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Quality matters to online viewers

Delivering seamless, TV-like quality experiences to every device is the key to video streaming success.

Online video service providers (VSPs) have an opportunity to increase total video viewership by 25 percent by providing the highest-quality viewing experiences.

86% say it is very or extremely important to get a TV-like quality experience every time they watch, and on every screen they use.
Executive summary

Poor video quality can be detrimental to the success of over-the-top (OTT) services. In a recent Verizon Digital Media Services’ survey that explored the behavior of 1,000+ U.S.-based adults watching 14+ hours of streamed video a week, we found 86 percent of viewers say it is very or extremely important to receive a TV-like quality experience every time and on every screen.

It’s clear that poor video quality results in high rates of viewer abandonment. With more viewers watching video online than ever before, it is critical that VSPs focus on improving their overall video quality so that they don’t lose viewers to higher-performing OTT services.

Breaking down online viewing trends

- 39 percent of connected TV users say they stream video on their devices daily, and 54 percent are watching five days or more a week.

- One third of mobile viewing sessions are 15 minutes or less, but nearly half are 31 minutes or longer. Based on Verizon Digital Media Services’ platform analytics, Android mobile viewers watched for 63 minutes per session, while iOS viewers watched slightly less at just a little under 62 minutes.

- On mobile, the average viewing session is 59 minutes. However, mobile viewers give up watching after 13 minutes of poor quality. That can result in a 78 percent drop in viewing time. Average viewing session length on a PC is 81 minutes, but viewers reported abandoning their device after 16 minutes, an 80 percent decrease. Just 18 percent of PC viewing sessions are 15 minutes or less, and 68 percent are 31 minutes or longer.

- 28 percent of viewers watch video on their tablets. While fewer viewers use tablets compared with other device usage, they are still watching video on tablets at least five days a week.
Executive summary

Quality drives higher engagement rates

• The average viewing session across all devices fell, on average, by 77 percent when video quality was significantly reduced. Nearly one third of viewers abandon viewing at least every other time they watch on a mobile device.

• A quarter of viewers say that poor video quality causes them to stop watching content on their PCs 50 percent of the time or more.

• 13 percent of mobile users and 11 percent of PC and connected TV viewers say they stop viewing at least one video virtually every time they had a poor viewing session.

Improving quality brings more opportunity

• Eliminating all of the viewing problems will have a dramatic effect on VSP revenue. Ad-supported services would see an increase in ad revenue of at least 25 percent. Subscription VOD providers would see a drop in churn of 10 percent or more.

Millennials consume more online content

• Millennial viewers spend more time viewing long-form content than older viewers. They also watch online more often. Although they value quality experiences, millennials have a higher tolerance for viewing problems than those over 34 years old. For example, when asked about their last impaired viewing session on their mobile, 38 percent said they watched 11 minutes or more versus just 27 percent of non-millennials.

• VSPs targeting millennials may see a smaller improvement in viewing times and their revenue if they manage to successfully eliminate all viewing problems than if they targeted viewers of all ages.
Multiscreen streaming is a growing part of our lives

The simplicity and convenience of streaming has allowed video to become part of our lives in a way it never has before.

It is allowing us to pursue our passions no matter where we are or what we are doing. Rather than standing idly in line at the grocery store, we are catching up on the latest episode of The Path or Game of Thrones. During our lunch break at work we are taking time out to cheer on our athletes as they compete live in the Olympics.

U.S.-based adult viewers are watching an average of 14 hours a week (over an hour a day) of streaming video. 16 percent find time to watch more than 20 hours a week.

Average number streaming video hours consumed each week

Every screen and device is contributing to the growth in video streaming. Most remarkable of all is the ascendency of the connected TV. Our survey indicates 34 percent of weekly streaming occurs on the biggest screen at home.

Just one year ago viewers were not watching on their smart TVs, game consoles and streaming media players as much as other platforms. For example, just 7 percent of online requests to BBC iPlayer in January 2015 were from connected TVs. By January 2016 that number had doubled to 14 percent.¹

Source

The PC still remains an important platform for many, with 29 percent of weekly streaming occurring on the device. Though it may have the smallest screen, the mobile’s ubiquity makes it a preferred screen, delivering 23 percent of daily streaming.

Even the tablet, the least used of the devices studied, accounts for a sizable proportion of our daily video diet at 14 percent.

This data illustrates how viewers are not simply streaming to one screen; they are viewing on all screens at their disposal.

**Mobile streaming in the morning is replaced by the PC while at work, and the TV takes center stage in the evening.**

For many viewers, video streaming is a daily habit. 39 percent of connected TV viewers say they watch streamed video on their devices every day, and 54 percent watch five days or more a week. The tablet, though used less frequently, is still an important platform, with 28 percent using it to watch video at least five days a week.

### How often (frequency) do you stream on each device?

*Note: All values have been rounded to nearest whole percent.*
As online viewing rises, video quality expectations rise

The dramatic increase in TV Everywhere and subscription video-on-demand (SVOD) services is fueling the surge in video streaming.

55 percent of U.S. households have at least one SVOD subscription, and over 17 percent of pay-TV subscribers are using TV Everywhere apps at least monthly.\textsuperscript{ii,iii} These apps have increased the length of a single viewing session as viewers depend on their devices to deliver a more TV-like experience\textsuperscript{1}.

Length of typical viewing session

About how long do you watch during a typical viewing session on each of the following screen types?

Mobile

- 5 min < 6%
- 6 - 10 min 10%
- 11 - 15 min 12%
- 16 - 30 min 18%
- 31 - 60 min 17%
- 1 - 2 hrs 17%
- 2 - 3 hrs 8%
- More than 3 hrs 7%

PC

- 5 min < 5%
- 6 - 10 min 7%
- 11 - 15 min 6%
- 16 - 30 min 14%
- 31 - 60 min 20%
- 1 - 2 hrs 25%
- 2 - 3 hrs 12%
- More than 3 hrs 11%

Sources

- \textsuperscript{1} Digitalsmiths, Q4 2015 Video Trends Report, Digitalsmiths, Q1 2016, p20
- \textsuperscript{ii} Adobe, Digital Video Benchmark Q4 2015, Adobe, Q2 2016, p4

Footnotes

- \textsuperscript{1} A viewing session typically involves multiple video views.
- \textsuperscript{2} In our survey, we asked respondents to think about viewing sessions for services like SVOD services, rather than Facebook and YouTube videos.
Poor-quality experiences lead to shorter viewing times, lower advertising revenue and less loyal viewers.

So, don’t leave quality behind.

The average premium viewing session is a remarkable 59 minutes. With a much bigger screen, the PC is typically viewed for much longer.

Just 18 percent of PC viewing sessions are 15 minutes or less, and 68 percent are 31 minutes or longer. The average viewing session is 81 minutes.

With such long viewing sessions spread across so many screens, it is understandable that viewers have very high-quality expectations. 86 percent say it is very or extremely important to get a TV-like quality experience every time they watched, and on every screen.
Current online viewers are watching longer on their mobile devices

Longer mobile viewing times can be attributed to VSPs delivering online video that viewers appreciate watching even while on the go.

Examining viewing session time data yields some interesting results. Typical viewer session durations on both Android and iOS devices consistently exceed 60 minutes. After looking at Verizon Digital Media Services’ real-time platform analytics, we found that between May 6, 2016 and May 19, 2016, the average daily viewing session for Android devices was just under 63 minutes.

Average daily viewing session times fell below one hour just once during that period; average viewing on May 14 was 59 minutes and 57 seconds. The highest daily average occurred on May 10 and was 65 minutes and 11 seconds.

Average viewing sessions were slightly lower for iOS devices over the same period. The average session was 61 minutes and 52 seconds, with a low of 58 minutes and 19 seconds on May 8 and a high of 66 minutes on May 16.

The average viewing session enjoyed by mobile viewers on our platform consistently exceeds the average viewing session reported by overall survey participants. For Android devices, Verizon’s VSP customers see their viewers watch 7 percent longer, and for iOS they watch 5 percent longer.

Average Verizon Digital Media Services session view duration

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<th>iOS</th>
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Figure 1 Verizon Digital Media Services’ platform users share of Android sessions between the period of May 6, 2016 and May 19, 2016

Figure 2 Verizon Digital Media Services’ platform users share of iOS sessions between the period of May 6, 2016 and May 19, 2016
Video streaming experiences do not meet viewer expectations

Given how important a TV-like quality experience is, it is surprising how few providers are delivering on this demand.

On mobile, nearly a third abandon viewing at least every other time they watch. The PC has better rates, with a quarter of PC viewers saying they abandon half the time or more due to poor-quality viewing experiences. 13 percent of mobile users and 11 percent of PC and connected TV users say they give up trying to view at least one video virtually every time they have a viewing session if the viewing experience is not up to par with their expectations.

Understandably, viewing time suffers a dramatic drop when quality is below par. For example, on mobile the average viewing session is 59 minutes. However, mobile viewers reported watching for just 13 minutes before abandoning.

That is a 78 percent drop in viewing time. It is a similar story for the PC. Average viewing session length is 81 minutes, but viewers reported their last abandoned viewing session on the device lasted for just 16 minutes, an 80 percent decrease.

How often would you say you stop watching video on each of the following screen types because of a poor-quality viewing experience?

Viewers are still not able to stream quality experiences on all their devices.

Mobile and tablet lead the pack in viewer abandonment due to poor-quality experiences.
The average viewing session across all devices fell, on average, by 77 percent when there was significant impairment of video quality.

So, what quality problems are online video viewers encountering the most?

**Video buffering is hands down the most frequently cited of video problems encountered across all devices.**

Users report that PCs saw the greatest incidence of this problem, (73 percent), and tablets the least (63 percent). Picture-quality issues and slow video start were both encountered equally, with 35 percent of users reporting the problem.

One of the most annoying problems is the sound being out of sync with the video, and approximately a quarter of survey participants reported this as an issue.
Data shows that video stalling is one of the most frequently cited problems. And for viewers, video stalling happens to be highly problematic. There is simply nothing worse for viewers than for the video to freeze in the middle of a movie or right before the last shot in a game. These events are the most likely to cause an abandoned video view.

When a video freezes on a device it is called a buffering event. It is called this because a connected device receives the video stream from the network and stores it in a buffer in the device memory.

The device’s media player renders the video from the buffer to the screen. This small buffer allows the device to keep playing video even when small delays occur in the network. When a big delay occurs the buffer empties, and video playback freezes until the buffer can be replenished. This is a buffering event.

Our data shows that these buffering events occur most frequently at peak viewing times. Figure 3 compares buffering events at peak viewing times between our content delivery network and competitors. One competitor experienced two buffering events at peak viewing times in twice as many viewing sessions as we did.

This difference in our favor is very important given the data we have seen on the frequency of viewer abandonment and its impact on viewing length and revenue. Simply put, this could be the difference between a profitable video service and a failing one.

Severe rebuffering session ratio (% of sessions over 2 buffering events) on the website of a large video service provider (VSP)
Poor video quality has painful repercussions

Across all screens, viewers report that 26 percent of their viewing sessions are impacted by poor quality.

Impaired viewing leads to an average reduction in viewing times of 77 percent. But what if there were no impairments at all? What would happen if videos started quickly, played with optimum quality, didn’t stall and didn’t lose audio synchronization? In other words, what if every viewer experienced online video the way it’s meant to be seen?

Viewers would consume 25 percent more online video content!

This has enormous implications for video monetization. Video businesses relying on ads can increase revenue by 25 percent or more by delivering a TV-like quality experience every time.

Simply put, fixing quality is the best way to increase ad revenue!

For those monetizing their service through subscriptions, the impact can be just as important. Subscriber churn among SVOD services is very high, with 44 percent of viewers saying they had cancelled at least one service. Of those viewers that cancelled a subscription video service, 13 percent cited poor quality as a reason they quit, and 5 percent said it was their top reason.

Quality means TV-like viewing experiences across every device.

Poor-quality experiences and impaired viewing are characterized by video buffering, pixelation, slow-video starts and sync issues with audio.
Millennials (those between the ages of 18-34 years old) consume 34 percent more premium online video than the rest of the adult population. Each week they watch for 15 hours and 36 minutes versus 11 hours and 36 minutes for non-millennials. As with the rest of population, millennials favor the connected TV for longer-form content, although it wins out only marginally over the PC.

Millennials say 32 percent of their viewing time is through the connected TV, and 29 percent through the PC. Millennials seem much more comfortable with the smaller screen size of the mobile, devoting a quarter of their viewing time to it. The svelte screen of a mobile phone only captures 20 percent of non-millennials’ viewing time.

Not only do millennials watch for a significantly longer aggregate amount of time than older viewers, but their viewing session frequency and length tend to be longer too. Millennials watch video more often than non-millennials on every device at their disposal.

For example, 42 percent of millennials say they stream video every day on their mobile versus 27 percent of non-millennials. Even on the tablet, which is not a particularly favored device, millennial tablet users stream video more on this platform than non-millennial tablet users.
Overall, online viewing sessions tend to be longer among millennials. Nearly three quarters of millennials say their average viewing session is longer than 30 minutes, while 64 percent of non-millennials say this.

Similarly, 54 percent of millennials say their average viewing session on a mobile is over 30 minutes, and just 43 percent of non-millennials say the same.

As expected, both millennials and non-millennials experience the same amount of streaming problems, but it’s their reaction toward these problems where we see a surprising difference.

Although millennials and non-millennials value quality-viewing experiences equally, with 86 percent of each group saying a quality-viewing experience is very or extremely important to them on every screen, millennials are actually more tolerant, or perhaps just more persistent, than those over 34 years old.

When we asked survey participants to think about how long they watched the last time they encountered a streaming problem, such as video buffering, pixelation, slow-video starts and sync issue with audio, 38 percent of millennials said they watched for 11 minutes or more versus 27 percent of non-millennials. This behavior was similar, although less pronounced, in the tablet and PC.

So, what does this all mean? Video service providers have one job to do aside from beefing up content. They need to fix the quality of the experiences they are delivering to increase their revenue.

VSPs targeting all ages will have a much better chance of improving their ROI after they put quality first. And VSPs focusing on just millennials will experience a smaller, yet still beneficial sales lift.

Above all, it’s important to understand what viewers want and expect. Only then will it be possible to remain relevant in this fast-paced digital age of TV Everywhere.

Users that stream on each device daily

About how often do you stream video on each of the following screen types?

- **Millenials**
- **Non-millenials**

<table>
<thead>
<tr>
<th>Screen Type</th>
<th>Millennials</th>
<th>Non-millenials</th>
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<tbody>
<tr>
<td>Connected TV</td>
<td>43%</td>
<td>34%</td>
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<tr>
<td>Mobile</td>
<td>42%</td>
<td>27%</td>
</tr>
<tr>
<td>Tablet</td>
<td>37%</td>
<td>23%</td>
</tr>
<tr>
<td>PC</td>
<td>34%</td>
<td>19%</td>
</tr>
</tbody>
</table>
About this data

Verizon Digital Media Services’ online survey was conducted from April 8, 2016 to April 13, 2016, among 1,007 U.S.-based consumers who fit the following criteria:

• Are aged 18 or older

• Have broadband internet in the home and cellular internet through a mobile smartphone

• Have streamed on one or more of the following devices in the past month: desktop/laptop (referred to as PC in this report), tablet, mobile or connected TV (e.g., Roku, Chromecast, Apple TV and other internet-connected TV platforms)

The objective of the survey was to better understand viewer video streaming habits particularly when watching SVOD and similar services, and to understand the impact video quality has on them.
Verizon Digital Media Services' next-generation platform brings together world-class technologies to prepare, deliver, display and enable the monetization of digital content so viewers can watch and enjoy on their terms. Built on one of the world’s largest networks, Verizon Digital Media Services empowers content providers to deliver great viewer experiences for any content on every screen.

For more information on Verizon Digital Media Services, please visit VerizonDigitalMedia.com.

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