

WHITE  
PAPER

# The Changing Nature of TV

Understanding how streaming video is changing what consumers think of TV.

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## Executive Summary

The nature of television is in a state of transformation. Although delivering video to the viewer is essentially the same, whether by QAM or IP, the shifting nature of access, consumption, and interaction has caused uncertainty within the industry as it tries to answer a central question in light of shifting consumer behaviour: “what is television?” In the past, it was easy to define by both the screen and the programming guide. “Watching TV” meant just that: turning on the television set, wherever it may be in the house, and watching whatever was being broadcast. Rights holders needed broadcasters and cable operators to reach those eyeballs.



But somewhere along the way, consumer excitement about being able to watch TV where they wanted to, on whatever device (fuelled by new and innovative companies like Netflix), collided with a primary technology trend in the broadcast world: replacing legacy equipment with IP-based gear. As broadcasters digitised and IP-enabled video content that was traditionally locked into QAM-based delivery, they could suddenly deliver that content through a host of different channels (not to mention saving money on getting the content from post-production to affiliates). The result? The traditional model of viewing behaviour was turned upside down. Consumers began to expect from their cable or television providers a way to watch that linear content in the same way Netflix, Hulu and others were providing their video content. And the television set? It became just another screen in the universe of consumer screens that could display any kind of video content to which the consumer subscribed, whether it be from the cable operator, the broadcaster, or from a new, internet-based service.

This shift in how video can be consumed has not only caused significant upheaval in the TV experience, it has had other consequences as well. As the technological availability of direct-to-consumer video services at scale became a reality (again, exemplified by Netflix), rights holders realised that they could forge a direct relationship with their viewers. They were no longer dependent upon distribution through cable and satellite providers. So they began to break rank away from the linear-model of service providers to the on-demand, binge-watching model consumers were looking for by building over-the-top (OTT) services of their own and pulling the content they had licensed to other platforms (like Netflix). This has become especially problematic with the consolidation of major rights holders: Disney's acquisition of Marvel, Star Wars, ABC, and FOX; AT&T's acquisition of DirecTV and TimeWarner (which owned a slew of rights holders including HBO and WarnerBros); Comcast's acquisition of NBCUniversal and Sky; and the CBS and Viacom merger (which have a tremendous number of properties between the two including streaming-only titles like StarTrek: Discovery).

The result of all this transformation is a marketplace littered with OTT services, each representing its own content. And for the consumer, that's potentially problematic. First, because before, all of the "subscriptions" for each content owner was managed by the cable or satellite provider. The consumer received one bill and could access all of their content from a single screen. Now? They have to manage each and every relationship with a rights holder individually and they must access each content brand through an individual experience, such as an app on the phone, computer, or television set.

So what is “TV?” At the present, the answer to that is very ambiguous. The research featured in this report illustrates that consumers see everything, from the cable operator to the OTT provider, as “TV.” They like the idea of convenience but still watch a tremendous amount of video, especially longer form, on a television set in the home. But more important than one, specific definition, is to understand that today, consumers define the TV experience. For the better part of a century, rights holders, broadcasters, and cable/satellite operators have told the world what TV is. Not anymore. With consumers in the driving seat of defining the television experience, everyone in the industry, from incumbent to innovative start-ups, must ensure they remain technologically and architecturally flexible to be fast and nimble enough to keep up with evolving consumer expectations: personalisation, interactivity, and social integration to name a few of the features offered in the new world of IP-delivered video.

To provide the kind of TV experience consumers are redefining, broadcasters must first complete their migration to IP. As they go direct-to-consumer, they won't be able to provide the exciting new kinds of features consumers expect by holding onto the old way of delivery. They also won't be able to provide viewers their content wherever they want, on whatever device. Of course, monetisation of these new services is a serious concern as well. If viewers are watching the same video available through traditional broadcast over an IP-based service, the advertising revenue might not follow (because of contractual reasons) giving no incentive to the broadcaster or operator to invest in their own OTT platforms. And, yet, even if the ad revenue did follow, the research in this report shows a world where consumers might want to opt-out by paying a higher subscription price. A balance must be struck then, in this new definition of TV, between the need to monetise with advertising and the consumer desire for fewer interruptions. But without that investment into OTT services now, rights holders, broadcasters, and network operators may fall behind in keeping up with the changing TV landscape. They may find themselves failing to retain or gain subscribers against rival services.

As consumers demonstrate an increasing desire to watch the content they normally access from their television sets in their homes from different devices like mobile phones and tablets when they are out and about (which are either connected to inconsistent Wi-Fi or mobile networks), video distributors must keep pace. They must invest in the technologies that will provide for a scalable, reliable, and consistent experience even if the conditions of delivery are highly variable. Some of those technologies might include content-aware encoding, better video compression (H265, VVC, etc), universal packaging (CMAF), and, of course, security.

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## Methodology

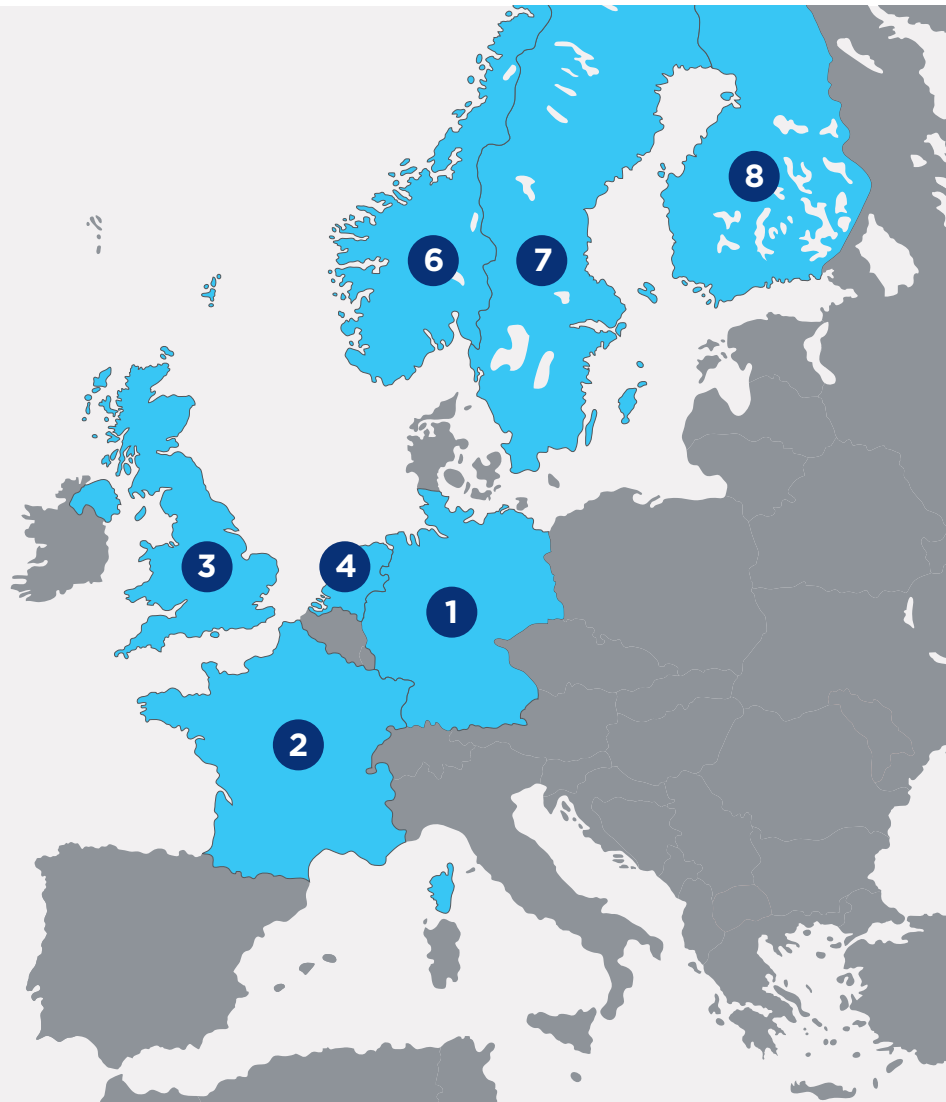
This survey was fielded by a third-party company with access to domestic respondents in eight countries—U.K., France, Germany, Netherlands, Sweden, Finland, Norway, Iceland. The survey includes respondents only in those eight countries. Based on the sample size, the confidence interval is approximately 2.8 with a 95 percent confidence level or 3.7 with a 99 percent confidence level.

## Geographic Distribution of Respondents

The following table represents how many respondents in each surveyed country are included in this report.

Note: respondent geographies are not called out specifically in any analysis of survey results.

Country	Respondents
1. Germany	<b>1,676</b>
2. France	<b>1,668</b>
3. U.K.	<b>1,195</b>
4. Netherlands	<b>831</b>
5. Iceland	<b>196</b>
6. Norway	<b>158</b>
7. Sweden	<b>149</b>
8. Finland	<b>149</b>
<b>TOTAL</b>	<b>6,022</b>



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# High-Level Findings

This research into consumer perceptions of TV, some of their streaming habits, and how they might behave in the future with streaming services revealed some interesting insights that we have broken down into categories.

In these categories, we sometimes explore additional insights with respect to age and demographics.

## The Changing Definition of “TV”

- Consumers understand that television is changing.
- Despite the growth of streaming, the core experience of watching video on a large screen in the home still dominates the experience.
- Consumers antipathy towards ads and other video interruptions hasn't changed, but streaming provides an out: ad-free subscriptions.
- Core television features are waning, like the DVR, as consumers access content they would normally record from one or more streaming services.

## The New World of Streaming

- The desire for video content continues to grow, but is tempered by a fragmented market with too many players.
- Consumers want to share their subscriptions with friends and family...and are willing to pay for the opportunity to do so.
- Whatever is happening in streaming is good news for rights holders.

## Mobility and Video

- Expectations of video streaming quality diminish when watching on mobile devices.

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# The Changing Definition of TV

When technologies cause transformation within an industry or consumer behaviour, it often requires revised definitions of what it means to do those activities as well. Consider the introduction of the microwave. Up until then, consumers could tell you exactly what it meant to “cook” something. But then the technology came into the market that challenged the definition of “cooking” by providing consumers with an easier method than lighting stoves or turning on ovens to ensure food was cooked. Think about steaming vegetables. You can put a colander with the vegetables in a pot of boiling water or you can put the vegetables in a microwave-safe glass dish with a little bit of water and cover it. The microwave essentially posed the question, “what does it mean to cook food?”

A similar process is happening with television today. The advent of streaming technologies has decoupled TV from the traditional definition, which is sitting in front of a television set and watching what is available to watch according to a pre-set schedule, and posed a similar question, “what does it mean to watch TV?” Whether it’s binge-watching an entire season of shows in one sitting (rather than by a predetermined schedule), watching previous episodic content according to any schedule (via on-demand offerings), or consuming content from non-traditional devices (like a mobile phone), the answer to that question has yet to be answered providing ample opportunity for rights holders and video distributors to experiment with the TV experience so long as basics are met: the availability of content consumers want to watch provided through a consistent, reliable, and scalable platform.





## TV 2.0 Profiles

As television changes, new consumer behaviours will emerge that allow the categorisation of viewers into buckets or types which ultimately provide a backdrop against which video distributors or rights holders can provide a more personalised viewing experience. We have identified three primary types:

- TV Traditionalists
- Convenience Seekers
- Demanding Streamers

Note that these categorisations are illustrative only. Many consumers may be a little of one category and a little of another. They are really meant to expose certain behaviour types that consumers exhibit as TV evolves into a new iteration.

### TV Traditionalists

These viewers are all about the big screen. They might subscribe to multiple streaming services but they hardly ever watch them on anything but devices connected to their television sets. For them, television has been, and will always remain, a social experience. They don't see a difference between video provided through a cable operator or a streaming service and, as such, probably have expectations of streaming quality and reliability similar to traditional broadcast. They are probably far less likely to experiment with innovative features unless there is clear value and don't often take advantage of new features that become available. They simply want to "watch TV."

### Convenience Seekers

These viewers epitomise the OTT marketing language of "anytime, anywhere access." They want to be able to watch all of their video, whether it's provided by a cable operator or an OTT service, on whatever device they happen to be using. And they are willing to trade off broadcast characteristics, like quality, for the convenience of consumption. Although they aren't looking for shiny, new features, they are hyper aware of how the OTT services work through their various apps and have mastered getting the most out of each subscription.

### Demanding Streamers

These viewers enjoy streaming. They often subscribe to more than one service, but they know, as subscribers, they are in the driver's seat now. If one service doesn't meet their needs, they'll find content on another. But it's not just about content, either. It's about the whole streaming experience. From ads to password sharing, these viewers demand that the service conform to their needs. Liberated from the shackles of traditional broadcast, they are ready to tell the streaming service providers exactly the kind of experience they want.

## Consumer Awareness Provides Opportunity and Challenges

We asked consumers a simple question, “Complete the following statement: ‘TV...’” and provided them a number of potential responses such as:

- “is only displayed on a television set.”
- “is only offered by a cable or satellite provider.”
- “is any video I watch on any device.”
- “is delivered over the internet.”
- “requires an app on my phone or tablet to watch.”
- “happens according to a specific schedule.”
- “is any streaming service I subscribe to.”

The idea behind the question was to understand if consumers had a different definition of television (ultimately beginning to answer that question, “what does it mean to watch television”) in light of the availability of streaming platforms.

As Figure 1 shows, there is clearly not a consensus on what TV is any more.

### F1

Question #3  
“Complete the following  
statement: ‘TV...’”

	Agree completely	Agree somewhat	Don't agree at all	Total	Weighted Average
<b>is only displayed on a television se</b>	<b>33.63%</b> 1,343	<b>36.41%</b> 1,454	<b>29.95%</b> 1,196	3,993	1.96
<b>is only offered by a cable or satellite provider</b>	<b>33.16%</b> 1,328	<b>34.33%</b> 1,375	<b>32.51%</b> 1,302	4,005	1.99
<b>is any video I watch on any device</b>	<b>41.52%</b> 1,658	<b>40.77%</b> 1,628	<b>17.71%</b> 707	3,993	1.76
<b>is delivered over the internet</b>	<b>45.82%</b> 1,830	<b>43.34%</b> 1,731	<b>10.84%</b> 433	3,994	1.65
<b>requires an app on my phone or tablet to watch</b>	<b>36.69%</b> 1,466	<b>38.09%</b> 1,522	<b>25.23%</b> 1,008	3,996	1.89
<b>happens according to a specific schedule</b>	<b>34.57%</b> 1,379	<b>42.47%</b> 1,694	<b>22.96%</b> 916	3,989	1.88
<b>is any streaming service I subscribe to</b>	<b>44.14%</b> 1,765	<b>42.39%</b> 1,695	<b>13.48%</b> 539	3,999	1.69

This question allowed respondents to answer each statement independently allowing us to understand the sincerity of their answers. For example, if someone answered “I completely agree” to the first statement that TV is only displayed on a television set, it could be assumed that they would also answer “don’t agree at all” to the choice of “requires an app on my phone or tablet to watch.” And yet, that is exactly not what happened as illustrated in Figure 2.

## F2

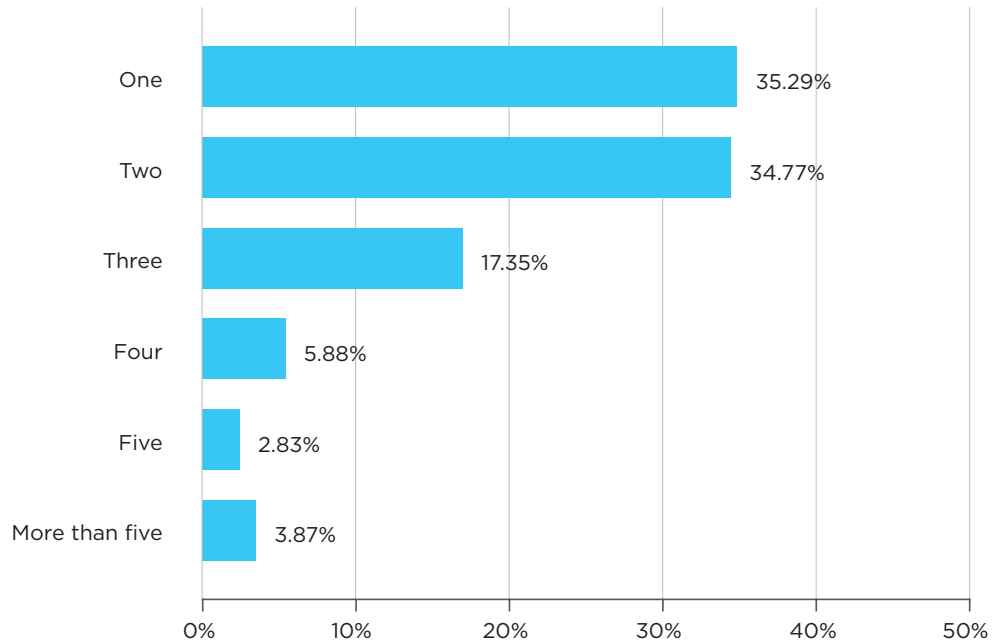
Question #3  
 “Complete the following statement: ‘TV...’”  
 (filtered by respondent answering “agree completely” to the first statement)

	<b>Agree completely</b>	<b>Agree somewhat</b>	<b>Don't agree at all</b>	<b>Total</b>	<b>Weighted Average</b>
<b>is only displayed on a television set</b>	<b>100.00%</b> 1,343	<b>0.00 %</b> 0	<b>0.00 %</b> 0	1,343	1.00
<b>is only offered by a cable or satellite provider</b>	<b>61.99%</b> 830	<b>25.69%</b> 344	<b>12.32%</b> 165	1,339	1.50
<b>is any video I watch on any device</b>	<b>62.37%</b> 832	<b>26.24%</b> 350	<b>11.39%</b> 152	1,334	1.49
<b>is delivered over the internet</b>	<b>66.27%</b> 884	<b>26.76%</b> 357	<b>6.97%</b> 93	1,334	1.41
<b>requires an app on my phone or tablet to watch</b>	<b>62.04%</b> 827	<b>23.48%</b> 313	<b>14.48%</b> 193	1,333	1.52
<b>happens according to a specific schedule</b>	<b>63.67%</b> 850	<b>28.16%</b> 376	<b>8.16%</b> 109	1,335	1.44
<b>is any streaming service I subscribe to</b>	<b>65.05%</b> 871	<b>27.11%</b> 363	<b>7.84%</b> 105	1,339	1.43

In short, what this question illustrates is that consumers have no consensus on what it means to watch TV today. It can be assumed that many of those respondents who answered “agree completely” to the first statement also subscribe, independently of their cable or satellite service, to one or more streaming services (as illustrated by Figure 3).

### F3

Question #7  
“To how many  
Internet-based video  
services do you  
currently subscribe?”  
(filtered by respondent  
answering “agree  
completely” to the  
first statement in  
Question #3)



This provides both opportunity and pause. On the opportunity side, because the definition is still in flux, content owners and distributors can continue to experiment with the experience. They can provide video integration with third-party services (like social networks). They can personalise the video experience using advanced technology, like AI, and access to viewership data. But there should also be caution.

Based on the data in Figure 1 and the discrepancy in answers on different statements, there are many who are confused about what TV is. It means both watching streaming video on a television set in the home and content provided by an operator’s TV-Everywhere offering on a mobile phone while out of the house. As such, video distributors must ensure that base level needs for high quality, consistency, and reliability are met first. It can be exciting to invent new experiences using innovative technologies but, at this point in the transforming definition of television, doing so at the expense of a basic level of service that allows viewers to consume content is probably detrimental to long-term success.

It is also interesting to note, though, that these answers change when viewed with a demographic lens.

## F4

Question #3  
 “Complete the following statement: ‘TV...’” (ages 45-60)

	Agree completely	Agree somewhat	Don't agree at all	Total	Weighted Average
<b>is only displayed on a television set</b>	<b>29.07%</b> 209	<b>36.02 %</b> 259	<b>34.91 %</b> 251	719	2.06
<b>is only offered by a cable or satellite provider</b>	<b>30.97%</b> 223	<b>32.50%</b> 234	<b>36.53%</b> 263	720	2.06
<b>is any video I watch on any device</b>	<b>41.17%</b> 296	<b>44.23%</b> 318	<b>14.60%</b> 105	719	1.73
<b>is delivered over the internet</b>	<b>49.51%</b> 357	<b>41.19%</b> 297	<b>9.29%</b> 67	721	1.60
<b>requires an app on my phone or tablet to watch</b>	<b>36.02%</b> 259	<b>37.41%</b> 269	<b>26.56%</b> 191	719	1.91
<b>happens according to a specific schedule</b>	<b>29.09%</b> 208	<b>42.947%</b> 307	<b>27.97%</b> 200	715	1.99
<b>is any streaming service I subscribe to</b>	<b>41.61%</b> 300	<b>46.46%</b> 335	<b>11.93%</b> 86	721	1.70

As evidenced in Figure 2, GenX and early Baby Boomers feel differently. To them, TV is even less defined by the television set (65.09% of respondents answering “agree completely” or “agree somewhat” versus 70.04% in the general respondent pool) and more by the availability of video content over the Internet (49.51% of respondents answering “agree completely” versus 45.82% in the general respondent pool). This may seem counterintuitive but many younger people (ages 18-29) might not have grown up with cable providers and pay-TV subscriptions so it is more difficult for them to make a distinction as it relates to completing the statement posed in this question. But, as indicated by their response percentage to “agree completely” (43.93%) for the end of the statement, “is any streaming service I subscribe to”, their definition of TV clearly mirrors the sentiment of other demographics who may be more aware of a changing definition.

## TV is Changing (And Remaining the Same)

Watching television has always been a social activity. Viewers sit down on the sofa with friends and family, grab the remote, and share in the experience of watching what comes on<sup>1</sup>. And yet streaming services, and the growth of streaming, have relied on the “anytime, anywhere, any device” marketing chant, banking on the idea that consumers are more interested in watching video on their smartphones when out and about than at home. As Figure 5 illustrates below, that is not necessarily the case.

### F5

Question #4  
“Indicate how often you watch streaming video on each kind of device.”

	Multiple times each day	Once per day	Once every few days	Once a week	*Very infrequently	Never	Total	Weighted Average
<b>On a television set in my home</b> (either through a connected device, like a Roku, or an app on the TV)	<b>34.93%</b> 1,402	<b>25.39 %</b> 1,019	<b>19.13 %</b> 768	<b>8.42%</b> 338	<b>5.51%</b> 221	<b>6.63%</b> 266	4,014	2.44
<b>Through an app on my smartphone</b>	<b>30.21%</b> 1,209	<b>20.29%</b> 812	<b>18.49%</b> 740	<b>9.82%</b> 393	<b>10.97%</b> 439	<b>10.22%</b> 409	4,002	2.82
<b>Through an app on my tablet</b>	<b>22.44%</b> 896	<b>19.29%</b> 770	<b>18.86%</b> 753	<b>10.25%</b> 409	<b>10.95%</b> 437	<b>18.21%</b> 727	3,992	3.23
<b>Through an app or the browser on my computer</b> (desktop/laptop)	<b>26.69%</b> 1,071	<b>21.26%</b> 853	<b>20.79%</b> 834	<b>10.72%</b> 430	<b>11.24%</b> 451	<b>9.30%</b> 373	4,012	2.86

Although respondents did indicate that they watched video through an app on their smartphone frequently (47.95% answered watching at least once per day), it is significantly less when compared to how often they watch on a television set (60.32% answered at least once per day). This data should remind distributors and rights holders about the importance of a centralised, social environment where video content can be consumed. And yet we should also pause in making such an assertion as the very nature of video content is changing. Short-form content, sub 5-minute, is fast gaining popularity. Whether it’s loaded into YouTube, Facebook, or some other platform like Twitter, video clips (often user generated) are quickly taking a primary role within the pantheon of consumer viewing habits as illustrated in Figure 4.

## F6

Question #5  
 "How often do you  
 watch video of  
 different lengths?"

	<b>Very frequently (such as multiple times a day)</b>	<b>Somewhat frequently (maybe once or twice a day)</b>	<b>Occasionally (maybe once every day or so)</b>	<b>Not very frequently (maybe once a week)</b>	<b>I dont like watching this length of video</b>	<b>Total</b>	<b>Weighted Average</b>
<b>1-hour or longer episodes, shows, or movies</b>	<b>29.45%</b> 1,184	<b>30.69%</b> 1,234	<b>24.45%</b> 983	<b>10.94%</b> 440	<b>4.48%</b> 180	4,021	2.3
<b>30-minute episodes or shows</b>	<b>30.64%</b> 1,232	<b>31.39%</b> 1,262	<b>23.08%</b> 928	<b>10.27%</b> 413	<b>4.63%</b> 186	4,021	2.27
<b>10-15 minute clips</b>	<b>28.13%</b> 1,131	<b>28.15%</b> 1,132	<b>22.13%</b> 890	<b>14.03%</b> 564	<b>7.56%</b> 304	4,021	2.45
<b>5-10 minute clips</b>	<b>31.58%</b> 1,270	<b>27.48%</b> 1,105	<b>20.69%</b> 832	<b>12.51%</b> 503	<b>7.73%</b> 311	4,021	2.37
<b>Less than 5 minute clips</b>	<b>34.34%</b> 1,381	<b>24.87%</b> 1,000	<b>19.92%</b> 801	<b>12.29%</b> 494	<b>8.58%</b> 345	4,021	2.36

The dominant video length indicated by consumers as "most frequently-watched" is clips less than five minutes (34.34%). And yet if people are watching short-form video frequently, it must be happening during work hours as well which, consequently, implies that these shorter videos are not being watched on the television screen but somewhere else (most likely a mobile phone). So although the survey data (Figure 5) seems to support that consumers still see television as a social or shared activity, the extent of that socialisation might be dependent upon the type of video being watched.

This implies that video distributors need to think hard about the kind of devices being primarily employed to watch their content. If a distributor specialises in long-form or episodic content, they should take special note of the viewing experience through their app on a connected device so as to capitalise on big screen nuances versus short-form content specialists that should focus on the mobile device.

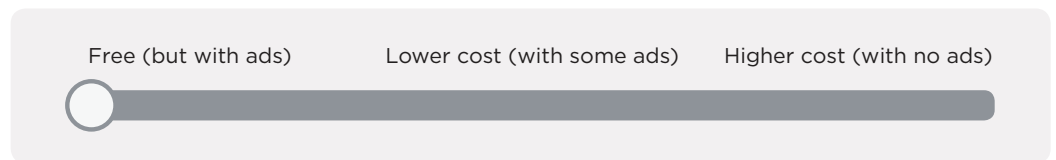
## Navigating the Landscape of Interruptions

When asked, consumers will often tell you they loathe TV advertising<sup>2</sup>. The traditional, interruptive ad-pod model of broadcast television during episodic content forced viewers to either watch the advertisements while waiting for the content to resume, or get up and walk away thereby disrupting what otherwise might have been time spent relaxing. Video recording, and later DVR technology, provided consumers an out but the content was no longer in real-time. Consider an episode that airs at a specific time only one day of the week.

As TV is a social experience (we like to share our viewing experiences with others<sup>3</sup>), asking consumers to forgo the camaraderie of co-viewing to bypass advertising isn't tenable. The video-on-demand model which early streaming providers such as Netflix pioneered, was a step in the right direction. This model allowed everyone to watch an episode simultaneously again (so long as they all agreed on the time to watch it). And, thankfully, there isn't much of a play for advertising in on-demand videos (Netflix still remains ad free). Yet as video streaming has pushed into live linear content, consumers are once again forced to sit through advertising even while they may also be required to pay for a subscription to watch the content<sup>4</sup>. What makes this new situation worse than traditional broadcast is the limited inventory for streaming video advertising. Because advertisers are still weighing their options with regards to shifting spend from traditional TV to streaming video, they are trading carefully<sup>5</sup>. As a result, the inventory is low and consumers may see the same ad showing multiple times within a single stream and across multiple providers.

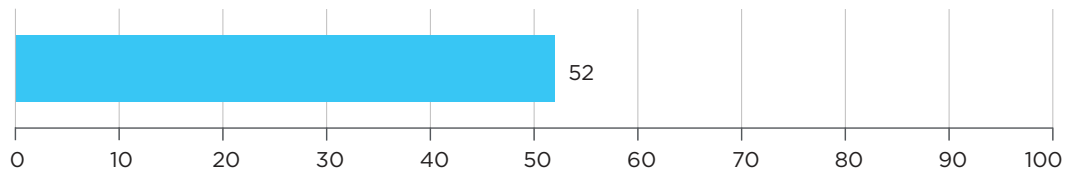
### F7

Question #9  
"Use the slider to indicate how you would prefer to subscribe to streaming services."  
(Question presentation)



### F8

Question #9  
"Use the slider to indicate how you would prefer to subscribe to streaming services."  
(Question presentation)



And therein lies an opportunity. As illustrated in Figures 7 and 8 above, consumers are willing to pay a higher subscription fee for the removal of advertising from their streaming video.





In Question 9 (see previous page), we invited consumers to slide a ball along a continuum that represented their preference for streaming service subscriptions with respect to advertising. On one end was a free subscription supported entirely by advertising (like PlutoTV) and on the other was a more expensive subscription that included no advertising (some services like Hulu offer this option). Respondents were instructed to leave the ball anywhere on the slider. Figure 8 illustrates where consumer preferences lay. In short order, there was no place for an advertising-supported free subscription. Yes, services like PlutoTV may have garnered a million or more subscribers but that is a very small percentage of the total addressable market. In fact, we could even dub those ad-supported free TV subscribers as “outliers”.

What seems more prevalent is that consumers are willing to pay for a streaming service that includes some ads and, in some cases, pay even more for a service that removes advertising completely (note that the average is 52 representing just a slight lean towards the end of the continuum favouring no ads<sup>6</sup>). Only time will tell if the preference remains more towards the middle or continues to move towards the far right end of the continuum.

Regardless, consumers clearly want less advertising in their video than they are currently getting. It is only logical to infer that a free, ad-supported streaming service is probably analogous to traditional TV in terms of advertising frequency. As such, consumers paying for a streaming service expect there to be fewer adverts. This presents both an opportunity and a challenge for video distributors. Video advertising revenue can be significant and the idea of removing it completely, in favour of higher subscription revenue, is probably not feasible. As such, advertising is most likely here to stay in some form or another (again, Hulu’s use of advertising during pause events is a very interesting approach).

Streaming providers must strike a balance between asking the consumer to pay for access to content and interrupting that content with advertising. In a sense, the streaming provider could be construed as “double dipping,” making money off both consumer and advertiser. But internetbased platforms have a leg up on traditional broadcast TV advertising regarding advertisement delivery: data.

Streaming providers can collect a tremendous amount of data about their viewer’s watching habits. That data can then be employed to personalise advertising delivery and make it much more targeted<sup>7</sup> and effective. In doing so, it’s possible for the streaming provider to strike a balance between subscription prices, frequency of advertising, and advertising revenue. By delivering targeted advertising at a higher CPM, they can make the same revenue (or more) with less ad volume and still charge for subscriptions<sup>8</sup>.

**What seems more prevalent is that consumers are willing to pay for a streaming service that includes some ads...**

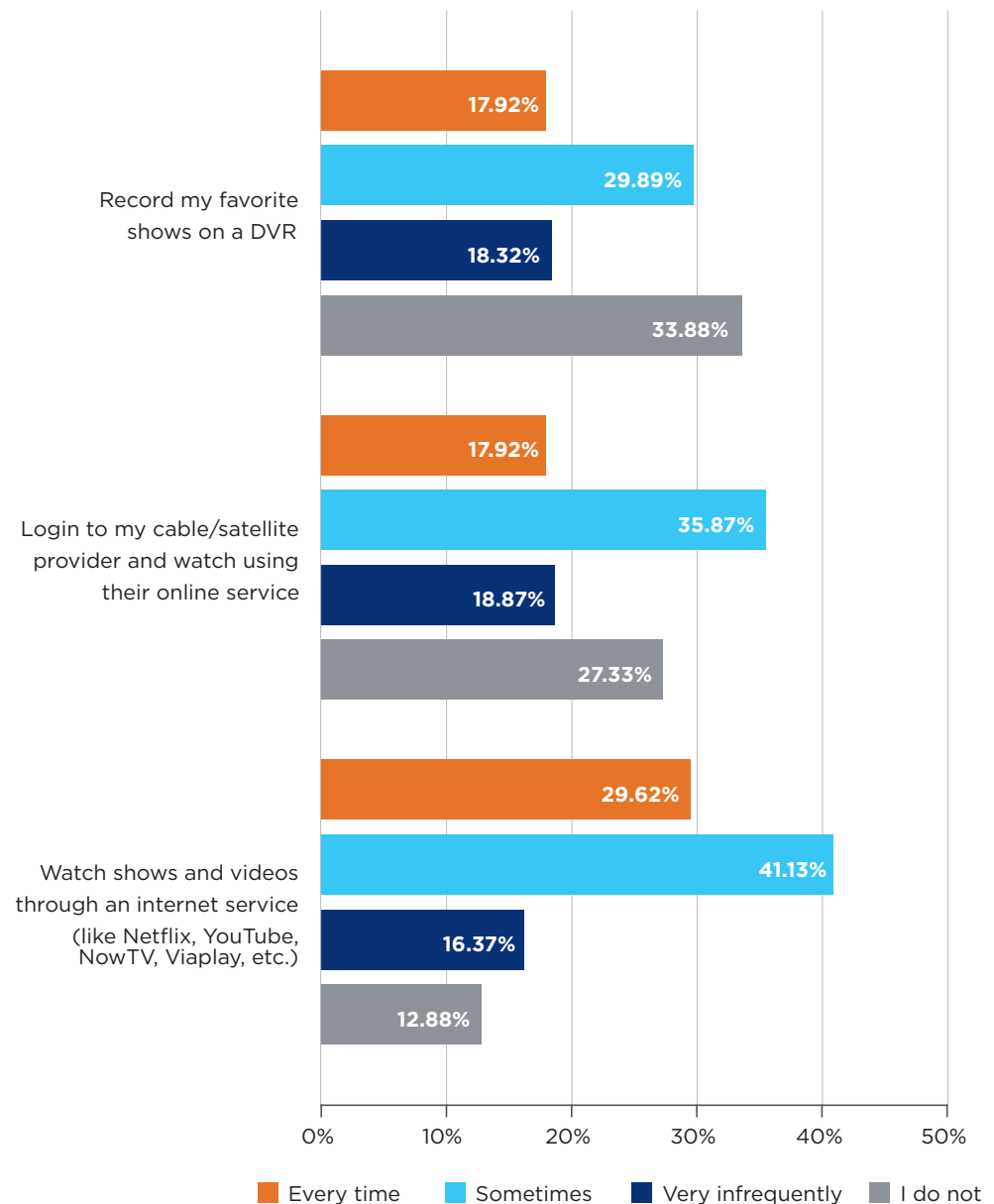
## Out With the Old, In With the New

Technology has always played a part in the evolution of the television experience. From the physical components, like the cathode ray tube being replaced by Plasma and LEDs, to the software through which video is delivered to the viewer, like the transition from QAM to IP, technology plays a critical role in the way that people engage with television regardless of where they watch it.

As television has taken on new features, consumers have flocked to them<sup>9</sup>. They have become part of the way viewers consume video. But streaming, as a new technology, is upending many of those television features consumers have come to use and love, namely the digital video recorder (DVR) or personal video recorder (PVR) as it's more commonly called in Europe. We can see in Figure 9 that consumers are far less likely to DVR a show (when they are travelling) than they are to simply log into a streaming provider and watch it.

### F9

Question #10  
"How likely are you to do each of the following while travelling?"



Although the marginalisation of the DVR functionality correlates with the growth of streaming, the findings illustrated by Figure 9 are less about the demise of a specific TV functionality as they are illustrative of how streaming technologies are fundamentally changing the definitions of television. Streaming truly is a transformative technology and as such, provides incredible opportunity for video distributors to design and experiment with new functionality (like social integration or interactivity) during the transitional state. Nothing is written in stone yet. Although viewers are driving the definition, it is primarily through their viewing habits and behaviour, rather than explicitly saying, “I think TV is such and such.” Consequently, streaming service providers have a great opportunity to mine that data (as well as take the opportunity to survey viewers) to deliver new experiences their subscribers may want.

## The New World of Streaming

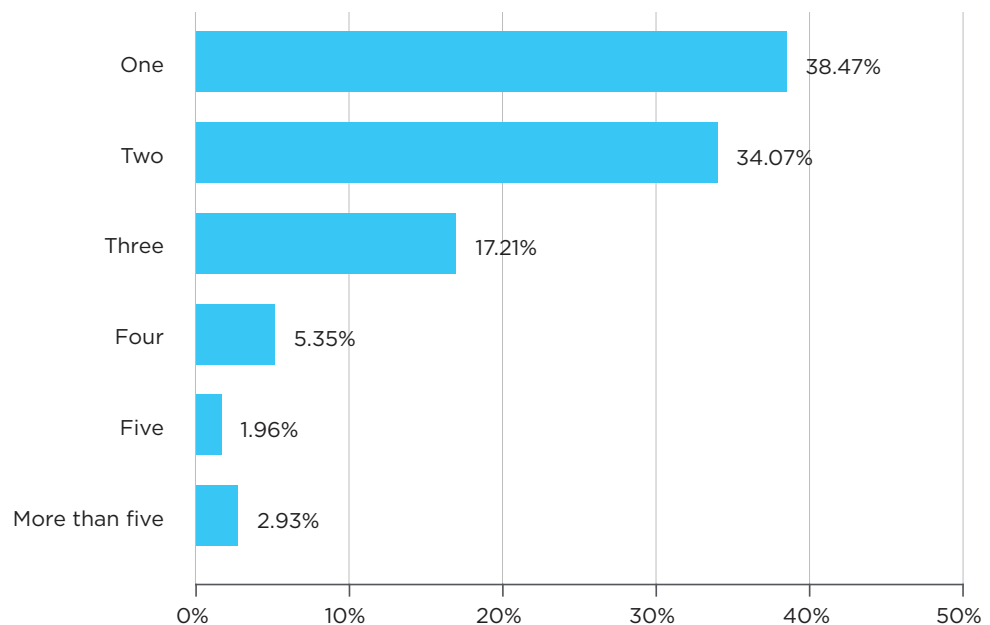
Although it is clear from the research data that the answer to the question, “what does it mean to watch television,” is changing for consumers, streaming itself is also in a state of flux. There are not only a number of different business models, from advertising-support (AVOD) to transactional (TVOD) to subscription (SVOD), but the market continues to grow. There are new specialist entrants, like DAZN, Britbox, Inside Out, and All Guitar<sup>10</sup>, as well as incumbent broadcasters making the foray into over-the-top delivery. And as the market continues to fragment, as rights holders recognise the value of having direct-to-consumer relationships, consumer confusion, angst, and frustration will grow. For example, when content is pulled from an aggregator service like Netflix, and now requires the viewer to subscribe to a different service to watch it, consumers, who do not understand that intricacies of content licensing, are left angry and annoyed.

### Viewers are Drowning in Content<sup>11</sup>

Just like any new market, OTT is awash with companies seeking to address the opportunity. As indicated in Figure 10, the majority of consumers have just one or two OTT subscriptions while approximately 25% subscribe to three or more.

#### F10

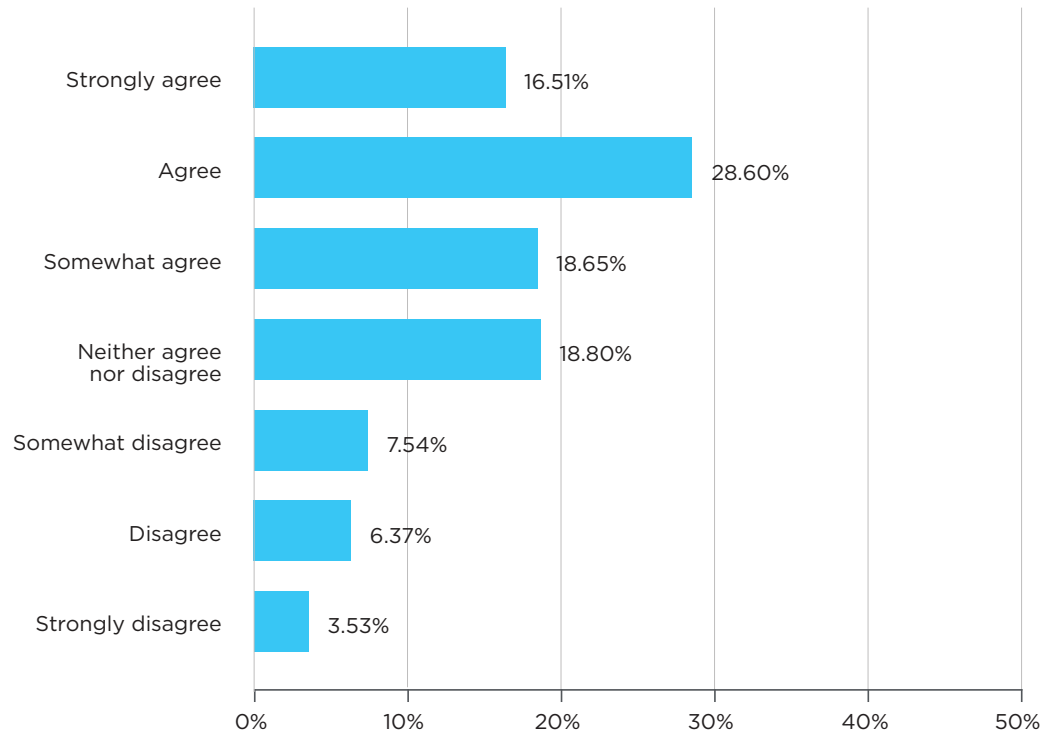
Question #7  
“To how many Internet-based video services do you currently subscribe?”



So with the proliferation of content, why aren't consumers subscribing to more services? If a viewer had more services, wouldn't they have more content to choose from and, consequently, more opportunity to watch more content? The obvious answer is that there simply isn't enough time in the day to watch that much video content. Furthermore people simply don't want to pay for content they aren't consuming. What's the use of paying for all those channels or subscriptions if they aren't going to be watched? Too much choice in any market can create a backlash with consumers and that is exactly what's happening in the streaming market as evidenced in Figure 11.

## F11

Question #8  
"Respond to the following statement: 'There are too many streaming video providers. I won't subscribe to any more.'"



Over half of our respondents (63.76%) indicated that they, at least, somewhat agree to the statement. This would seem to point to a situation in the streaming market that is analogous, at least in part, to the same situation that drove many people to part company with their cable operator for television service. This leads us to believe that the current market, although rich in content, is not sustainable.

If the majority of consumers cap their streaming subscriptions at two, there are not enough subscribers left to sustain all of the remaining services. Of course, this doesn't take into account very specialised content services, like Disney+, that have extremely desirable and specialised content for which consumers might make an exception. But that is mostly a rarity and it's quite possible that OTT services will either begin to consolidate under a single brand (as we have seen in the past 18 months with major content acquisitions within the North American market) or simply fade away.

## The Niche (or Specialised) Content Opportunity

It's clear from the data in our survey that there is some streaming service subscription fatigue starting to appear. And yet we believe that there is still an opportunity for rights holders to reach their intended audience. Firstly, as rights holders pull their content from aggregators in favour of D2C offerings, consumers who are already attached to that brand would be likely to increase their OTT subscriptions to account for that<sup>12</sup>. Secondly, it might be the case that consumers differentiate between aggregate OTT offerings and niche OTT offerings. So a consumer may very well have subscription fatigue for mass-market content but when it comes to specialised content, such as horror for example<sup>13</sup>, consumers may be willing to augment their streaming services with additional subscriptions that meet such specialised needs.

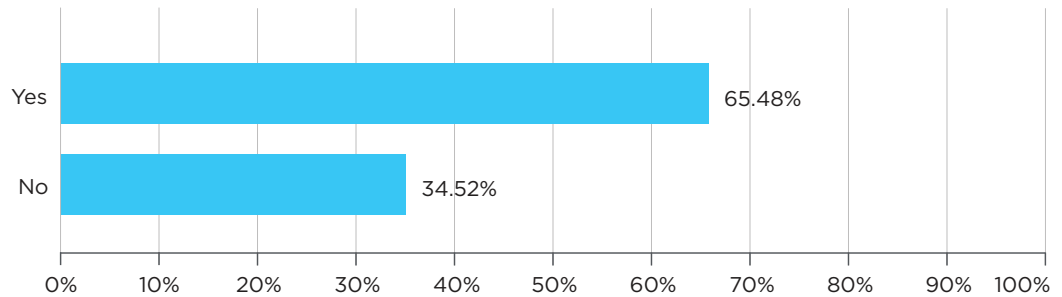
## Share Now, Pay Later?

Unlike traditional broadcast television, streaming is portable. Viewers can access their content from anywhere they have an internet connection and a capable device. But that flexibility has also introduced new behaviours as illustrated in Figure 12.

### F12

Question #11

"Respond to the following statement: 'I would be willing to pay more for a streaming video service if it allowed me to share my password with friends or family members.'"



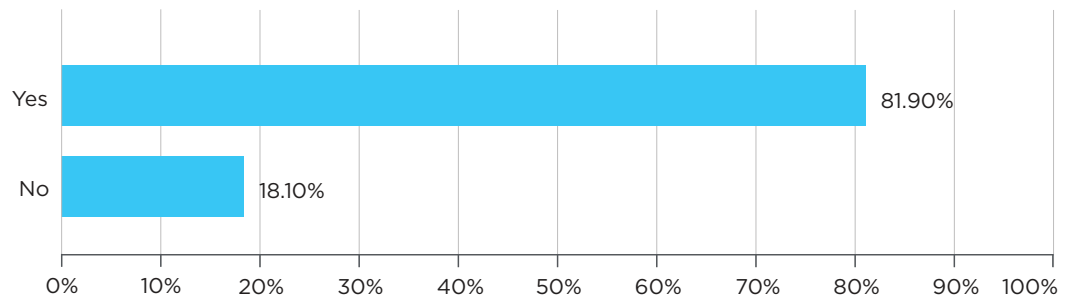
Consumers have proven, time and again, that they will skirt the legality of sharing when it comes to media<sup>14</sup>. But that is no more prevalent than in streaming which, because of the openness of the system, enables people to easily share or pirate content. And there have even been solutions launched which directly address this perceived growing problem<sup>15</sup>. But does this, or other potentially bad user behaviour, require a security response? There is an opportunity here as well for OTT providers: upsell<sup>16</sup>. The majority of our respondents (65%) indicated they would be willing to pay extra to legitimise their sharing behaviour. Of course, this does not take into account the amount of additional subscription cost the consumer would bear for being able to share an OTT service password (it's quite possible that at a certain price point, consumers will go back to sharing without consent), but Figure 12 still does reflect a very tangible revenue opportunity for service providers in the volatile streaming market.

## Whatever is Happening in Streaming, It's Good for Rights Holders

Yes, streaming has presented rights holders with a very unique opportunity: to forge direct relationships with their viewers. No longer beholden to network operators for distribution and subscription management, rights holders from HBO to Viacom to Sky, are definitely seeing the transformative technology of streaming video as a significant opportunity because, quite frankly, consumers are watching more (Figure 13).

### F13

Question #12  
"Respond to the following statement: 'I watch more video now than I did three years ago.'"



Over 80% of respondents indicated that they did watch more videos now than three years ago. It's not necessarily the advent of "anytime, anywhere" access that is driving the rapid expansion and adoption of streaming (although we believe that does play a significant role), it is also the fact that rights holders are either producing unique, streaming-only content (such as the CBS All Access show *StarTrek: Discovery*) or they are making more of their brand's content available through the OTT offering (i.e., a content vault).

When a viewer is already a fan of a specific content brand, the availability of more content by that brand will definitely drive up consumption. But this trend is also reflective of the experimental environment of streaming. The availability of streaming technology and the ease by which a new service can be launched has activated a fresh crop of "digital-only" content brands with exciting, new content that would not normally be available through traditional broadcast because of its small intended audience<sup>17</sup>. What's more, it's easy for consumers, eager to experiment with or consume niche content through a new OTT service provider, to subscribe to a service, watch a little bit of content, and then unsubscribe.

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## Mobility and Video

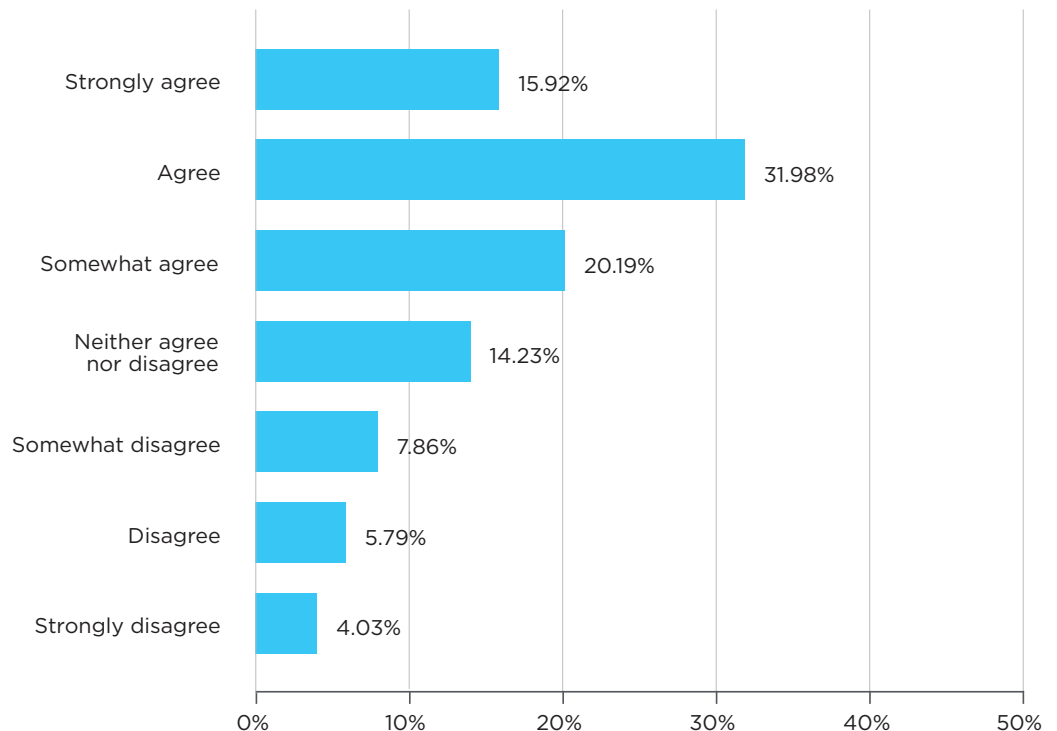
As explored in previous sections of this report, although consumers like the convenience of mobile viewing (especially for shorter clips), the majority still watch most of their video content on the big screen through a connected device. But watching through an app, whether that's on a connected device or a smartphone, is a TV experience vastly different from traditional broadcast. As such, it's only natural for consumers to form an opinion of the streaming service that is different from their expectations for a cable operator provider. Unfortunately, unlike traditional broadcast, there is no baseline for the different expectations a viewer might have for video content delivered via an app on a mobile device, a big screen TV, or a computer. But one thing is definitely clear: expectations are not the same.

## The Convenience/Quality Tradeoff

It's quite natural for video distributors to focus on quality when delivering content to a mobile device. That has been the consumer expectation for broadcast television ever since the advent and switch over to digital (HD) signals. But just delivering the highest bitrate to a mobile phone is not necessarily the best solution. Yes, the consumer will see something that is visually acceptable, but at what cost? There are many content types and elements for which a high bitrate HD feed is arguably overkill. Furthermore, although many newer mobile phones have the resolution to display high-end HD content, because of the small screen size, it isn't visibly noticeable to the human eye and, as such, delivering that many bits is wasteful and costly. And, to top it off, consumers may not even care about receiving the "highest quality" video stream when watching from a smartphone (Figure 14).

### F14

Question #6  
"Respond to the following statement: 'I am OK with streaming video quality being worse than broadcast (i.e., through a cable or satellite provider) so long as I get to watch on whatever device I am using wherever I am.'"



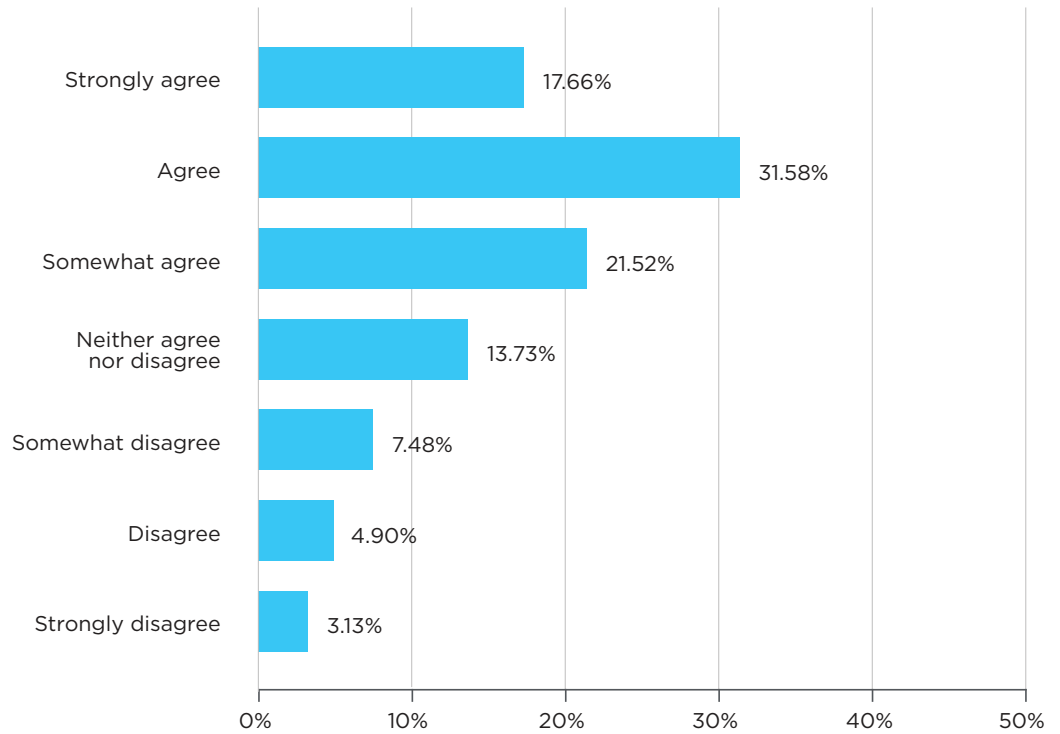
Approximately 47% of respondents at least agreed with the statement that they would sacrifice streaming video quality for the convenience afforded through mobile viewing. This might be contra-indicative for some who assumed that consumers shared expectations for video characteristics, like quality, with traditional broadcast. But if there's one thing that transformative technologies like video streaming illustrate, it's that there is no way to gauge consumer expectations, especially by comparing them to the incumbent experience.

Note as well (Figure 15), that this number skews even higher amongst the younger demographics.

## F15

### Question #6

“Respond to the following statement: ‘I am OK with streaming video quality being worse than broadcast (i.e., through a cable or satellite provider) so long as I get to watch on whatever device I am using wherever I am.’” (18-29)



It is well documented by Cisco in their Visual Network Index report<sup>18</sup>, that video will account for a higher percentage of all IP traffic over the next few years and, more importantly, especially in mobile. Our survey responses indicating a viewer willingness to sacrifice quality for convenience clearly support this. It would seem then, that for service providers, reliability and consistency are far more important than ensuring a high bit rate for mobile viewers<sup>19</sup>.

## Conclusion and Recommendations

Streaming video is fundamentally changing the definition of what it means to “watch TV.” And, as such, there is a significant upheaval in consumer behaviour and expectations. Watching video from a smartphone or through an app on a connected device is just not the same as in traditional broadcast (even when it’s done on a large screen).

As such, video distributors and rights holders need to pay special attention to how these behaviours are changing.

With that said, we have identified the following recommendations:

1. For incumbent providers, content distribution must move to IP in order to enable next-generation OTT and TV-Everywhere services that consumers want.



2. Streaming providers must figure out how to balance the potential revenue provided by ad delivery with the demands of consumers for less interruption (and their willingness to pay for it).
3. Consumer loyalty is driven by one thing, and one thing only - content availability. To be in their two- or three-provider stable, services must deliver the content viewers want to watch.
4. Given the penchant of consumers to watch their content streaming while they are away from home, providers must invest heavily in stable, reliable, and scalable delivery technologies.
5. Although consumers indicate they are willing to sacrifice quality of streaming video for convenience of access, providers must continue to invest in technologies that maximise bandwidth while simultaneously preserving quality.

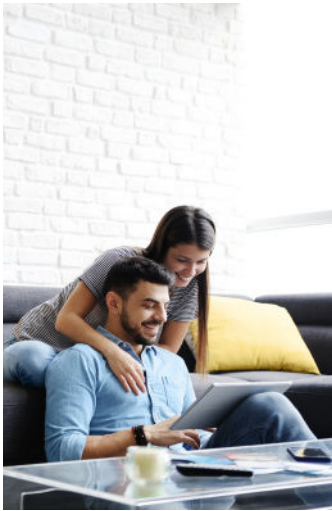
## The Shift to IP

Although streaming services are contributing to the evolution of what it means to “watch TV,” these services wouldn’t be possible unless a fundamental transition was happening behind the scenes: the shift to IP. Most broadcast infrastructure is based on Serial Digital Interface (SDI). Unfortunately, content moved around the broadcast workflow through this interface, and eventually delivered via QAM to set top boxes, does not allow for retransmission or distribution to internet-based endpoints. They are simply not compatible and operating two infrastructures, one SDI-based and one IP-based, can be costly and cumbersome. IP also affords numerous other benefits, such as cheaper backhaul to deliver content to regional distributors (rather than sending it over satellite links). There are SDI-to-IP interfaces, but they are, ultimately, just a sticking plaster to the larger effort of transitioning broadcast equipment to native IP which will ultimately allow a broadcaster to deliver a single source of content through both traditional channels and the burgeoning OTT market.

If you haven’t already started this transition, it’s not too late but it is critical if you hope to take advantage of streaming opportunities as well as long-term infrastructure and operational cost savings.

## The Balance of Generating Revenue and the Viewing Experience

Viewers don’t want to be interrupted. In fact, if they had their choice, they would probably watch all video content ad free. You can thank the VCR, and then the DVR, for this, technologies which allowed consumers to bypass interruptive advertising.



But watching recorded content is not the same as watching it when it's broadcast for the first time, as it can undermine the social aspects of watching television. And yet the traditional ad-pod model for episodic content doesn't necessarily translate to the myriad of different video content lengths available through streaming providers. Can you imagine asking a viewer to sit through six or more ads during a ten-minute clip? Advertising is a critical component of the video revenue model but video distributors must figure out a way to balance generating that revenue with the shifting behaviour of streaming-focused viewers, some of whom are even willing to pay additional subscription fees to remove ads completely. In addition, streaming affords significant opportunity to evolve even the ad experience.

With massive amounts of data at your fingertips, you need to explore different advertising experiences ranging from personalised to addressable. Simply porting the traditional broadcast TV ad experience to the streaming world, especially when inventory is limited, is a recipe for disaster.

## Content is King. If You Don't Have What Consumers Want to Watch, You Don't Have a Service

Consumers have spoken: there is too much choice in the streaming market. It is only natural that we will see a shake-out over the coming years, one in which OTT services will perish and content brands will merge to form mega offerings. Content aggregation isn't dead in the OTT world, it's just going to be owned by a rights holder, not by a third-party provider. If consolidation continues to happen and there a dozen or two dozen available services in the market, everything might be alright. But for the foreseeable future, in which they are over a hundred available OTT services<sup>20</sup>, consumers will continue to keep a close eye on their wallets and limit their subscriptions to two, three, or maybe four services.

If you are launching an OTT service, or already have one launched, ensuring your place within the stable of "must have" services requires that you have the content consumers want to watch. It is possible that smaller, more niche-content focused OTT providers will be able to survive in the long-term although they won't generate the kind of revenue that many rights holders have come to expect.

## Stability, Reliability, Scalability: the Mantra for Streaming

Consumers have indicated they watch content on their phones, most likely when away from their big screens at home. And although they might be willing to sacrifice quality when viewing on the small screen, the failure to provide even a low-quality feed spells certain failure for an OTT service. That's why it's critical to ensure the service not only remain available for consumers who are moving around between cell towers and WiFi networks, but that it can adjust to fluctuating networks and still provide adequate viewability. There is probably a threshold for mobile quality. Yes, consumers will trade off quality for convenience (as indicated by our research), but if the quality is so bad that the video is unwatchable, that is another problem. Providing a service that scales, is reliable, and stable for mobile viewership is very important as television viewing evolves.

But doing so on your own, unless you have very deep pockets, can be expensive. Finding the right infrastructure partner or partners, such as a global CDN or adopting a multi-CDN strategy, can be instrumental in providing the best possible experience for viewers

## Maximising Bandwidth for Superb Delivery

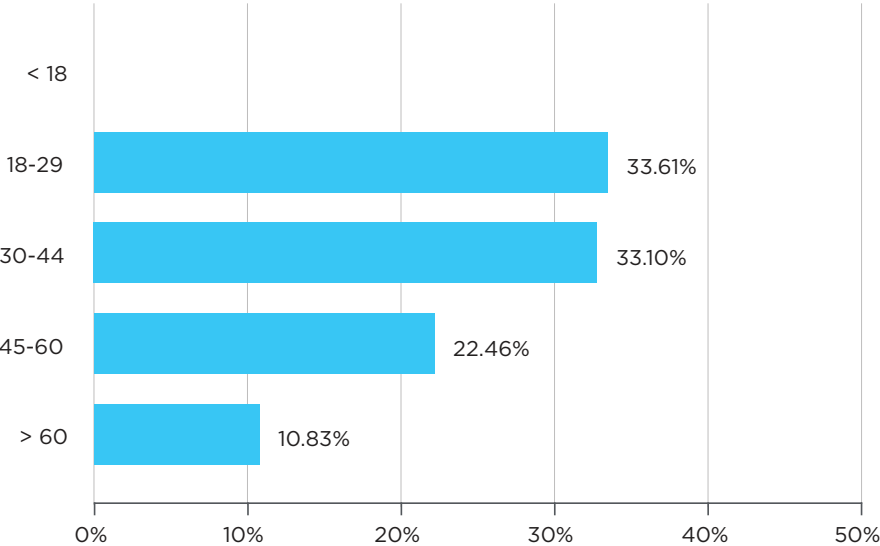
As the streaming technology itself continues to evolve, there will be countless opportunities to improve the quality of deliver while lowering overall distribution costs. For example, codec advancements can have profound impacts on storage and CDN costs by radically reducing the number of bits needed. What's more, advancements in encoding (like content-aware), can shave off even more by reducing the number of bits needed to deliver an HD viewing experience. Finally, new video packages like CMAF can provide operational efficiencies by reducing the number of video variants required to meet device diversity to one (which, again, impacts storage but also reduces the amount of additional transcoding that needs to happen). There are a myriad of technologies such as new delivery protocols like SRT and WebRTC that deliver comparable quality video for less bandwidth or cost.

If you are running an OTT service, it is critical to continually evaluate these technologies and employ them as you can. Doing so can not only reduce operational costs, but also bandwidth. Reducing the amount of required bandwidth to deliver HD-quality streams can also improve overall scalability by providing more capacity to deliver more streams

# Demographics

The following represent the demographic makeup of the survey respondents.

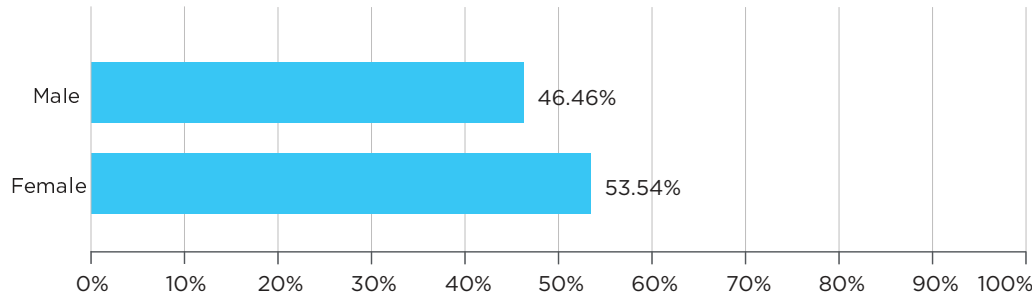
## Age



### F16

Question #13  
"How old are you?"

## Gender



### F17

Question #14  
"What is your gender?"

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# About Lumen

Lumen (NYSE: CTL) is a technology leader delivering hybrid networking, cloud connectivity, and security solutions to customers around the world. Through its extensive global fibre network, Lumen provides secure and reliable services to meet the growing digital demands of businesses and consumers. Lumen strives to be the trusted connection to the networked world and is focused on delivering technology that enhances the customer experience.

## Key Facts about Lumen

- Lumen's EMEA CDN nodes are in UK, Ireland, France, Germany, Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, Hungary, Iceland, Israel, Italy, Netherlands, Norway, Poland, Romania, South Africa, Spain, Sweden, Switzerland, and the UAE.
- Lumen offers CDN services with peak capacity exceeding 120Tbps, delivered through 120 PoPs globally.
- Lumen serves nine of the world's ten largest media companies for 2019.

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### Footnotes

1. A popular British show, Gogglebox, exemplifies how social watching television can be.
2. According to a Q3, 2018 report by Ampere Analysis, 36.5% of surveyed consumers in the U.S. and U.K. dislike television advertisements.
3. Based on analysis of viewers in a 2017 IAB report, 94% of survey respondents indicated that they do some sort of "co-viewing" at least once per week on some sort of screen.
4. Some providers, like Hulu, are experimenting with "non-interruptive" advertising formats like displaying an ad when a user pauses a show. Variety has an excellent write-up on the current OTT advertising landscape and challenges.
5. Ad dollars spent on broadband video are predicted to surge 39% in 2019 to \$3.8 billion, according to Magna, a media-research unit that is part of the ad giant Interpublic Group, and 31% in 2020 to \$5 billion. But this is just a small piece of the TV ad spending pie which, according to Magna, was \$42.7 billion in 2018. Source: Variety.
6. It is perfectly acceptable, at this time, to identify those willing to pay more as outliers as those moving the ball clearly towards that end of the continuum (a score of "80," "90," or "100") represented a small number within the entire respondent pool.
7. According to data from the IAB and multiple consumer surveys from other sources, 71% of consumers prefer advertising that is targeted to their interests and shopping habits.
8. Hulu is also experimenting with allowing the viewer to select which ad to watch, thereby putting them in control and, ultimately, delivering something that is more personalised. Source: Variety.
9. Carey, John and Elton, Martin C. J. When Media Are New: Understanding the Dynamics of New Media Adoption and Use. University of Michigan Press. 2010. Full text online.
10. Niche content services are continuing to grow in popularity, whether focused on sports, gardening, or guitar playing. IBC has some interesting thoughts, from 2018, about how niche players can launch and grow successfully.
11. According to a Hub Research report on the U.S. OTT subscriber market, approximately 36% believe they have too many subscriptions to streaming services. This data is tempered by Ooyala's Broadcast Industry 2019 Report which found that OTT subscriptions will number 777 million by 2023, more than double 2017. Source: RapidTV news.
12. This, of course, is facilitated by consolidations of smaller content brands under a single umbrella (such as Viacom's ownership of BET, Comedy Central, MTV, etc.) so long as those over-arching brands don't bifurcate their content library to distinct direct-to-consumer offerings (such as seems with the case of Viacom and BET+, the streaming offering for BET)

13. A niche OTT offering called Shudder currently offers horror-only content
14. According to a 2019 report by Parks Associates, Innovations in Authentication and Personalization Technologies, 16% of consumers share video streaming passwords with other users. Of course, this may not take into account consumers that are willing to do so, but have not yet shared their passwords.
15. One such offering is Synamedia which provides a means for streaming video service operators to offer users who routinely share passwords an opportunity to purchase a higher subscription that offers more concurrent device access.
16. For an analogous example in the streaming music industry, look at the success of Spotify Family. Although the service only applies to people living in the same physical household, it provided Spotify a way to curb password sharing amongst family members while increasing the overall subscription revenue.
17. We touched upon this briefly in the previous section, "The Niche (or Specialised) Content Opportunity."
18. <https://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html>
19. Of course, there is probably a cut-off here for consumers which has yet to be discovered. At what point will the quality be too poor for the content to be viewable? What's more, if the streaming service is reliable and consistent on mobile, will consumers then demand higher quality? This needs to be further explored to help streaming providers tailor a better experience for mobile viewers.
20. The U.S. market alone has over 200 OTT providers (as of 2018). Source: Digiday. It is perfectly acceptable, at this time, to identify those willing to pay more as outliers as those moving the ball clearly towards that end of the continuum (a score of "80," "90," or "100") represented a small number within the entire respondent pool.

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