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Your response

Question	Your response
Q1. How are audience demands and expectations evolving, and how does that vary for users of different TV platforms and different demographics?	Over the past years classic TV* view time is constantly losing share to streaming, and it's unquestionable that the audience habits are changing in our society. However, it's wrong to assume that this change is a result of a technological preference by the consumers. In a survey[1] conducted by SES with 5,000 people in the UK, the results indicated that among homes with access to both classic linear TV and

streaming video on demand subscriptions, 41% like both services equally, 14% prefer classic TV, 24% prefer video on demand but they also like classic TV, and only 21% indicated that they don't like classic TV. When we asked why the preference for VoD / dislike of classic TV, 52% selected arguments related to **convenience** (available everywhere, ability to binge watch etc), 19% selected arguments related to **price**, 28% selected arguments related to **content availability,** and 1% didn't know. 0% indicated a preference for streaming due technical reasons.

It's irrelevant for the consumer the technology being used to distribute video content. Consumers don't want streaming, consumers want convenience, low cost and content availability. Distinguishing consumer preferences from the technologies/business models that are being used to meet these demands, is an important step towards establishing efficient public policies for the future of TV.

** Classic TV households are homes with access to TV content via traditional modes of reception (I.e. satellite, DTT, IPTV or Cable)*

Content availability

Content is King, it's the number one reason for consumers to choose a platform. When the same content is available in more than one platform, convenience and price will also place a major role in the choice process. However, with the amount of choice available in the market today, content discovery is becoming a major issue for consumers. A recent study conducted by Nielsen[2] in USA, UK, Canada, Mexico and Germany, indicated that 20% of consumers "don't know what to watch beforehand and couldn't find something to watch—so they did something else instead". The average time to find something to watch is 10.5 minutes per session amongst an ocean of choices with more than 2.7 million items of content available (up from 1.9 million in 2021), leading to a paradox of choice:

"The paradox of choice suggests that an abundance of options actually requires more

effort to choose and can leave us feeling unsatisfied with our choice. When the number of choices increases, so does the difficulty of knowing what is best. Instead of increasing our freedom to have what we want, the paradox of choice suggests that having too many choices actually limits our freedom. Learning to choose is hard. Learning to choose well is harder." www.thedecisionlab.com

In this context, content curation solutions are emerging as an appealing method to help consumers discover new contents, where linear TV play a major role. In a recent study conducted by Horowitz research[3] with 2,000 people in the USA, indicated that 80% of streamers look for curated collections to find content.

Convenience

It's no surprise that on-demand content is growing in popularity. In a regular weekday, an average of 20%[4] of BBC One linear schedule is old (re-run), and for BBC two is 50%[4]. The same is true for many other TV channels in UK and around the world, with some TV networks having more than 80%[5] of their linear schedule composed by re-runs. In this context, it's more convenient to the consumers select the best time to catch-up their TV content than rely on the TV network schedule. Main conveniences factors mentioned by consumers in the survey conducted by SES in the UK[1]:

1. Ability to select what to watch anytime – mentioned by 51% of respondents
2. Possibility to binge watch – mentioned by 44% of respondents
3. Content available everywhere and on any device – mentioned by 20% of respondents

Bundled access (all content available in one place, easily discoverable, personally relevant, and easy to use) is another important attribute that consumers are demanding. If content is King, convenience is Queen. Our internal analysis[6] suggest that consumers are more willing to pay for convenience than to pay for content.

Price

According to a report published by The Guardian[7], the number of UK homes with at least one paid streaming subscription service fell by 215,000 in Q1-22, ending a decade of almost uninterrupted growth. Deloitte[8] recently indicate that 25% of UK homes share streaming subscriptions, and Park Associates[9] said that 29% of USA internet homes cut at least one streaming subscription to save money in the past 12 months.

The data show us the obvious, consumers are sensitive to price, and attempts to increase ARPU will lead to a higher churn. To keep prices stable, streaming services are adopting ads in video on demand as well. According to NPAW[10], 3/4 of SVoD services worldwide will introduce ads in the next two years. TV content subsidized by ads is not a new concept, but now is being adopted by streaming services as well. Free TV has a strong appeal among consumers, SES internal data (via Satellite Monitor) suggests that, even with the strong competition from streaming services, FTA via satellite remains stable both in terms of reach and number of channels available worldwide. Free TV will always have a high degree of attractiveness and will guarantee the largest audiences.

Another important trend to discuss is that TV screens are becoming larger. Samsung announced[11] that 1/3 of their QLED TV sales in South Korea in the first half of 2023 were larger than 85". A new study by consulting firm Omdia[11] reveals that since May 2023, and for the first time ever, the average size of LED/LCD TVs sold worldwide has exceeded 50" (average size rose from 46.8" in August 2022 to 50.2" in May 2023). As tv screen get larger a new demand will emerge from consumers, who will start to require better picture quality from TV networks. Delivery of ultra-high resolution video will soon become a trend that will need to be addressed by the industry, and which could be a challenge for live events.

Q2. What do audience trends mean for the financial prospects and sustainability of TV distribution platforms, and what are the key decision points over the next ten years?	Streaming platforms are struggling[12] to reach profitability due to high distribution costs and the VoD business model. From the sustainability point of view, the carbon footprint of streaming is an issue. Understanding these challenges are vital to support the industry key decisions over the next years. **Distribution costs** Streaming cost more to distribute than traditional broadcast tv. CDN's charge per gigabyte, meaning the more a content is viewed, the more it will cost to distribute it. Niche content can benefit from this model, but as soon it become more successful CDN fees will grow exponentially. In broadcast however, audience growth has no effect on distribution costs, which makes it ideal for mass distribution as it is highly scalable. <u>At how many homes / devices will the inflection point be reached? Below an analysis comparing the costs of a public CDN vs Satellite distribution:</u> *Cost per Gb varies a lot, from 0.001 EUR to more than 0.1 EUR, depending on your traffic tier. Considering an average view time of 3h/day per viewer, and the consumption of 3.1Gb per hour of HD video, the tipping point where satellite is more cost-effective will range from 5K to 80K homes/devices.* Going IP is a smart move for niche content. Indeed, streaming has helped in the proliferation of new channels and niche content, which previously had a limited supply due to broadcast costs being prohibitive for low-audience content. But going IP it's not cost-efficient for mass distribution, and traditional content creators are seeing their margins squeezed by the cost of streaming, with majority operating in negative margins. [Slides from "IABM – State of the Industry", shared @ IBC 2022 conference][Appendix 1]

VoD business model

Video on Demand is convenient for consumers, but is a challenge from the point of view of content monetization. The advantage of linear distribution is the ability to gather a large audience in a single point in time, maximizing ad revenues and profitability of the content.

Linear distribution has a greater potential to maximize profits than video on demand distribution. Below an interesting example comparing two successful series in streaming and broadcast[Appendix 2]

In this graphic we see the search interest (Google) of two famous series, Game of Thrones and Stranger Things, between Dec-18 and Dec-23 in the UK (source: trends.google.com). The purpose is not to analyse total search interest, but the peak search periods for each series. New episodes of Game of Thrones Season 8 were exclusively distributed by HBO via traditional broadcast, one episode per week. For Stranger Things Season 3 however, Netflix used a different strategy and distributed all episodes at once for viewers to binge watching. Note that Game of Thrones Season 8, with only six episodes, manage to keep high level of interest for 40 days (total broadcast season), while Stranger Things Season 3, with 9 episodes, manage to keep high level of interest for only 6 days. Indeed, Netflix itself release a statement saying that 45% of Stranger Things viewers finished season 3 in 6 days. From the point of view of content monetization, Game of Thrones Season 8 had a window of 40 days to maximize profits, while Stranger Things Season 3 had a window of only 6 days. It's also interesting to note that for Stranger Things Season 4, Netflix changed its strategy and delivered the episodes in two phases, managing to keep high levels of interest for a longer period.

Another issue with the VoD model is the revenue source. As it is highly dependent on subscription revenues, content producers are now compelled to invest substantially more in the creation of diverse and engaging content to retain and attract subscribers. The constant need for fresh material to keep audiences active places a

financial burden on producers, requiring increased budgets and resources.

ESG

Streaming consumes more energy than traditional broadcast. This is well described in the study that Ofcom itself commissioned to Carnstone in 2022, indicating that streaming consumed 4.2x more energy than broadcast tv in 2021 for distribution in the UK, even with less 30% device hours.

Adding the energy consumption of viewing devices in the calculation, the difference of total energy consumption almost disappears between streaming and broadcast (considering that the average viewing device power consumption is lower for streaming than broadcast). However, it's important to take into consideration that in an eventual migration to IP/streaming, the same devices that today uses broadcast will migrate to streaming, which eliminates the argument of the device consumption advantage.

Streaming typically consumes more energy to distribute due to fundamental differences to broadcast as we describe below. Although some advancements in technology and improvements in energy efficiency are ongoing (some streaming services are actively working on optimizing their infrastructure and exploring greener alternatives to mitigate the environmental impact), the inherent nature of personalized, on-demand streaming contributes to its higher energy consumption compared to the more centralized and simultaneous distribution model of traditional broadcast.

<u>Constant Data Transmission</u>

In streaming, content is delivered over the internet in real-time, with data continuously transmitted to individual users as they watch. This requires constant server operation and data transmission, contributing to a consistent energy demand. Traditional broadcast, on the other hand, sends a single signal that is received by all viewers simultaneously. This one-to-many model is more energy efficient as it doesn't

require continuous, personalized data transmission for each viewer.

Content Delivery Network (CDN) Infrastructure

Streaming services often rely on CDNs to efficiently deliver content to users. CDNs involve a network of servers distributed globally, leading to increased energy consumption for maintaining and operating these servers. Traditional broadcast infrastructure involves transmitting a signal from a centralized source, such as a broadcasting tower, which can be more energy-efficient compared to the distributed nature of CDNs.

Data Center Operations

Streaming services heavily rely on data centers for storing and processing the vast amounts of data required for real-time content delivery. Data centers demand significant energy for cooling systems, server maintenance, and the overall management of data transmission. While traditional broadcast systems also have infrastructure requirements, they involve fewer data centers, and the energy demands are often more predictable and centralized.

Individualized Streaming vs. Simultaneous Broadcast

Each streaming user receives a personalized stream based on their preferences, leading to individualized data transmission. This tailored approach increases the computational load and energy consumption at the server and user ends. Traditional broadcast delivers the same content to all viewers simultaneously, resulting in a more streamlined and energy-efficient process, especially when reaching a large audience.

Conclusion

Going IP and VoD business models are increasing the costs for the entire value chain in media and entertainment, which is reflected in higher costs for consumers. All major streaming services have raised prices this year. The monthly price rose on average 23%, well above the 3.7% 12-month inflation rate for the U.S. as of September[13]. As a result, piracy is growing as a threat[14] and free to view business models are

	expecting to grow more than subscription-based models. The financial issue is not the only one to consider. As streaming demands higher energy consumption to be distributed than broadcast, the environmental impact should be considered in an eventual decision to migrate to IP. Key decisions for the next years should consider: - Ensure the longevity of free-to-view business models to guarantee that people will have widespread access to TV content - Use of cost-efficient distribution technologies for mass audience content, in order to guarantee low-cost services and to avoid putting a burden on consumers - Usage of greener alternatives for content distribution in favour of a sustainable future
Q3. How do broadband networks and supporting infrastructure need to evolve to support resilient delivery of TV over the internet in the future?	Resilience is based on the fact that several infrastructures cooperate to render one seamless service rendition, no matter what adversities that face the TV distribution system. Typical issues may be of a geo-political nature, technical sabotage or failure, nuclear or chemical accidents, or natural catastrophes, but it is clear that relying on a single infrastructure does not provide the redundancy that one could expect from critical systems. It is also clear that the broadcast infrastructure is one such infrastructure that is key to reach the largest numbers of users in disaster scenarios. It will therefore always have to be considered as a kind of megaphone to society. Non-terrestrial infrastructures also have an important role to play if the terrestrial infrastructure is no longer available. Thus, in order to support resiliency, different networks need to be available, maintained and work together to provide a service. A hybrid approach with broadband and broadcast is effective not only from the resilience point of view, but also from the cost and ESG point of view as we described before. SES supports the adoption of a hybrid approach using DVB-NIP[15] (DVB native IP broadcast) to facilitate the integration of streaming and broadcast

	technologies into an efficient and contemporary IP media distribution solution, as DVB-NIP provides the possibility to run the broadcast component via IP multicast, integrating perfectly with unicast provided via broadband and blending seamlessly at the receiver. It shall therefore be possible to receive both broadband supplied data and broadcast supplied data at the level of the end-terminal. Those technologies supporting this type of resilience shall always be preferred. It also important to highlight that recent advances in satellite technology are enabling new fleet to enjoy enhanced flexibility to undertake varied missions in addition to the classic DTH delivery of linear TV. This flexibility (serve different applications with a single satellite) makes the space segment even more attractive as a sustainable partner solution for the future.
Q4. In what ways might different types of 'hybrid' terrestrial and internet services deliver benefits for audiences and what risks may arise?	Replicating TV content hundreds of thousands of times, and setting up millions of individual connections, for all users to access the same content at any time, is collectively a waste of resources. For this reason, broadcasting was invented, and should be further developed by coming generations, rather than going backwards and making all communication systems individual. Developing broadcast is in the best interest of society and ensures the efficient and sustainable use of natural resources. A hybrid solution with broadcast and broadband systems can cooperate well by using the same protocols which blend at the end-user devices (IP). Then, end users will benefit from the best possible access to all networks and content. In addition, such hybrid systems will provide inherent redundancy and very high levels of overall availability. In this hybrid system, broadcast can be used to deliver mass audience content and live events, while streaming can be used to deliver niche and personalized content (including feed broadcast content with personalized ads), as well to serve as a return channel to send user data back to content providers and platform operators. This method will guarantee the most cost-efficient,

	green, reliable, sustainable and efficient solution for customers. It's important to highlight that such solution will require, of course, a greater collaboration between all parties involved in the media value chain. Policymakers should actively engage with stakeholders to create supportive public policies to promote it.
Q5. Given the sharing of infrastructure, what would the implications for other sectors be if there was a change to the use of digital terrestrial television (DTT)?	Currently, broadband networks are not capable of replacing broadcast networks at the scale that would be required for distributing high quality access to live content. This will stay true for many years to come. If broadcast networks were to disappear, they would have to be replaced by large scale CDNs capable of supplying the base load which is currently taken by broadcasting. Deep-Caching Content Delivery Networks (CDNs) would need deployment in major cities to handle the substantial volume of access requests for channels like BBC1 or ITV1. These CDNs are likely to be privately owned by Internet Service Providers (ISPs), with little control by broadcasters in adverse conditions. In the worst case, such CDNs might be owned by foreign entities without jurisdictional control. In the context of public interest, broadcast FTA assumes critical importance. It serves as a mean to maintain a government's direct communication line with its citizens, counter fake news, and avoid susceptibility to ownership pressure or conflicts of interest from a hostile government or profit-driven 'big-tech' firms. This traditional method, robust and resilient, acts as a safeguard against new distortions, ensuring fair and balanced public communications. Costs would be another issue as they would increase exponentially. Bloomberg published an article explaining that the European Union is weighing a proposal to make technology companies that use the most bandwidth (like Netflix, Alphabet etc) to help pay for the next generation of internet infrastructure[16]. The suggestions are part of a “fair-share” vision from the EU. If policies enforce an exponential growth in bandwidth usage, proposals like this will gain force and could be implemented, increasing costs for content producers, and also leading to

	other discussions like “net neutrality” and ultimately degrading equal access to the internet. Above all, if there was a change to the use of broadcast (to the point it would be eventually switched off), the most dramatic aspect would be that national broadcasters will lose the preferential position that they always benefited. Broadcast Television has a prime position on TV sets, it is not one of thousands of apps available for download in App Stores. If broadcast becomes one of thousands of Apps, the decline of national broadcast organisations is seriously engaged.
Q6. What coordination and planning across the value chain might be necessary to secure good outcomes for audiences and key providers over the long term?	Broadcasting is one of the great inventions of mankind. Giving up on the efficiencies that a natively one-to-many communication infrastructure has is unthinkable, and would constitute a serious step backwards. In this context, it's imperative to recognize the indispensable role of satellite technology. Satellite can effectively serve outlying areas with limited broadband connectivity or DTT coverage, offer linear TV distribution for high-audience and UHD channels, and contribute to freeing up broadband capacity whilst reducing the carbon footprint. It’s also important to highlight that satellite is not only more cost-efficient than streaming but is also more cost-efficient than DTT as well. A study published by Dataxis in 2021[17], indicate that the cost of DTT ranges from €1.6 to €2.9 per household per month in major European countries (being €2.4 in the UK). Satellite however, cost less than €0.9 according to SES analysis using the same parameters than Dataxis. The question now is more about a proper integration of broadcast networks into the ecosystem of IP devices that end users have become accustomed to. In the meantime, it is up to broadcast networks (which have remained unchanged for too long) to evolve, and to use the same protocols that are being used on the internet. This change requires clear and determined planning. TV networks must collaborate with technical infrastructure providers, federate their efforts, and either partner with them, or maintain their

	independent television distribution platforms. This strategy enables them to assert ownership over their signals from inception to the final touchpoint with the end-user. This is particularly true for Public Service Broadcasters (PSBs), who plays a vital role in delivering high-quality news, local programming, and fostering inclusivity. In a content landscape shaped by global capital and vulnerable to ongoing geopolitical threats, this approach empowers organizations to maintain control over their destiny amidst the unpredictability of the industry. International technical standardization, exemplified by consortia like DVB, is pivotal in providing the standards necessary for functional and economically implementable broadcasting solutions. National broadcasting is a sensitive domain, demanding careful thought when contemplating any potential alterations. Broadcasting stands as a cornerstone in cultivating well-informed, prosperous, and democratic societies. Prioritizing the essential task of delivering objective and independent information becomes critical, especially in the face of rising disinformation fuelled by the growing impact of influential social broadband networks. Broadcasting inherently embodies an extremely efficient and sustainable mass infrastructure. Therefore, every measure should be implemented to safeguard and preserve its crucial role in disseminating information and fostering societal well-being.

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Sources

1- Research partner: GFK, an NielsenIQ company
Sample size: 5,055 people, including people from all state regions (nationwide representative)
Research methodology: CAWI – computer assisted web interview
Average interview length: 4 minutes, total 38 questions
Survey timeline: 18-Nov-2022 to 30-Dec-2022

2- Nielsen, State of Play 2023 - 2023-SOP-ENG-final.pdf (nielsen.com)

3- Horowitz, STATE OF MEDIA, ENTERTAINMENT & TECH: VIEWING BEHAVIORS
State of Media, Entertainment & Tech: Viewing Behaviors - Horowitz Research

4- SES internal analysis based on BBC TV schedule available at www.bbc.co.uk

5- SES internal analysis based on TV networks websites in Brazil

6- PirateBay vs Netflix business case in early 2010, suggesting a strong adoption of piracy users to paid Netflix subscriptions when prices were more attractive

7- Streaming subscriptions in decline as UK households cut budgets | Netflix | The Guardian

8- Deloitte UK: 1 in 4 share SVoD costs | Advanced Television (advanced-television.com)

9- Research: Consumers cutting streaming services to save money | Advanced Television (advanced-television.com)

10- NPAW – 2023 state of streaming advertising
2023 State of Streaming Advertising & Analytics (npaw.com)

11- https://www.kedglobal.com/electronics/newsView/ked202308010010
https://blog.son-video.com/en/2023/09/tv-sales-a-global-trend-towards-larger-screens/

12- More Disney stockholders sue over Disney+ | Advanced Television (advanced-television.com)

13- Streaming service price increases: the latest on Netflix, Disney Plus, Max, Hulu, and more - The Verge
Why All Major Streaming Services Have Raised Prices This Year (variety.com)

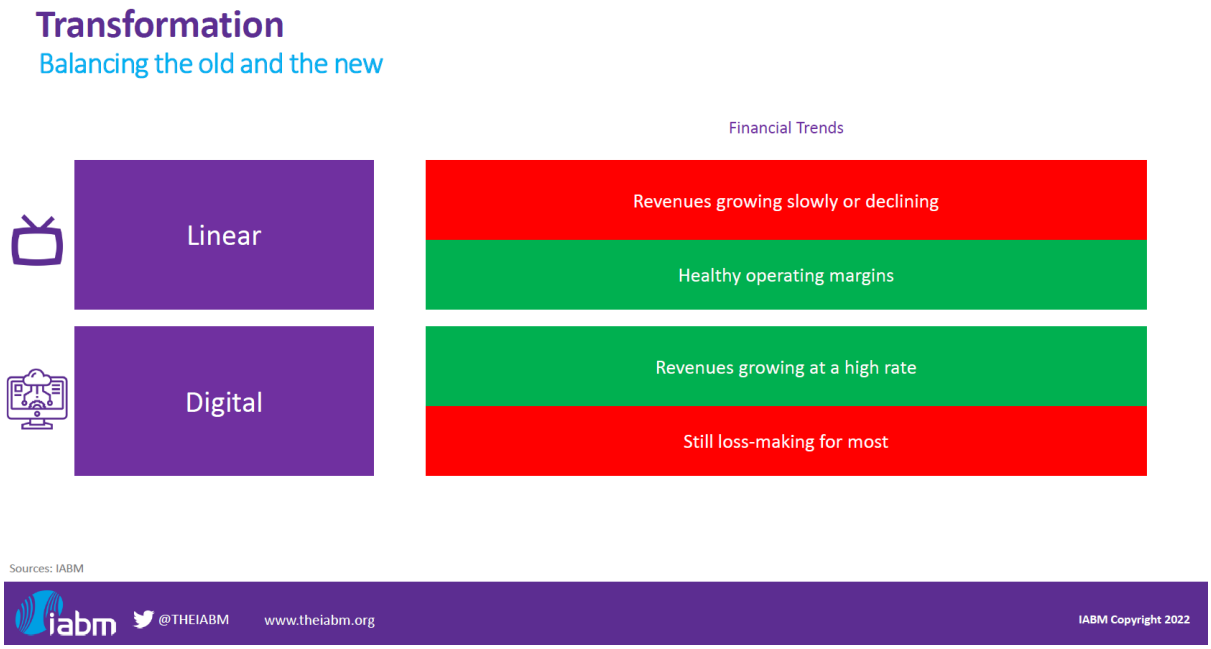
14- US streaming's revenue loss to piracy to exceed $113BN by 2027 | Media Analysis | Business | News | Rapid TV News

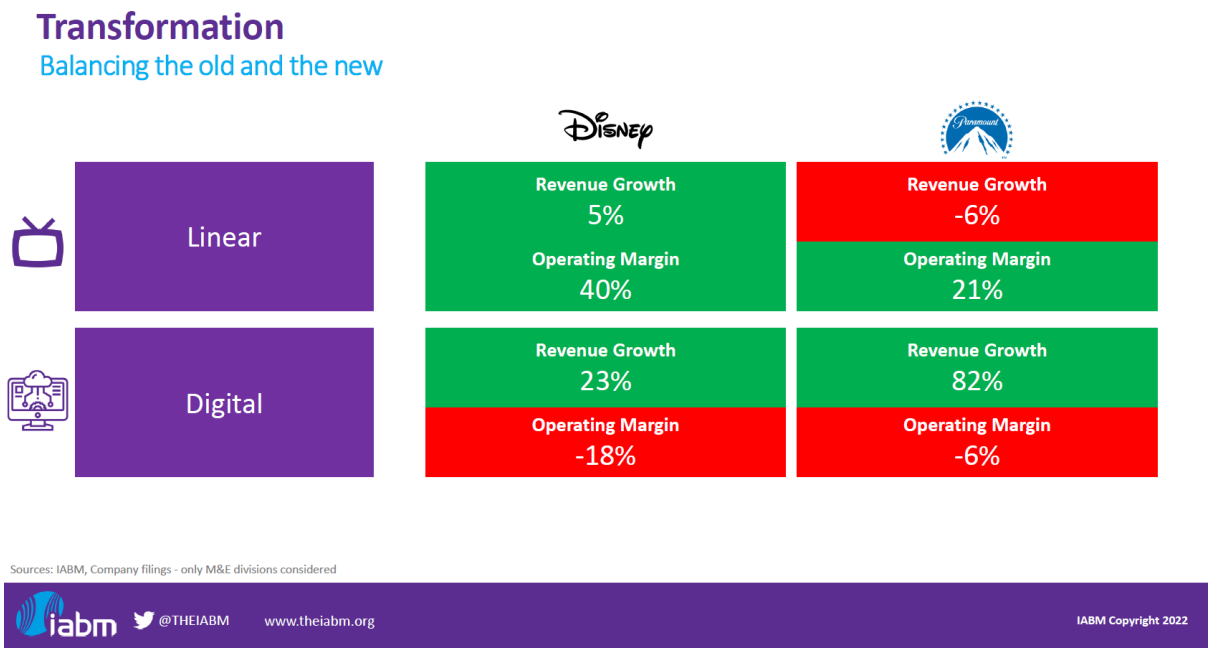
15- https://dvb.org/?standard=native-ip-broadcasting

16- EU may make data-heavy streamers pay for telecom upgrades | Luxembourg Times (luxtimes.lu)

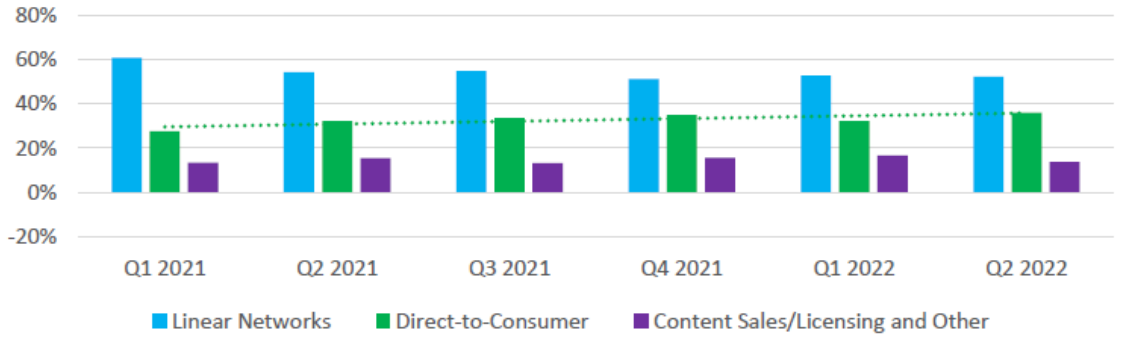
17- https://dataxis.com/researches-highlights/362293/terrestrial-broadcast-network-infrastructures-in-europe-still-solid-in-four-countries/

Appendix 1

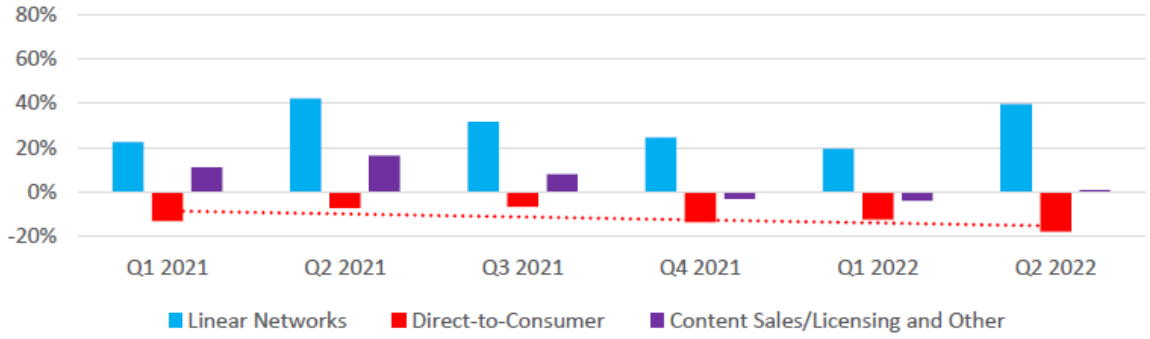




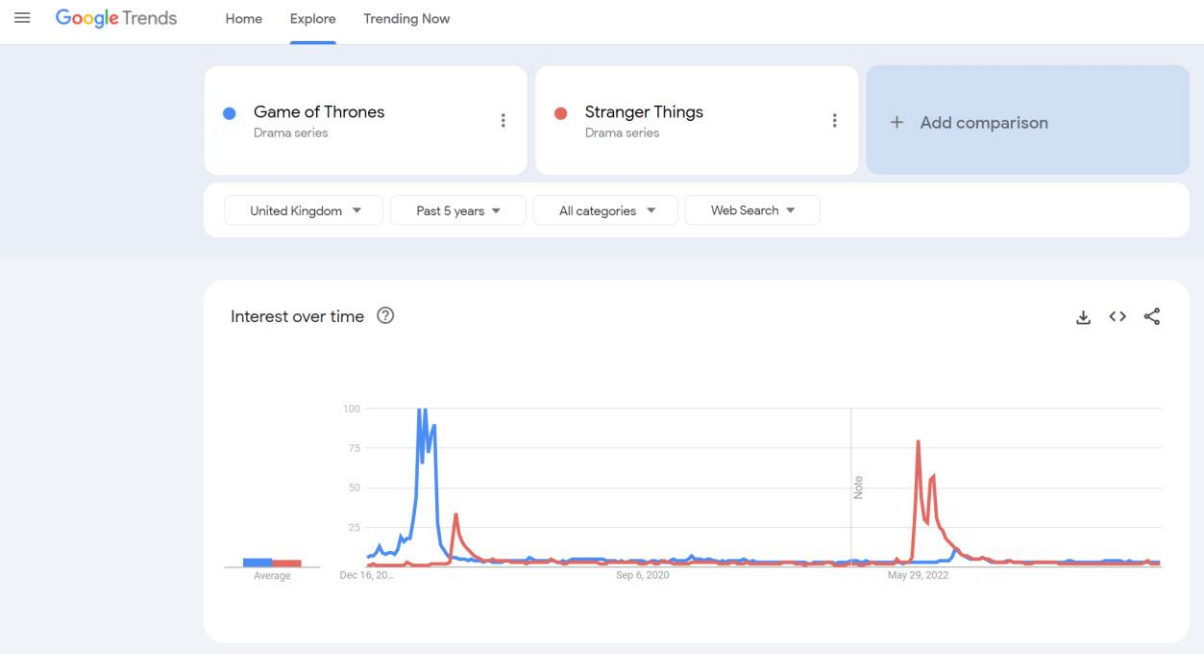
Revenue Shares at Disney M&E Division



Operating Margin at Disney M&E Division



Appendix 2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Home
Explore
Trending Now
Game of Thrones
Drama series
Stranger Things
Drama series
Add comparison
United Kingdom
Past 5 years
All categories
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100
75
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25
Note
Average
Dec 16, 20...
Sep 6, 2020
May 29, 2022