played on a media device by matching pixels
Addressable TV	Technology that delivers targeted advertising on digital TVs and leverages subscription registration data to target homes
API	Application programming interface – a set of routines, protocols, and tools for building software applications which specifies how software components should interact; n this context to enable delivery of content and functionality to A/V consumers
AVOD	Advertising video on demand – VOD service funded that is free at the point of use and contains ads
Backwards EPG	EPG that also surfaces recently broadcast on-demand content
BVOD	Broadcaster video on demand – VOD service from a TV broadcaster (usually based around 'catch up')
CDN	Content delivery network – hubs of computer servers and data centres set up geographically close to end-users to ensure fast/high quality platform performance (vital for video streaming services)
Cloud	Centralised hub of computers on a mass scale, allowing for the delivery of computing services over the internet (rather than via in-house systems)
Cloud service provider	Business offering cloud computing; can include provision of IaaS, SaaS or PaaS to businesses and/or individuals
Connected device	Internet-enabled product allowing user to access internet features on a TV (includes streaming sticks and games consoles)
Connected TV	TV with internet access due to use of a connected device
Data centre	Dedicated group of networked computer servers; used for remote storage, processing, or distribution of large amounts of data
Deep-linking	Creating links between different platform/service OSs such that in-app content is visible/searchable in the platform UI
Disintermediation	Bypassing intermediaries such as aggregators and platforms in the supply chain to sell directly to consumers
DTO	Download to own – form of EST where the consumer pays to download content that they can keep
DTR	Download to rent – form of EST where the consumer pays to download content for a specific period of time
Dynamic ad insertion	Technology that allows advertisers to swap ad creatives in linear, live or VOD content to tailor messages to individuals or households
EPG	Electronic programme guide – navigation software which lists current, scheduled and TV programmes; also known as the TV guide
EST	Electronic sell through (also known as TVOD) – process through which customers pay to download content (usually individual titles or series); includes DTO and DTR

Glossary and definitions (2)

First party data	Data collected by an operator from the operator's own platforms or services
IaaS	Infrastructure as a service – a B2B service for outsourcing hardware, cloud-based storage, servers data centres and other network components to an intermediary (e.g., AWS, Microsoft Azure, OpenStack)
ISP	Internet service provider – business providing B2B or B2C access to the internet
IPTV	Delivery of TV over IP networks; rare in UK for full linear TV service but common elsewhere: while OTT uses the open web, IPTV typically deploys fully-provisioned networks to get content to audiences
Linear viewing	Consumption of, traditionally broadcast, television (also known as live TV), where programming is scheduled for a coterminous (often mass-market) audience – can be over IP
Live streaming	Content distributed over IP in real time
Metadata	Data that provide context or additional information about other data: e.g., programming information accompanying a video stream; used to inform tailored, programmatic advertising insertion
Non-linear viewing	Consumption of content as and when consumers choose, rather than as scheduled or broadcast
On demand	Distribution of content 'anytime, anywhere' as opposed to via a linear schedule
Operating system	Software that controls the UI and acts as the intermediary between the hardware and the user: includes application protocol interface ('API')
OTT	Over the top – delivery of content via IP without the need for additional hardware (set-top box or connected device); e.g., SVOD services
PaaS	Platform as a service – provision of infrastructure allowing development, running and management of applications
Pay TV	Subscription service where you pay to access a closed system platform, to access additional, often premium
Programmatic advertising	The buying and selling of advertising through use of algorithms to match supply and demand automatically
Progressive download (PDL)	Form of playing media content over IP where digital files are downloaded temporarily to the end user's device; playback can begin before the download is complete
Push VOD	Process of pay-TV operators pre-downloading popular content to set-top boxes to reduce the burden of real-time requests on the delivery system

Glossary and definitions (3)

PVR	Personal video recorder – device with storage memory that permits users to record, store and replay content, often as part of set-top box
SaaS	Software as a service – the provision of licensed software on a subscription basis; centrally hosted by a third party
Second-party data	Data collected on another operator's platform and exchanged via a data-sharing arrangement or in return for access and/or cash payment
Server	Computer – or a cluster of computers – organised to answer data requests from an end user's computer
Set-top box	Device that connects a TV to provide recording capability and/or access to pay TV, usually includes some form of storage capability
Smart TV	TV with integrated internet access
Smart speaker	Speaker with an integrated virtual assistant that responds to voice commands – can control other devices in the home through Bluetooth or Wifi
Streaming	Form of playing media content over IP where digital files are transmitted a few seconds at a time and are not downloaded to end users' devices
Streaming stick	Form of connected device which offers access to third party streaming apps and content via the TV when plugged in
SVOD	Subscription video on demand – VOD service costing a recurring fee
Third-party data	Data collected and aggregated by a company with no direct involvement in the operator at hand
TV operator	Business running a TV platform or TV service
TV service	A bundle of content and related functionality that can be accessed either on a 'platform' or via OTT – e.g., Netflix, iPlayer, HBO Max, Now TV Passes
TV platform	A 'managed' eco-system providing access to TV services; often the result of a combination of an OS and consumer product; platforms do not necessarily rely on an OS, but are increasingly driven by them; this can refer to Sky and Virgin, but also Roku, Amazon Fire TV or a Sony smart TV (running Android), where some of the key benefits accrue to Google instead of Sony
UI	User interface – the consumer-facing front-end of the OS, through which end user accesses services and content
UX	User experience – 'look and feel' of a service from the perspective of the end user – can include ease of navigation, quality of search results and logic of layout
vCDN	Virtualised content delivery network – distributes resources with virtualised network functions (VNF) according to need; reduces need for running with idle time
Voice	Software allowing control of a device with spoken words, usually integrated into a smart speaker, smartphone, smart TV or other connected device

Mediatique

Executive summary

Introduction and note on methodology

Taxonomy of the value chain

Business models

Market dynamics and characteristics

Future scenarios (2020-2025)

Conclusions

Glossary and definitions

Appendix

Value chain participants (1)

Company	Company information		2020-2025 strategy statement
Akamai	Main segments	Content delivery infrastructure	"The technology landscape is rapidly evolving, driving businesses to want to enhance their digital capabilities to improve productivity, transform customer experiences, increase brand awareness and drive competitive advantage … We believe that our scale, unique technology, high-quality intellectual property portfolio, strong relationships with hundreds of leading telecommunications carriers and thousands of major brands on the web, and relentless and personalised attention to customer and partner needs create significant value for stockholders and provide a meaningful edge over competitors." *– Our Strategy, Akamai Annual Report 2018*
	Presence in UK	CDN provider to both BBC iPlayer and ITV Hub	
	Total revenues ($m, 2018)	2,718	
	Revenue segments (%)	Web division: 53% Media and carrier division: 47%	
	UK revenue (%)	>10%	
Amazon	Main segments	Aggregation and distribution; Content delivery infrastructure; Additional hardware; OS	"It's no longer a barrier to read a translation for our customers…We're seeing increased appetite [for international content], especially with younger Prime members. They really have no barrier to entry with language. The world is big, but it's getting smaller in that way." *– Jennifer Salke, Amazon Studios, Jan 2020, Hollywood Reporter* "Voice has become ubiquitous and Amazon has done a good job turning its first mover advantage with Alexa into a strong market share lead…they have maxed out CES, and alongside Google, Samsung, and others, I'm not sure they can do more than what they're doing here…" *– Bradley Metrock, CEO, Score Publishing, Jan 2020, Quartz*
	Presence in UK	7.1m Prime Video households (BARB)	
	Total revenues ($m, 2018)	232,887	
	Revenue segments (%)	Online: 53% Physical: 7% Third-party: 18% Subscriptions: 6% AWS: 11% Other: 4%	
	UK revenue (%)	6%	
Apple	Main segments	Aggregation and distribution; Additional Hardware; Screen; OS	"We love 'Friends'. Who doesn't love 'Friends'? But it's not what Apple TV+ is about, it's about original programming…It doesn't feel right for Apple to go out and take a rerun. It doesn't feel like Apple. We're going to be focused on original programming." *– Tim Cook, CEO, Apple, Feb 2020, CNBC* [on hardware innovation and its role in onward strategy] "I know of no one who would call a 12-year old mature [referring to iPhone]…sometimes these steps are humongous, sometimes these steps are smaller. But they key is always to make things better, not just change for change's sake…The ethos and the DNA have never been stronger on the innovation front. The product line has never been stronger." *– Tim Cook, CEO, Apple, Dec 2019, Nikkei Asian Review*
	Presence in UK	51% share of UK mobile phone OS	
	Total revenues ($m, 2018)	265,595	
	Revenue segments (%)	iPhone: 63% iPad: 7% Mac: 10% Services: 14% Other products: 7% *Revenue segments will not total 100% because of rounding*	
	UK revenue (%)	3%	

Value chain participants (2)

Company	Company information		2020-2025 strategy statement
Arqiva	Main segments	Content delivery infrastructure	"Everyone is watching and listening to more content, we need to focus on how to utilise hybrid-IP products and reach emerging platforms as well as continuing to maintain traditional TV broadcast services for both free-to-view live and on demand TV. The strategy of refining our business model to bring together Terrestrial Broadcast, Satellite & Media and Networks is a key step in being able to achieve this, providing a more aligned team and ability to deliver for our customers. We will also continue to deliver the 700MHz Clearance programme to clear spectrum to be used for mobile data services and also look at how we can work with the Government and Broadcasters on the review of analogue radio switchover and how our DAB network can be utilised for this." *– Strategic Overview, Arqiva Annual Report 2019*
	Presence in UK	Manages 100% of UK's DTT network	
	Total revenues ($m, 2018)	1,289	
	Revenue segments (%)	Terrestrial broadcast: 49% Telecomms & M2M: 39% Satellite & Media: 12%	
	UK revenue (%)	99%	
BBC	Main segments	Aggregation and distribution; Content delivery infrastructure	"Research from Ofcom has shown that a substantial majority of young people support public service broadcasting … That is why delivering on our long-term strategic commitment to reinventing the BBC for a new generation is so vital. It is about more than making sure we can reach everyone with our universal mission today or tomorrow. It is because we are determined to safeguard the future of public service broadcasting for generations to come to ensure that they, too, can continue to appreciate its personal and societal value. To deliver these aims we will focus on four core priorities for 2019/20: creativity; growing BBC iPlayer and BBC Sounds; trust and impartiality in news; and making the BBC the best place to work." *– The BBC's Strategic Priorities, BBC Annual Plan 2019/20*
	Presence in UK	31% share of UK audience in 2018 (BARB)	
	Total revenues ($m, 2018)	6,308	
	Revenue segments (%)	PSB Group: 75% BBC Studios: 22% Other commercials: 3%	
	UK revenue (%)	87%	
BT	Main segments	Aggregation and distribution; Content delivery infrastructure	"Our investments result in long-lasting assets. This includes nationwide networks, where we are investing in the critical physical components – such as cabling, switches and routers – of the digital economy of the near future … Our network also creates a robust physical foundation for many uses in next generation technologies which need the best connectivity. We will own the foundation and therefore be in an unrivalled position. We see significant opportunities in the advancement of Artificial Intelligence (AI) and machine learning, for new communications methods, such as virtual and augmented reality, and for connected devices." *– Our Strategy, BT Annual Report 2019*
	Presence in UK	34% share of UK fixed broadband services (2018)	
	Total revenues ($m, 2018)	30,756	
	Revenue segments (%)	BT Consumer: 21% EE: 22% Business and Public Sector: 19% Global Services: 21% Wholesale and Ventures: 8% Openreach: 9%	
	UK revenue (%)	84%	

Value chain participants (3)

Company	Company information		2020-2025 strategy statement
CenturyLink	Main segments	Content delivery infrastructure	*"*The capabilities the new CenturyLink offers are essential to our customers' digital transformation and our fibre-rich network is well-positioned to meet the continued growth in bandwidth demand … As powerful as our network is, we know that we must make that power easier for our customers to access by continuing to drive higher levels of simplification, automation and customer self-service into our business. This will be difficult and complex work, but as 2018 was about integration and synergy realization, 2019 is about transforming our customer experience and service delivery. By continuing to increase the reliability, security and ease with which customers access our network platform, we not only improve our customers' businesses, but also improve our employees' experience and drive to a more efficient operating model." *– Jeff Storey, CenturyLink Annual Report 2018*
	Presence in UK	Expanded node presence in UK (inc. in Germany, France, Spain, Italy and the Nordics)	
	Total revenues ($m, 2018)	23,443	
	Revenue segments (%)	IP and Data Services: 31% Transport and Infrastructure: 35% Voice and Collaboration: 28% IT and Managed Services: 3% Regulatory Revenue: 3%	
	UK revenue (%)	>1%	
Freesat	Main segments	Aggregation & Distribution	"Our research has shown us time and again that customers appreciate the freedom of choice that our hybrid TV system offers and value the ability to curate their own viewing. Our new generation range of set top boxes allows them to do just that, with easy set-up, a huge range of viewing options and a fast, reliable service that is 4K ready. I'm confident that we've produced a platform that will grow and evolve in line with customers' viewing habits." *– Alistair Thom, MD, 'Freesat taps CommScope for new generation of 4K boxes', DTVE, 24 Feb 2020*
	Presence in UK	Used by c.1m households in the UK (BARB)	
	Total revenues ($m, 2018)	11.65	
	Revenue segments (%)	BBC: 20% ITV: 12% Hardware sales: 68%	
	UK revenue (%)	100%	
Freeview	Main segments	Content Delivery infrastructure	"If anything, we've gained from the growth of the streaming services … We see the growth of the SVOD players as an opportunity. They allow people to buy a more personalised content package at a more attractive price point. It's the British version of cord cutting: Freeview plus Netflix or Amazon. That's one of the upsides and opportunities of Freeview, the ability to combine free, good-quality public service TV with the opportunity to dip into whichever VOD service you want." *– Jonathan Thompson, Digital UK CEO, RTS, Feb 2019*
	Presence in UK	The UK's DTT service; main set TV service in more than 11 million homes	
	Total revenues ($m, 2018)	*Joint funding agreement between Arqiva; BBC; ITV; Channel 4 & Sky TV*	
	Revenue segments (%)	N/A	
	UK revenue (%)	100%	

Value chain participants (4)

Company	Company information		2020-2025 strategy statement
Google	Main segments	Aggregation and distribution; Content delivery infrastructure; Additional hardware; Screen; OS	"I think Google Assistant is an integral part of highlighting the best of Google and the best of our partners," Rincon stated. "It's not a separate product. When you ask the assistant to navigate home, it's actually using Google Maps. Even when we do interpretation, we're using the Google Translate app. In some ways it's like an embodiment of the best things of Google." *- Lilian Rincon, Senior Director Product Management, Mar 2020, Investor's Business Daily*
	Presence in UK	YouTube has 23% share of video minutes per person (2018)	
	Total revenues ($m, 2018)	136,224	
	Revenue segments (%)	Properties: 71% Network Members' properties revenues: 15% Other revenues: 15%	
	UK revenue (%)	1%	
ITV	Main segments	Aggregation and distribution; Content delivery infrastructure	"While television continues to reach 90% of the population each week, viewers and particularly younger viewers, are watching less live linear television … While ITV has a strong market position we recognise that we need to develop at pace to deliver future success and to mitigate the risks of the changing market. Our strategic vision is to be a digitally led media and entertainment company that creates and brings our brilliant content to audiences wherever, whenever and however they choose. We have evolved our strategy to deliver this with three clear priorities: (1) Continue to grow UK and Global Production; (2) Transform our Broadcast business, and (3) Expand our Direct to Consumer activities." *– Our Strategic Vision, ITV Full Year Results 2019*
	Presence in UK	23% share of UK audience, 2018 (BARB)	
	Total revenues ($m, 2018)	4,154	
	Revenue segments (%)	Studios: 35% Broadcast & Online: 65%	
	UK revenue (%)	76%	
LG	Main segments	Screen; OS	"We'll be all about the future where *anywhere is home*. As pioneers in the field of AI it is our responsibility to consider the importance of the human experience whilst pushing the boundaries of AI research and development…Together with LG Electronics, we hope that this work helps to set forth standards and principles that guide AI practitioners to consider a human centric approach when building the future." *– I.P. Park, President & CTO, Jan 2020, LG CES 2020 Event*
	Presence in UK	16% of all UK TV users watch on an LG set	
	Total revenues ($m, 2018)	51,746	
	Revenue segments (%)	Home Appliance Solutions: 32% Home Entertainment: 26% Mobile Communications: 13% Vehicle Components: 7% B2B: 4% LG Innotek: 13% Other segments: 7% *Revenue segments will not total 100% because of rounding*	
	UK revenue (%)	1%	

Value chain participants (5)

Company	Company information		2020-2025 strategy statement
Microsoft	Main segments	Content delivery infrastructure; Screen; OS	"The way I look at it is Windows is the billion user install base of ours. We continue to add a couple of hundred million PCs every year, and we want to serve that in a super good way … The thing that we also want to think about is the broader context. We don't want to be defined by just what we achieved. We look at if there's going to be 50 billion endpoints. Windows with its billion is good, Android with its 2 billion is good, iOS with its billion is good — but there is 46 billion more. So let's go and look at what that 46 billion plus 4 [billion] looks like, and define a strategy for that, and then have everything have a place under the sun." *– Satya Nadella, CEO, 'Microsoft's CEO looks to a future beyond Windows, iOS, and Android', The Verge, 21 Jan 2020*
	Presence in UK	68% share of PC OS in UK	
	Total revenues ($m, 2018)	110,360	
	Revenue segments (%)	Productivity and Business Processes: 32% Intelligent Cloud: 29% More Personal Cloud: 38% *Revenue segments will not total 100% because of rounding*	
	UK revenue (%)	2%	
Netflix	Main segments	Aggregation and distribution	*"*Our core strategy is to grow our streaming membership business globally within the parameters of our operating margin target. We are continuously improving our members' experience by expanding our streaming content with a focus on a programming mix of content that delights our members and attracts new members. In addition, we are continuously enhancing our user interface and extending our streaming service to more internet-connected screens. Our members can download a selection of titles for offline viewing." *– About Us, Netflix Annual Report 2018*
	Presence in UK	11m subscribers in UK market; dominant SVOD	
	Total revenues ($m, 2018)	15,794	
	Revenue segments (%)	Subscriptions: 100%	
	UK revenue (%)	5%	
Panasonic	Main segments	Screen; OS	*"*The Company recognizes that profit improvement is essential to ensure sustainable growth … In the consumer electronics business, the Company will address the Chinese market, where it anticipates major growth over the medium to long term. To step up our focus, we established the China and Northeast Asia Company in April 2019 … The speed and cost-competitiveness derived from the China operations will be combined with our trustworthiness and high technological expertise developed in Japan, leading to enhanced competitiveness. Looking to the future, the strengths refined from the China and Japan businesses can be leverage in other Asian businesses*."* *– Points for the new mid-term strategy, Panasonic Annual Report 2019*
	Presence in UK	Has 12% share of TV sets in the UK	
	Total revenues ($m, 2018)	76,371	
	Revenue segments (%)	Appliances: 29% Automotive & Industrial Solutions: 32% Connected Solutions: 13% Eco Solutions: 18% Other: 8%	
	UK revenue (%)	1%	

Value chain participants (6)

Company	Company information		2020-2025 strategy statement
Roku	Main segments	Additional hardware; OS	"In the midst of this ongoing shift in the industry, we continue to execute well against our strategic plans by launching innovative products, being a neutral partner at the centre of the streaming ecosystem, building capabilities to aggregate content and engage viewers, and further strengthening our unique advertising platform which offers superior capabilities for brands. Given the size of the opportunity, we believe that investing incremental gross profit in 2020 to extend our strategic advantages best positions us for the decade ahead." *– Anthony Wood, CEO, Dec 2019, Shareholder Letter*
	Presence in UK	Now TV (white label OS); OS in Hisense TVs	
	Total revenues ($m, 2018)	742	
	Revenue segments (%)	Platform: 56% Player: 44%	
	UK revenue (%)	2.5%	
Samsung	Main segments	Screen; OS	"Our world is transitioning into an era of intelligence and innovation based on data and led by 5G and AI technology. Seismic changes seem imminent considering ongoing innovations in disruptive technologies and ever-increasing corporate competition. Planning to maintain our leadership role regardless of the changes in the environment, we are aggressively investing in R&D, and, as a result, are the second largest patent holder based on the number of US patents. We will continue to produce innovative technology in areas such as AI chips, foldable devices, microLED TVs; and we will keep making mid- to long-term investments in system semiconductors and QD display, foundations for future growth." *– Samsung Letter to Shareholders 2019*
	Presence in UK	24% share of UK mobile phone market	
	Total revenues ($m, 2018)	205,191	
	Revenue segments (%)	Consumer Electronics: 16% IT & Mobile Comms: 39% Display Services: 45%	
	UK revenue (%)	2%	
Sky	Main segments	Aggregation and distribution; Content delivery infrastructure; Additional hardware	"In many respects, the businesses that are being created today mimic what we've created at Sky. The idea of a fully integrated media company that combines everything from owned and acquired content, world-class consumer technology, best-in-class customer service capability, a really strong brand and the ability to apply customer insight across the value chain to deliver competitive advantage is what Sky is all about … People are only just beginning to get their heads around what it actually takes to be successful. It is not only about your content and technology, but about the whole process of managing, operating and running a large-scale consumer business." *– Jeremy Darroch, Sky CEO, RTS, Oct 2019*
	Presence in UK	c.13m customers in UK (TV, broadband, telephony)	
	Total revenues ($m, 2018)	17,443	
	Revenue segments (%)	D2C: 87% Content: 6% Advertising: 7%	
	UK revenue (%)	66%	

Value chain participants (7)

Company	Company information		2020-2025 strategy statement
Sony	Main segments	Screen; Additional hardware	*"*The first focus area is to reinforce our user-oriented DTC services and creator-oriented content IP. We aim to strengthen ties with users and enhance DTC services that generate recurring revenue as we acquire and revitalize content IP and maximize its value … The second focus area is to generate a sustainably high level of cash flow from our branded hardware business … We will continue to develop products that connect creators and users in this business." *- Sony Corporate Report 2019*
	Presence in UK	50.1% share of console OS in the UK	
	Total revenues ($m, 2018)	81,234	
	Revenue segments (%)	Games & Network Services: 23% Music: 9% Pictures: 12% Home Entertainment & Sound: 14% Imaging Products & Solutions: 8% Mobile Communications: 8% Semiconductors: 10% Financial Services: 14% All other: 5% *Revenue segments will not total 100% because of rounding*	
	UK revenue (%)	5%	
Virgin	Main segments	Aggregation and distribution; Content delivery infrastructure	*"*We strive to achieve organic revenue and customer growth in our operations by developing and marketing bundled entertainment and information and communications services, and extending and upgrading the quality of our networks where appropriate … While we seek to increase our customer base, we also seek to maximize the average revenue we receive from each household by increasing the penetration of our digital broadband internet, video, fixed-line telephony and mobile services with existing customers through product bundling and upselling." *- Strategy and Management Focus, Virgin Media Annual Report 2019*
	Presence in UK	20% share of UK total broadband provision	
	Total revenues ($m, 2018)	6,677	
	Revenue segments (%)	Video: 20% Broadband: 31% Fixed-line: 18% Non-subscription: 1% Residential mobile: 13% B2B: 15% *Revenue segments will not total 100% because of rounding*	
	UK revenue (%)	92%	
YouView	Main segments	Aggregation and distribution	"…the introduction of voice enabled search makes it even easier for users of the service to find what they're looking for…Reliable speech recognition is clearly critical, so it's been fantastic to have been working with Amazon on this…A successful user experience requires the end-to-end voice interaction to feel natural and responsive…Delivering fast performance to customers at scale is critical to our success, which is why we decided to use AWS IoT; it provides scale to YouView globally…" *– Sion Wynn-Jones, Director of Product & John Richardson, Head of Cloud Services, July 2019, YouView.com*
	Presence in UK	Used by c.1.8m households in the UK (BARB)	
	Total revenues ($m, 2018)	15.3	
	Revenue segments (%)	Services fee (funding by shareholders): 20% Platform Fees/Device Fees: 80%	
	UK revenue (%)	100%	

Mediatique Ltd
65 Chandos Place
London WC2N 4HG
UNITED KINGDOM

Telephone: +44 (0)20 7836 5050
www.mediatique.co.uk

Mathew Horsman, Director	mathew@mediatique.co.uk
Paul Fleming, Director	paul@mediatique.co.uk
Sophie Outhwaite, Consultant	sophie@mediatique.co.uk
Luke Boyd, Consultant	luke@mediatique.co.uk

Important information

The opinions expressed in this report are those of Mediatique and not of Ofcom

The information and opinions expressed in this report have been compiled from sources believed to be reliable but neither Mediatique, nor any of its directors, officers, or employees accepts liability from any loss arising from the use hereof or makes any representations as to its accuracy and completeness