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LG Response to Ofcom Call for Evidence: Future of TV Distribution

December 2023

[redacted]

Summary

LG welcomes the opportunity to further contribute to the ongoing evolution of the UK's TV and media industry. LG has also contributed to the techUK response and we fully endorse that document in addition to the comments below.

Wider Context

Whilst we fully welcome being able to contribute to this important discussion relating to the UK we note that similar activities have been happening elsewhere. Although much larger in scope that just TV distribution we refer to the recent consultation that the European Commission has held; namely its "Exploratory Consultation: The future of the electronic communications sector and its infrastructure"[1].

There are many overlapping issues between that and this consultation (e.g. ensuring that "networks are up to the task in terms of transmission speed, storage capacity, computing power and interoperability"), involving many of the same organisations responsible for delivering IP Television services over the Internet. This is important as IP delivered television also opens up a wealth of opportunity in a global context, including the delivery of non-UK originated content to UK consumers. Synergy and interoperability with non-UK networks will be critical, otherwise UK consumers risk becoming second class citizens in the global media distribution eco system and we encourage Ofcom to remain fully engaged with developments on the continent.

At the highest level as a TV manufacturer it arguably makes very little difference to the device if the signal it receives comes via IP, DTT or any other transport technology. The IP tuner in the TV is equally as reliable as the DTT tuner and an identical high quality viewing experience can be delivered by either mode. However the device is very reliant on the robustness and reliability of the signal it receives and currently there exists significant network differences. A DTT service is nowadays extremely robust, typically in excess of 99.999% reliability, although Bilsdale demonstrated how quickly that can fall

[1] https://digital-strategy.ec.europa.eu/en/consultations/future-electronic-communications-sector-and-its-infrastructure

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when things do go wrong. By comparison IP delivered content frequently experiences issues resulting in losses of service or buffering of services at the end device.

Summary

The key points on the matters incorporated within this consultation are:

- Consumers expect a reliable service for premium FTV content. There are currently many issues that need resolving prior to such a robust equivalent service being delivered over IP.
- It is not clear what an IP equivalent of the current "DTT Regulated FTV platform" will look like, how it will be funded, operated, regulated or presented to consumers, but there are many valuable intrinsic features of the current DTT platform that must be transferred into any future equivalent platform.
- A hybrid platform (DTT + IP) is likely to be necessary for the foreseeable future and it will require significant investment to deliver it at the levels expected by consumers.
    - Cooperation, in addition to competition, in the IP distribution networks will be required to deliver the necessary robust and reliable quality of service.
- Competition between Platforms and EPGs will be essential in order to stimulate innovation, better services for consumers and further investment into the UK media industry.
    - IP FTV TV services cannot solely be delivered by vertically managed and operated platforms and certainly not from just a single source.
    - Consumers will benefit from a competitive free horizontal market offering.
    - In line with the trajectory and intent of the Media Bill, PSBs must make IP linear streams available to all (RTSS) platforms, which includes manufacturers' platforms (independently of any commercial negotiations) and not just to the RTSS platform that the PSBs own and control (i.e. Freely).
- Technically there also needs to be a freely available, open, standardised, specification that manufacturers can build compliant devices without a commercial agreement in order to receive FTV IP services.
    - The only specification that currently exists that meets this requirement is most likely DVB-I and its related DVB specifications (DVB-DASH).

Questions on Future of TV Distribution

Q1. How are audience demands and expectations evolving, and how does that vary for users of different TV platforms and different demographics?

Linear TV

Actual audience trends have been widely reported in numerous other reports, including the annual Ofcom Media Nations reports. These are not disputed and are not further repeated here. Nevertheless an ongoing consideration of this consultation is the premise that linear television viewing will continue into the future, no matter what the technical distribution method used. LG fully agrees with this view. Although consumers are obviously watching more content on demand, in all its forms, we fully expect the linear scheduling of content will endure and remain a critical part of any future landscape. Viewers are very familiar with digital broadcast networks and there are many features that they value highly and wouldn't want to lose in a move to IP.

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[redacted] As such the UK will need to preserve all the good features that currently exist within the linear viewing experience, whilst as seamlessly as possible further integrating on demand and personalised experiences.

Indeed we are also now witnessing the initial stages of large traditional VOD providers starting to develop linear experiences to accompany their well establish VOD offerings. DAZN has a linear channel on satellite and other large VOD platforms have trialled linear offerings. The increasingly rapid growth of FAST offerings are similarly cementing the long term future of linear TV. Further details of the ongoing development of FAST are covered in the recently published DTG report[2], to which LG contributed.

Demographic Profiles of Audiences

Whilst we do not dispute the figures presented in this consultation and numerous other similar reports we feel that the messages and conclusions reached are potentially slanted towards a single outcome narrative and somewhat underplay the overall importance of DTT to consumers.

In 2022 there were 27.3 million TV households in the UK[3]. Thus only 13.6% (3.7m) of households are DTT only. A much larger percentage will be hybrid consumers (exact percentage unknown), getting their content from numerous platforms including DTT. These will include huge numbers of the younger demographics, for whom, although they may get the majority of their content from other sources, the DTT platform still remains a hugely important part of their overall viewing experience. We perceive that some of the most fundamental aspects of the DTT platform that are most valued are its guaranteed robustness, reliability and ease of use (rather than the fact that it is technically DTT per se). Only when such features have been fully replicated in an IP equivalent platform could a switch off of the DTT platform be contemplated.

Boundaries of a (regulated) safe haven Platform

The FTV platform has encompassed a wide range of sufficiently attractive content that consumers want to watch. The PSBs contribute a significant and valuable part of this content offering and combined with a good mix of other diverse content from other sources the DTT offering has become a sufficiently attractive platform for consumers. With DTT the bounds of this offering are limited to the available spectrum, which are managed (and regulated) in a very controlled manner.

However with IP there are no such equivalent boundaries and theoretically no limits to how many services could comprise such a premium IP FTV[4] (regulated) offering. Such a proposition would most likely be considerably larger than the current DTT offering and there will also be more than one such platform provider. The IP FTV offering must certainly not be just a singular PSB owned and managed RTSS platform, as is being evolved through the vertical operated Freely platform. Competition between RTSSs, EPGs and platforms is essential and will invigorate innovation and investment and not result in further laissez-faire attitudes to serving UK consumers that has previously resulted in lack of

[2] https://dtg.org.uk/resource/fast-forward-your-essential-fast-tv-industry-handbook/
[3] https://www.statista.com/statistics/269969/number-of-tv-households-in-the-uk/
[4] "IP FTV" is clearly somewhat an oxymoron term, but in the absence of any clearer alternative, it is used in this document to refer to a service over IP that might become the equivalent of the current DTT FTV platform.

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investment in the UK DTT network. Providing increased access to PSB content can only be of benefit to themselves and consumers. See further review of this in question 2 below.

Audience Protection

The consultation mentions Ofcom's duties related to audience protection. The paradigm and rules developed for audience protection were done so at a time when there were a very limited number of ways of viewing content and generally each consumption device catered for a well-defined and distinct market segments, e.g. Free-to-Air DTH, PayTV Satellite and Cable. Twenty years ago children and toddlers did not have widespread access to content via tablets and mobile phones and it is through these devices that most protection issues actually now occur.

So whilst we recognise and accept that it is reasonable for the TV to be capable of being a safe haven for family friendly content, any rules applied must be proportionate to the wider market context. smartTVs compete with tablets as product purchase choices for the younger generation and a fair and level (regulatory) playing field must exist across the entire media consumption market. Regulations, with the appropriate safeguards, must allow smartTVs to be capable of discovering and presenting all reasonable alternative sources of content and not just protected content.

Audiences are generally a lot more tech savvy than they were 20 years ago and fully aware of the veracity of what they are exposed to. TVs alone cannot be the paragon of virtue and bear all responsibility for "protecting" the consumer when access to much more harmful content is readily available via other means.

So rather than simply impose and potentially strengthen the protection paradigm of 20 years ago into new regulation, there should be a pause for reflection and re-evaluation of the protection regime we need in today's society. To a large extent rules of protection should reflect society rather than control or direct it. This issue warrants further research and debate in order to establish an audience protection paradigm that is appropriate and fit for purpose for the next few decades.

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?

LG currently does not have direct first-hand knowledge of, or access to, precise platform distribution costs, so our comments are limited to high level principles.

Consumer Expectations

There remains even to this day a significant amount of consumer confusion as exactly what it is that the TV licence fee covers and its full scope. Nevertheless many consumers inherently assume that the licence fee includes all covers the costs of providing the DTT network, enabling them to receive their FTV services within their home at no further cost. Given that the average price of broadband[5] is about twice the amount of the licence fee, some consumers may well have expectations that their broadband fees will simply replace and cover their licence fees. Others may expect that the component of their licence fee that currently covers the DTT network transmission costs will disappear in an all IP TV world, resulting in an overall lower licence fee.

[5] https://www.uswitch.com/broadband/studies/broadband-statistics/

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Multiple Network Issues

Naturally it becomes very expensive for the incumbent providers to distribute their content over multiple networks in parallel, when historically they only had to fund a single network. Such transmission costs can only have resulted in an increased amount of money not being available for content production. Statements that we will be all IP by 2030 may well have been significantly founded in a simple desire to eliminate the costs of the "legacy" network.

Broadband TV Economics

The generally accepted position on the comparative economics of DTT vs OTT is represented in the following simplified diagram:

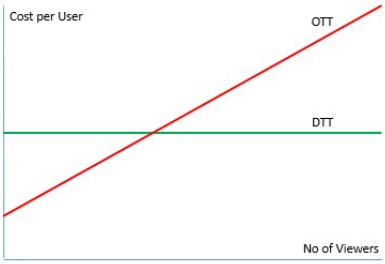

Figure 1: Broadcast Network Costs per User

[redacted]

This, and similar analyses, all plot a crossover point whereby IP becomes more economical compared to DTT. These models assume that current business models and practices will endure, and that over time IP distribution costs will inevitably fall. However, this is not guaranteed and we foresee that such IP distribution costs could significantly change, especially when such networks would be expected, or required, to carry the big-ticket live broadcasts with increased guaranteed levels of service.

Average CDN and network costs could significantly rise if extra headroom is required to be provisioned to cater for big ticket events. The consultation mentions technologies that could be adopted to help, however these will undoubtedly incur further significant costs. We perceive that the only broadcaster that has currently had the wherewithal to develop its own CDN network is the BBC and even that has considerable sizing limits.

Much work also needs to be done improving IP network management and monitoring for reliable DTV broadcasting, see further detail in answer to question 3 below.

The crossover point identified above is only one of many considerations to be taken into account before triggering a full switch over. Availability, robustness and reliability are equally if not more important.

Given all the above, and probably other costs that we are currently unaware of, it is extremely likely that a significant amount of further investment is needed in order to develop a network that is fit for purpose for a regulated FTV IP TV service. Assuming that a (full or partial) DTT spectrum auction would yield a considerable amount of money then a large part of that would probably need to be re-invested

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in the replacement IP media network eco-system. Further government subsidies or incentives may also be required to get all designated IP content delivery networks up to the required "broadcast quality" standard.

Eco System Coordination and Cooperation

Currently the end to end ecosystem for IP media delivery also does not appear to be that well coordinated. We perceive that there is currently a degree of fragmentation across the IP network eco system where competition, rather than cooperation remains more prevalent. We notice that the "CDN Alliance" has recently formed, but are not entirely clear what its objectives and goals are in the media distribution space and how it plans to interact with the rest of the media industry. We would encourage a greater amount of cooperation and transparency across and within the entire end to end eco-system. This would be very similar to market conditions at the outset of Digital TV whereby competitive companies ultimately realised and agreed on the benefits of cooperation.

The Hybrid Future

Predictions that the UK would be "all IP" by 2030 thus have little foundation in the reality of what actually would need to be done and an IP only service at 2030 would certainly not serve the UK consumer well. LG expects that a hybrid model is likely to be a much more realistic scenario for several decades, if not perpetually.

It is certainly true that the UK's DTT platform has in recent years been starved of investment, but that does not mean that it should not be a significantly important broadcast medium for many decades. Other EU countries (e.g. France, Spain, Italy and Poland) fully understand the benefits of their DTT platforms for their audiences. For example they are working towards delivering UHD services on those networks, thus ensuring a solid medium to long term future and ensuring premium quality FTV content remains universally available to all and at the highest quality viewing experience.

LG perceives that the lack of investment in the UK DTT network is demoting the UKs once leading role in TV content distribution to an also ran.

[redacted]

[redacted]

[redacted]

LG believes that as part of a hybrid future the UK DTT network should be brought up to at least the same standards as its near EU neighbours, completely deprecating DVB-T and MPEG-2 SD. Again and in common with other EU countries this may require additional government incentives and subsidies. The successful analogue to digital switchover programme in the UK shows that the UK is perfectly capable of performing such an upgrade, when there is a willingness to do so.

Q3. How do broadband networks and supporting infrastructure need to evolve to support resilient delivery of TV over the internet in the future?

For LG this is a very important aspect of this enquiry. LG's business essentially sits outside of these delivery parts of the eco-system but our devices will undoubtedly rely on networks providing robust and resilient services into the home. We do not have deep expertise concerning the commercial or

technical inter-relationships and responsibilities that exist between the individual players (Network Operators, CDN providers, ISPs etc.) within these networks. Collectively to our devices they are collectively a "black box" which we see as a single network entity, in much the same way as many consumers just refer to the internet as a singular entity, e.g. "the internet has gone down". Our response to this question is focused on the high level principles that should apply to this internet delivery system as a whole.

Broadband Speed

The consultation discusses the growing reach and speed of broadband development in the UK, however this ignores the more important aspects of robustness and reliability. Broadband Speed alone is not the answer and LG has concerns that fibre broadband and the speed that it delivers is being perceived as the "solution to the problem" without properly defining the problem. Many customers already have an internet service that normally provides them with 50-60Mbit/s which is more than sufficient to stream a very good quality TV service. However many such customer still experience frequent buffering and loss of internet signals, significantly many times more than they experience on DTT. The most important issues to be addressed are thus reliability, resilience and availability, which are rarely if ever reported in papers discussing moves to IP distribution.

Home and External IP Networks

For IP, LG views the environment between broadcaster and end device primarily as two distinct separate parts. The first is the external IP environment and the second is the in home IP environment. Both play a critically important part in reliably delivering the content to the input (IP tuner) of the end device. Currently the entire IP network environment is neither sufficiently reliable nor robust enough to replace its DTT or DSAT equivalent. When issues currently occur the consumer generally has little idea as to which part of the distribution system has failed. The external IP environment is further complicated in that it comprises several different organisations and systems. Thus when an issue occurs the consumer has almost no idea who to turn to, to resolve their problem.

Currently all the information we as the end device maker is able to convey to the consumers is as this diagram:

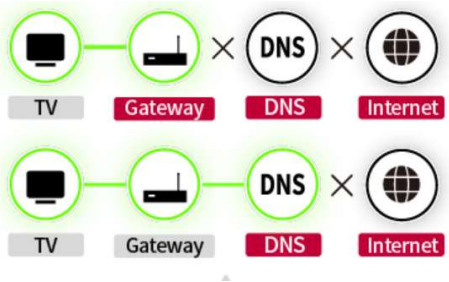

Figure 3 : Current Fault Finding Consumer Display

True IP External Network Internet Chain

Figure 2 in the consultation vastly over simplifies and fails to fully characterise the huge differences between the traditional DTT network and the current Internet. This can be illustrated by the following

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high level diagram produced by the Greening of Streaming[6] to show something much closer to the reality of the telecoms infrastructure that is involved in enabling a live stream to be delivered from source to end device.

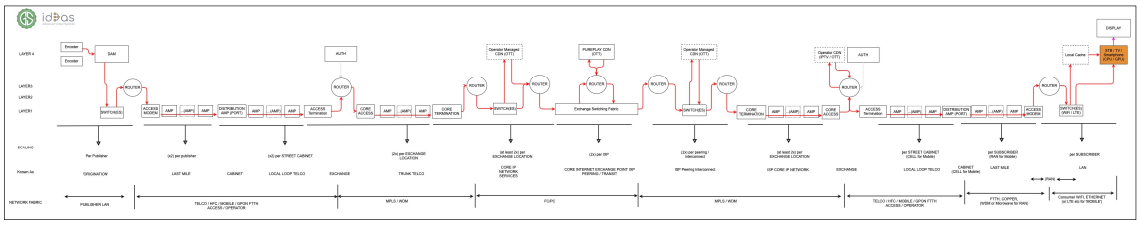

Figure 4 : The Internet telecoms infrastructure

Most of the above replaces the single DTT transmission antenna and the TV aerial on top of the house. Obviously the internet is considerably more complex and for many impossible to know which part has failed when "the internet has gone down".

In order to better manage this network, and the consumer experience there needs to be improvement in service monitoring, which will be enabled by open sharing of relevant performance metadata across the network. This data is not just a unidirectional flow of data back to the source, so that the original content provider can determine what is going wrong, the consumer device needs to be equally well informed such that meaningful information can be presented to the consumer.

We note that the CTA has been very active in this area in recent months and has developed a couple of specifications that may be applicable in this area:

1) CTA-5004 (Common Media Client Data)
2) CTA-5006 (Common Media Server Data)

LG accepts that suggesting, or imposing, specifications, before completely understanding the requirements is putting the cart before the horse, but the above is indicative that other places are starting to address similar issues. LG suggests that an end to end eco-system activity is started to properly explore such issues as part of the whole process of moving over to IP.

Thus a future more helpful consumer fault finding display may be able to look more like this (purely representative – not assigning any individual node allocation):

[6] https://dzceab466r34n.cloudfront.net/Images/ArticleImages/143552-End-to-End-Energy-for-Streaming-ORG.png

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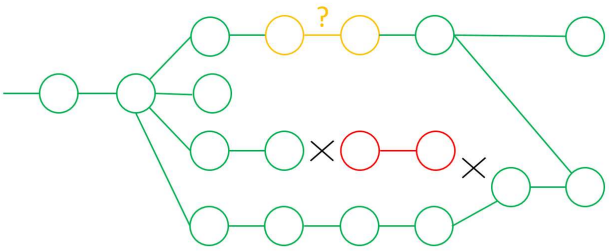

Figure 5 : A Potential Future Consumer Fault Finding Display

Such a system could only be enabled with increased cooperation, transparency and sharing of information and data between the parties involved.

Out of Home Reliability Requirement

Ofcom's current "Television Technical Performance Code"[7] for DTT multiplexes requires that from a regulatory perspective "the minimum standard of availability is 99.8% for viewers served by reference transmitters and 99.0% for other transmitters", equating to 17.5 hours and 3.5 days outage per year respectively. This regulatory requirement does not preclude that commercial contracts between broadcasters and the multiplex service providers may tighten these figures further and in reality much higher figures are achieved in practice. In addition Ofcom require notification of any outages lasting longer than 30 minutes / 2 hours respectively.

These requirements provide the consumer with a large degree of assurance that they will be reliably be able to receive their primary regulated television services and a similar paradigm would need to be in place on IP networks before the current DTT networks could be switched off. We acknowledge this will be considerably more complicated as there will be most likely be multiple players involved, but the principle of minimum requirements of reliability must continue and must be guaranteed.

In Home

Within the home the broadband router and wired/wireless network are both frequently a cause of problems when delivering a reliable service to end devices. True fault finding when either of these fail rarely if ever takes place. Consumers most frequently resort to turning routers off and back on again.

Consumers experience issues with their Wi-Fi networks, especially if there are many other online devices active within the home. Resolving issues or improving the performance of a Wi-Fi network remains something of a black art, similar to the historic adjustment of the TV aerial on top of the TV set. We recognise that some ISPs have made significant efforts to help consumers operate and manage their home networks, improving robustness and reliability. Typical current solutions revolve around flooding a home with signals from a mesh network, but these are not cheap.

A common experience is routers rebooting themselves when they encounter an error condition they cannot successfully manage. This can have been caused by something completely outside the TV viewing part of the system, any IP device in the home has the capability to adversely impact the use of any other device. Diagnosing what has actually caused (and then truly rectifying) an issue is virtually

[7] https://www.ofcom.org.uk/__data/assets/pdf_file/0023/58910/tv_tech_platform_code.pdf

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impossible for the average consumer, arguably even for the above average consumer. The technical fault logs of routers are almost completely indecipherable, except to the fully qualified technical expert and in our experience we have never heard of such an analysis leading to the real elimination of the root cause of a problem.

LG thus perceives that further improvements with in home IP distribution are required. Ideally we hope that this could happen organically without regulatory intervention.

Conformance and Certification

LG has great concerns that the currently excessive demands of conformance and certification will only get worse in an all IP world. The environment that allowed the UK to successfully launch Digital TV was built on mutual agreement of an open technical specification in an independent forum combined with a truly independent testing and certification regime that delivered device and service interoperability to consumers.

This paradigm has been replaced by the PSBs having developed their own (extremely expensive) in house certification approaches. It will not be tenable for there to be multiple such regimes in an IP only world. The PSBs already claim that the costs of certification are a very high burden for them and that they don't have enough resources to serve the market.

Selecting a truly open and horizontal technology platform specification, accompanied by truly independent certification regime (as is emerging in other EU countries) will result in increased certainty for device manufacturers and unburden the PSBs of the costs of operating their own conformance regimes, enabling more money to be diverted to making more of the quality programmes their customers expect. Consumers don't expect the PSBs to be controlling their technology but they do want them to be making more quality programming.

Summary

Much work still needs to be done in managing the consumer experience of IP networks, certainly before they can be given a clean bill of health capable of properly delivering a full FTV IP TV proposition. These issues probably require a separate dedicated project of work, involving the entire eco-system, fully defining the issues, problems and requirements and then ultimately delivering an end product that can be used by all in the delivery of a robust and reliable service to consumers.

Q4. In what ways might different types of 'hybrid' terrestrial and internet services deliver benefits for audiences and what risks may arise?

Personalisation

Interconnectivity enables "personalisation" of services, however the term "personalisation" has been used as a catch all term loosely equating to "consumer benefits". The consumer has frequently had little, if any, say in whether or not such personalisation is a benefit or not. Most free-at-point-of-use platforms require viewers to create a user account and log in in order to access content - a barrier that does not exist for content delivered over DTT. Consumers will have different perspectives on the benefits and disadvantages of personalisation and how it relates to the user experience and privacy considerations. Unless the status quo is changed in future it will probably take an average consumer several hours to set up a new smartTV, re-establishing logons and passwords with every individual service provider. This is not something the end device has any control of, it is a systemic industry

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phenomena that has grown organically without full consideration of the overall negative impact to the consumer, but it really does not have to be like this.

In many ways this is similar to the GDPR "Legitimate Interest" issue. Implementation of GDPR has arguably turned into a consumer nightmare. Every time the consumer visits a new website he is presented with a plethora of confusing privacy options, frequently hidden behind the vaguely defined notion of "legitimate interests". Consumers have requested the possibility to implement a platform wide setting that could be applied to all individual services, however this has been rejected by service providers as they perceive that would be a barrier to their commercial interests. Over time the consumer has arguably become weary of properly assigning his true wishes and has begrudgingly consented to accept all requirements and requests for "personalisation". IP delivered TV hasn't got to this stage yet, hopefully it will not, but the signs are that it could if not properly addressed before it is too late.

With traditional FTV TV consumers also have the ability to watch completely anonymously. If there is to be an IP FTV replacement then equivalent anonymous viewing must be an option for all qualifying content without significant loss of viewing capability.

LG fully supports the concepts of personalisation whilst also recognising that these issues exist. We don't have all the answers, nor even a proposal to advocate, but we do perceive that the issues of consumer service usability, consent, privacy, etc, should be fully defined in a manner that truly reflects the consumers' needs and expectations as well as those of the service providers. As such a more focussed consultation of this aspect is probably required.

Loss of Consumer Features with IP

Since the advent of the VHS (and Betamax) recorder, consumers have had a legitimate right to record their broadcast content. Such a capability has almost universally not been implemented within the IP world. Many would argue that this is replaced by catch up and online VOD, however that does not guarantee that a given viewer's favourite piece of content will always be available. Indeed most content is only available for a defined window. This may be a more preferable situation for many content providers, but it most likely goes against consumers' expectations. This issue will require specific review and consideration in a switch over to IP.

Navigation Paradigm

LG agrees that there is a big risk that the navigation paradigm in an all IP world could become excruciatingly complicated for many consumers to come to terms with.

Ofcom's own research has reported that "Although broadcasters prefer their own apps to be used for IP content consumption, for consumers they are a step backwards and a major barrier to accessing IP-delivered content. They take time to load and for selected content to begin to play – i.e. high latency. Each consumer needs a plethora of apps for all the content they're interested in viewing, replacing a single EPG where they can see their favourite channels in one place."

This and many studies have thus come to the rather obvious conclusion that consumers would undoubtedly prefer to discover and access all the content available to them in a single user interface, however the industry has initially moved in the opposite direction where content is locked inside proprietary walled gardens and the only way to discover content is to visit each in turn. The Ofcom

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Media Nations report demonstrated this concept in its research[8] where it demonstrated a typical viewer spending 18 unsuccessful minutes in one PSB environment before moving on to a second, and then a further 6 minutes in another separate PSB environment, before finally moving on to the environment where an hour's worth of content was watched.

Naturally content providers want to entice consumers in to their walled garden and then prevent them from leaving, however this is certainly not what consumers are demonstrating they want. If this paradigm were to continue we expect that there is a finite limit to how many different walled gardens the eco-system could tolerate and that there would be further application and platform consolidation. Ideally LG would prefer to surface all possible content in a single space and make it significantly more efficient for consumers to arrive at their final content viewing experience.

A key feature, much appreciated by many consumers, of a traditional linear EPG has been the ability to channel surf and/or very quickly change between all/any channels, including by directly entering the known channel number or by quick application of program up/down, or in LG's case by appropriate control of that magic mouse remote control. This is at severe risk of breaking if each and every channel change were to effectively become a deep link into a specific individual application.

A huge part of this issue also relates to access to metadata. LG believes that it is all content providers interests to make their content metadata as freely and widely available as possible. A successful FTV IP platform will only happen if there are no barriers to availability of its metadata.

The DVB-I ecosystem has been designed and built to enable such above paradigms to continue into the future, and these are now being adopted by other EU countries. However a similar approach has been prevented from developing within the UK. The reasons for this remain obfuscated however it is LG's view that such a negative approach is not in the true interests of consumers.

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)?

LG has no specific comments to make concerning radio services, however see below for further other emerging use cases.

Concerning compression, LG has witnessed a very disappointing lack of adoption of more efficient technologies within the UK. As mentioned above other EU countries have been much more proactive on this issue as well as completely switching over their networks to the DVB-T2 transmission standard. The lack of adoption and investment within the UK may well be motivated by a desire to facilitate a move to IP at any cost or justification, without having fully considered all the consequences of doing so.

In other EU countries government and the regulator have also played much more proactive roles in steering the direction of their DTT platforms, ultimately LG believes to the benefit of the consumer, who for example will be able to receive UHD services via DTT.

Concerning new use cases, LG would like to draw Ofcom's attention to the emerging market of in car entertainment. LG in partnership with car manufacturers such as Hyundai have now integrated the same Operating System in our TVs (i.e. WebOS) into the car's entertainment system, thus enabling the

[8] https://www.ofcom.org.uk/__data/assets/pdf_file/0029/265376/media-nations-report-2023.pdf figure 13

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reception of video as well as audio to the travelling consumer[9]. As driverless car systems also emerge such a market use case is set to grow significantly over the next few decades. This is not unique to LG and other TV manufacturers have taken similar steps with a variety of car manufacturers[10]. As such the value of the/a DTT network could be further justified for many decades to come.

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?

For LG it is an absolute imperative that formal coordination will be necessary, including explicit planning, and potentially intervention, by government and regulator. In an ideal world intervention would not be necessary and cooperation and consensus across all industry would be the preferred approach, as was the case when DTG originally delivered its D-Book in the 1990s. However since the advent of "interactivity" and "connectivity" we have witnessed a gradual withdrawal from cooperation and the increased production of proprietary in-house authored specifications and commercial models with very little, if any, real consultation, with confrontation now increasingly having replaced cooperation.

HbbTV Operator Applications are not the answer to the long term IP FTV TV needs of the UK consumer, Op Apps were only ever designed and built to service the enclosed needs of vertical platform models. Solutions based on DVB-I are emerging in mainland Europe and in order to not be a fragmented and isolated enclave, the UK needs to similarly adopt such truly open horizontal specifications with a well formulated roadmap and plan.

Ideally LG does not believes that government or the regulator should directly select or impose specific specifications or standards, but they should have a role in overseeing the choices made and directing the ecosystem towards a solution that meets consumers' requirements.

<end>

[9] https://www.lg.com/global/mobility/press-release/webos-for-automotive-hyundai-genesis-youtube-collaboration
[10] https://xperi.com/blog/bmw-welcomes-xperis-independent-media-platform/