NPAW

REPORT
H1 2022

Video Streaming Industry Report

A look at the trends that shaped video streaming in the first half of a super year for sports

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Entering uncharted territory, with NPAW by your side

On the heels of the massive boom experienced in recent years, the video streaming industry keeps powering ahead at full speed. Never before have we seen a bigger offer in online video content and platforms, yet the industry's success could also be the downfall for those who fail to adapt.

In an increasingly saturated market, even the biggest industry players are starting to feel the effects of increased competition and the finite nature of the consumers' time. Daily playtime per user and service continues to fall across VoD and Linear TV, while attracting and retaining users is becoming ever more challenging as subscription fatigue and global economic uncertainty grow.

The rise of advertising-based models and the promise of sports streaming both have the potential to deliver further industry growth, but long-term success depends on a more fundamental formula: superior content + a superior experience.

Only those services that can guarantee both will be able to increase user engagement and stay ahead of the competition. And, for that, they will require the actionable insights only an advanced, real-time video and app analytics platform like the NPAW Suite can provide.

One more semester, we would like to thank you for your continued trust in our video business intelligence tools and resources like this report. Join us as we examine the consumption and quality trends that shaped global streaming strategies in the first half of 2022.

Ferran G. Vilaró
CEO & Co-Founder of NPAW

1.1 Key takeaways

The global video streaming industry continued its expansion in the first half of 2022 as the total number of plays and minutes of playtime increased across VoD and online Linear TV. However, a deeper look into the data reveals a more challenging situation on an individual service level.
The drop in daily consumption accelerated amid increased competition, with providers pushing for higher quality of experience in an effort to boost user engagement and reduce churn — all while a surge in sports streaming confirmed this content's potential for growth.

But, in a nutshell, here are the main global takeaways from this half-year report:

1. **Daily VoD consumption per user and service took a further 11% dip** in the first half of 2022, while **users watched slightly fewer, yet longer titles per day**
2. After peaking in H1 2021, **daily Linear TV consumption per user and service saw an 18% decline year-over-year**, while **users watched linear content in shorter sessions**
3. **Avg. Bitrate for VoD approached a peak** as providers increased Avg. Join Time to keep buffering at bay, resulting in a rise in exit before video start
4. **Linear TV bitrates got a boost after a period of stabilization**, with Avg. Join Time increasing to support accelerated bitrate improvements while reducing buffering levels
5. **Daily sports streaming consumption soared** for both VoD (12%) and Linear TV (13%), with the Avg. Daily Playtime for linear sports almost doubling the average for generic linear content
6. Once again, **users spent the most viewing time on big screens**, while **smartphones remained the device of choice for shorter, more frequent viewing sessions**

Dive deeper into the report for a detailed look at these and other trends and what they mean for streaming services around the globe.

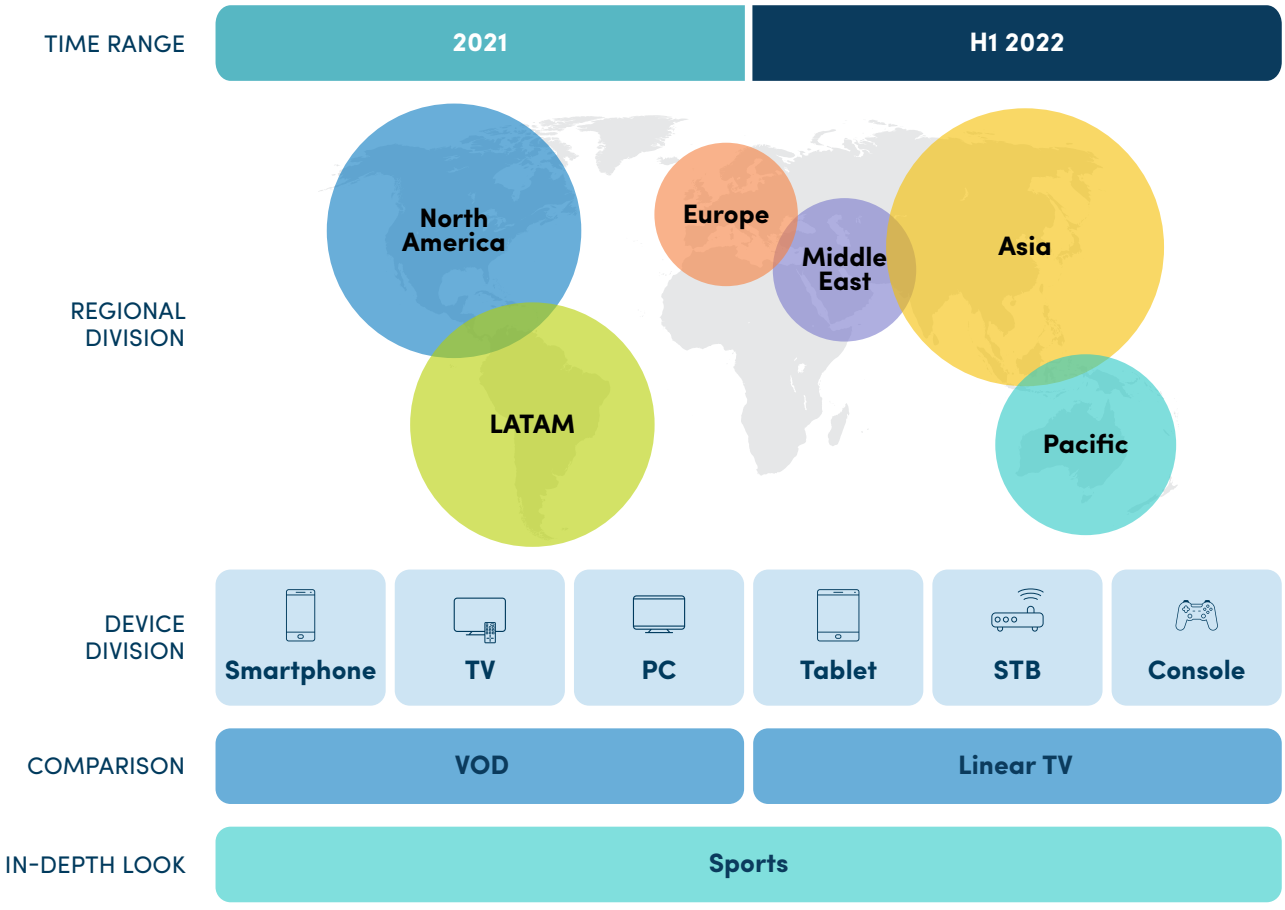
1.2 About this report

This report examines the state of the video streaming industry on a global and regional scale, comparing data for the first half of 2022 with insights from the first half of 2021. It also includes comparisons with NPAW's previous video streaming industry reports.

All 2022 data insights featured in this analysis were extracted via the NPAW Suite from January 1, 2022, to June 30, 2022. They reflect real-time consumption and quality-of-experience data from NPAW's more than 160 clients around the globe, which include OTT providers, broadcasters, and telecom operators.

The findings are divided by geographical scope, type of content, and device. Additionally, the report provides deep dives into sports streaming and how quality affects engagement.

Our data sample



2. Global Findings

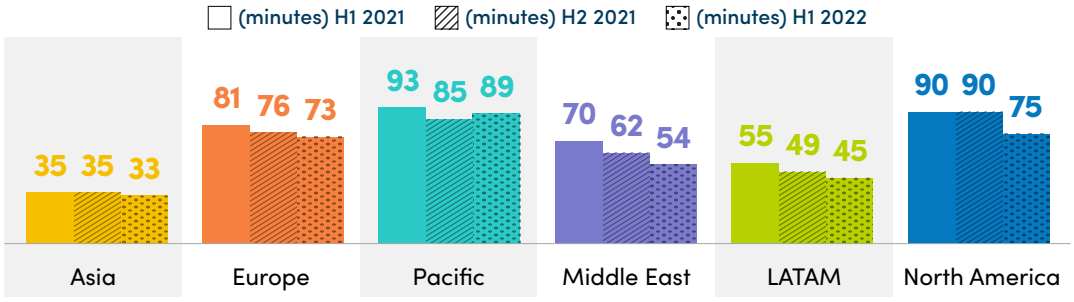
2.1 VOD

Daily consumption per service keeps dropping

After a global 9% drop in 2021 vs. 2020, **Avg. Daily Playtime** per user and VoD service continued to go down into the first half of 2022 as competition between services and market saturation increased.

Globally, individual VoD services experienced a gradual decline in daily consumption per user in the past three semesters, particularly in the second half of 2021. As a result, the Avg. Daily Playtime per user and service was 11% lower in the first six months of 2022 than in the same period last year. This drop, which is slightly bigger than the year-over-year decrease seen in 2021 vs. 2020, suggests the decline in consumption might be speeding up. Therefore, it will be interesting to keep an eye on what happens in the second half of 2022.

AVG. DAILY PLAYTIME PER USER AND SERVICE (MINUTES)



VOD Avg. Daily Playtime	2021 vs. 2020	H1 2022 vs. H1 2021
	-9.0%	-11.0%

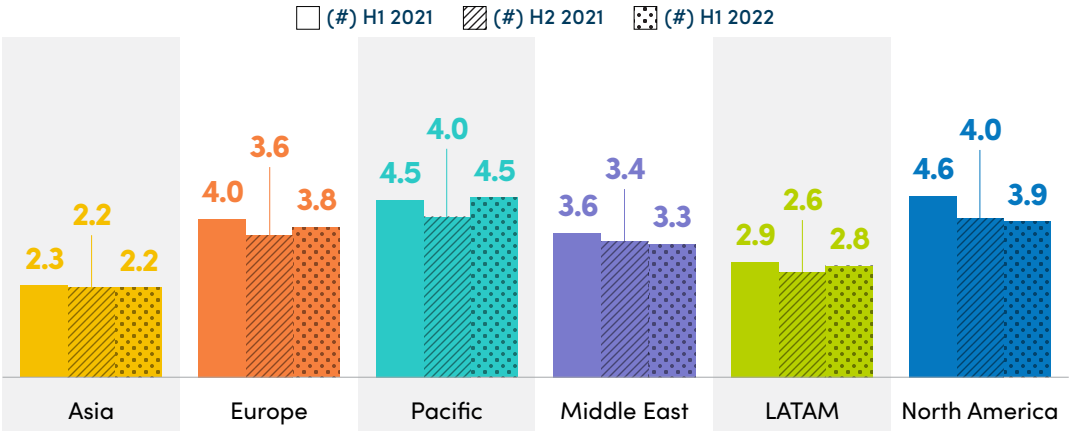
Consumers not only spent fewer minutes a day on each service in H1 2022, but they also watched slightly fewer VoD titles per day than a year before. On a global scale, the average VoD user watched about 3 titles per day and service, a 4% drop in the **Avg. Daily Number of Titles** compared with the same period the previous year.

VOD
Global Avg. Daily Number of Titles

H1 2022
3 titles
per user and service

Following an uptake in the beginning of 2022, the Pacific was the only region to recover H1 2021 levels, overtaking North America as the area where users watch the most titles per day. Asia remained the region with the lowest Avg. Daily Number of Titles per user and service.

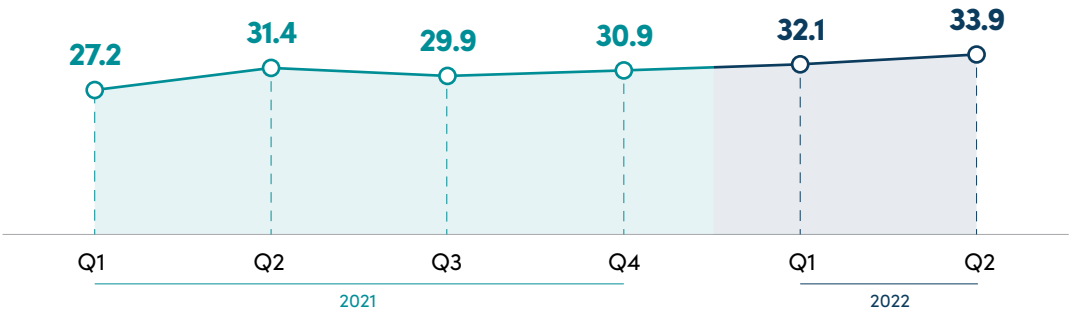
AVG. DAILY NUMBER OF TITLES PER USER AND SERVICE (# TITLES)



Despite this global reduction in the Avg. Daily Number of Titles, global **Avg. Media Duration**, which had been rising in recent quarters, went up by 6% in H1 2022 compared with H1 2021. It appears then, that consumers are increasingly favoring longer forms of content.

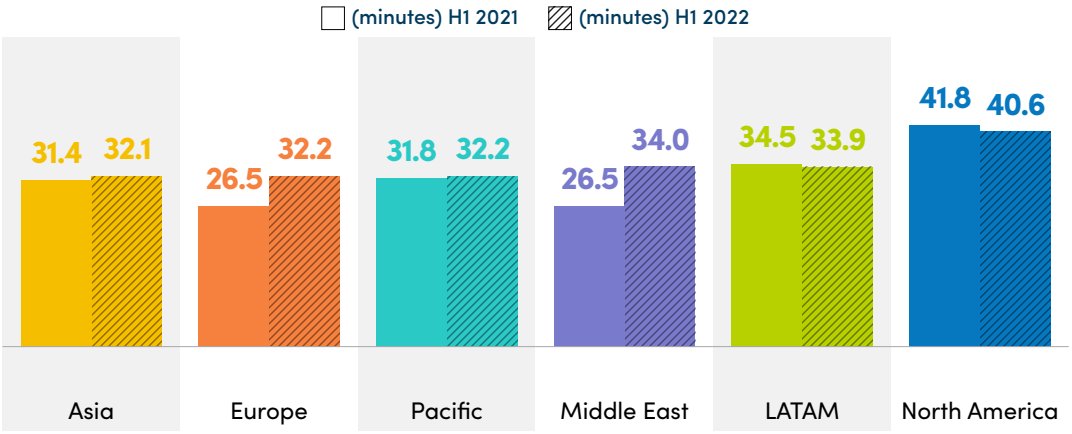
In absolute terms, North America, as it had been the case for the previous four quarters, was where users watched the longest titles in the first half of 2022 (40.5 minutes on average). All other regions were closer to the global average of 32.6 minutes per title.

AVG. MEDIA DURATION (MINUTES) - GLOBAL



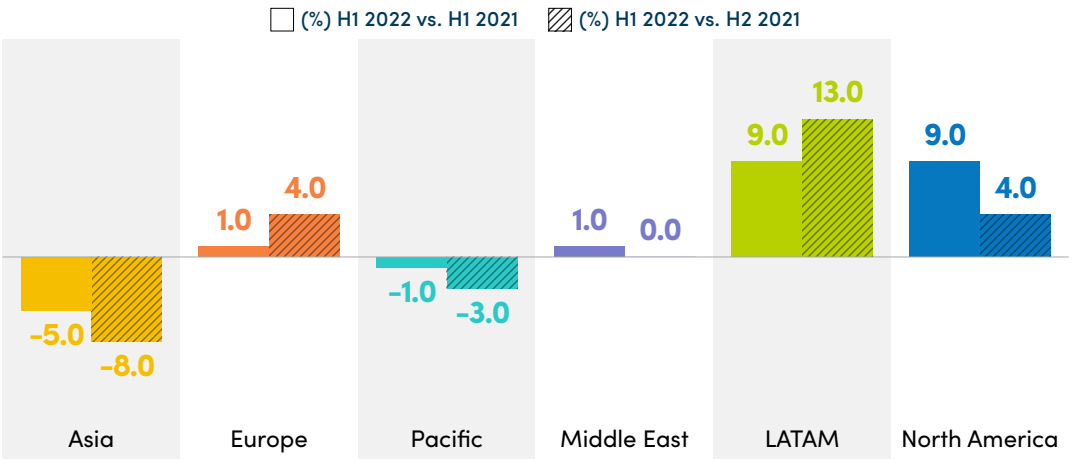
Diving deeper into the trends, it is worth noting that the Middle East and Europe were the regions to experiment the most significant increases in Avg. Media Duration in H1 2022 vs. H1 2021. Meanwhile, Latin America and, in fact, North America too, were the only regions to see a decrease in media duration for the same period. Although these were small drops, it will be interesting to see if the regions where title duration has been increasing the most (Middle East and Europe) can maintain this growth and eventually catch up with North America.

AVG. MEDIA DURATION (MINUTES) - REGIONAL



Finally, the global **Avg. Completion Rate** for VoD increased too in the first half of 2022 compared with the same period last year. Albeit small, there was a 2% rise in the proportion of titles that users finished watching, mostly driven by increases in Latin America and North America. Especially for these two regions, this means the average viewer was a bit more satisfied with the content and experience they got this time around. Meanwhile, the Pacific and Asia experienced the opposite effect.

AVG. COMPLETATION RATE (CHANGE)



They were the only regions to see a lower Avg. Completion Rate in H1 2022 compared with H1 2021, reversing the small rise they had been experiencing throughout 2021.

In conclusion, and when compared with a year before, the first half of 2022 saw the average global VoD consumer watch content on each service for less time per day, favoring fewer but longer titles and, overall, being more likely to finish the content they started.

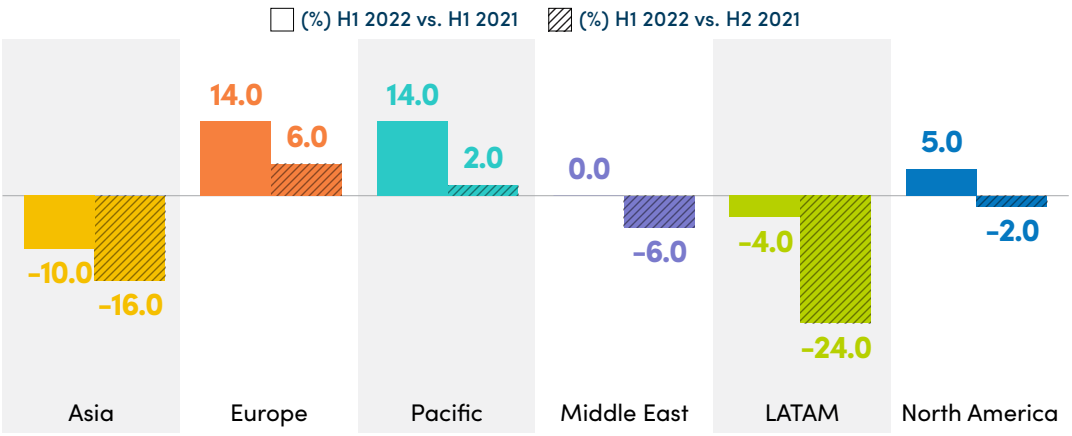
Bitrate is peaking, with quality of experience being prioritized

Following an 11.1% yearly increase in 2021 vs. 2020, **Avg. Bitrate** grew globally by a more moderate 3% in H1 2022 vs. H1 2021 after experiencing a peak in the second half of 2021.

Europe and the Pacific were the only regions to experience a significant improvement in Avg. Bitrate in H1 2022 compared with the same period last year. The Middle East returned to H1 2021 levels, while Latin America and, especially, Asia saw bitrates drop.

These numbers suggest that Avg. Birate for VoD is increasing at a slower pace than before, and even going down in some regions.

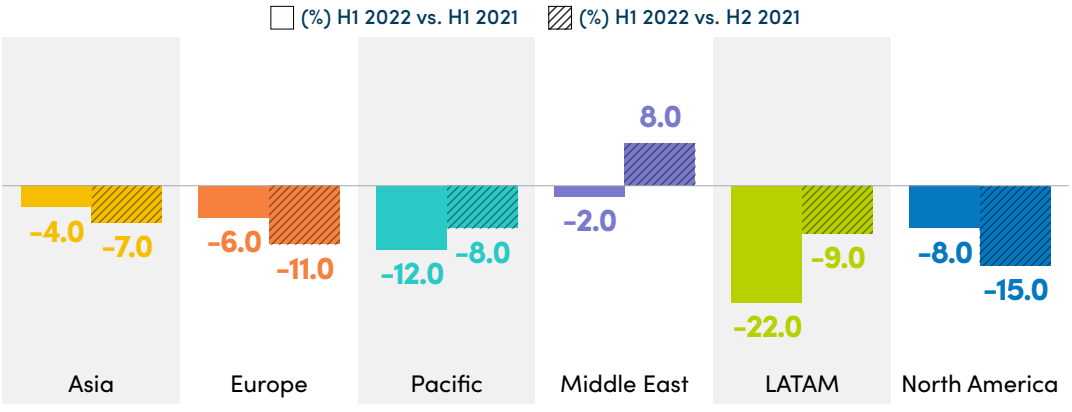
AVG. BITRATE (CHANGE) - VOD



It seems that, after consistently increasing in recent years, bitrates are experiencing a correction. This reversal could be caused by multiple factors, one of them being that providers have decided to take the foot off the bitrate gas to focus on continuing to deliver a better and better quality of experience in the most efficient way.

Continuing to improve the viewing experience is critical to retaining users and increasing their engagement in a time of increasing competition and falling Avg. Daily Playtime per user and service. But this could be a challenging feat when Avg. Bitrate levels increase too quickly, as the evolution of **Avg. Buffer Ratio** shows.

AVG. BUFFER RATIO (CHANGE) - VOD

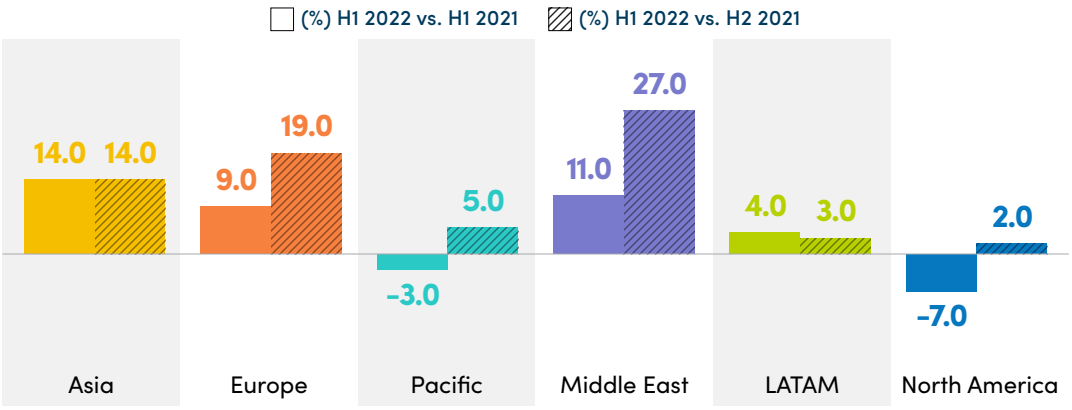


Although, globally, the Avg. Buffer Ratio was 8% lower in H1 2022 than for the same period last year, this reduction was significantly smaller than the 22.4% improvement registered in 2021 vs. 2020 — a slowdown that coincided with a peak in the global Avg. Bitrate in the second half of 2021. In other words: higher bitrates could have been making it harder for providers to continue improving Avg. Buffer Ratio significantly.

The only thing left to do, then, would have been to limit or revert bitrate improvements and increase **Avg. Join Time** to let the video load, decreasing the chances for buffering. And that seems to be exactly what happened at a global level.

In comparison with the 5% global increase in Avg. Join Time experienced in 2021 vs. 2020, the first half of 2022 saw a global 9% spike in the time it takes for a video to start playing when compared with the same period last year.

AVG. JOIN TIME (CHANGE) - VOD

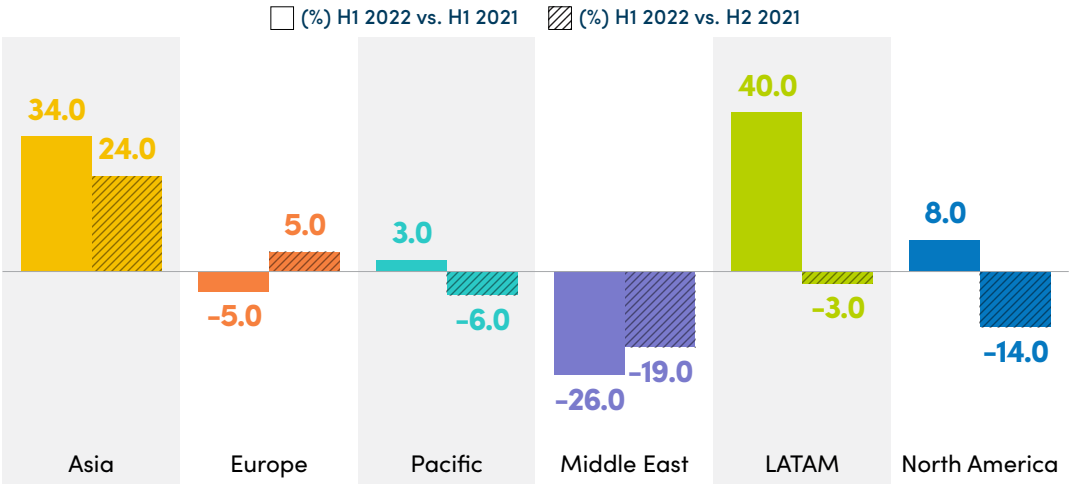


But, in general, the longer the initial loading time, the higher the chance that users exit the video player before the video starts. Accordingly, global **Exit Before Video Start (EBVS)** figures increased by 12% in H1 2022 compared with the same period the previous year — a significant spike after a marginal 0.5% increase in 2021 vs. 2020.

However, while those were the general trends on a global scale, the various regions exhibited different behaviors and strategies. For instance, the Pacific and North America were the only regions with a higher Avg. Bitrate in H1 2022 vs. H1 2021 that managed to reduce Avg. Buffer Ratio while also decreasing Avg. Join Time and EBVS.

Europe increased bitrates without an increment in Avg. Buffer Ratio by expanding Avg. Join Time, but without seeing a spike in EBVS. These regional discrepancies can be explained by differences in Internet speeds and infrastructure, varying user expectations, and different levels of tolerance to higher loading times.

EBVS (CHANGE) - VOD



Summarizing all the above, global VoD bitrates approached a peak as providers increased Avg. Join Time to keep buffering at bay, resulting in a rise in EBVS after it remained stable last year. On a regional level, quality metrics evolved slightly differently depending on the region, highlighting the impact of local behavior trends, the device being used, and network infrastructure.

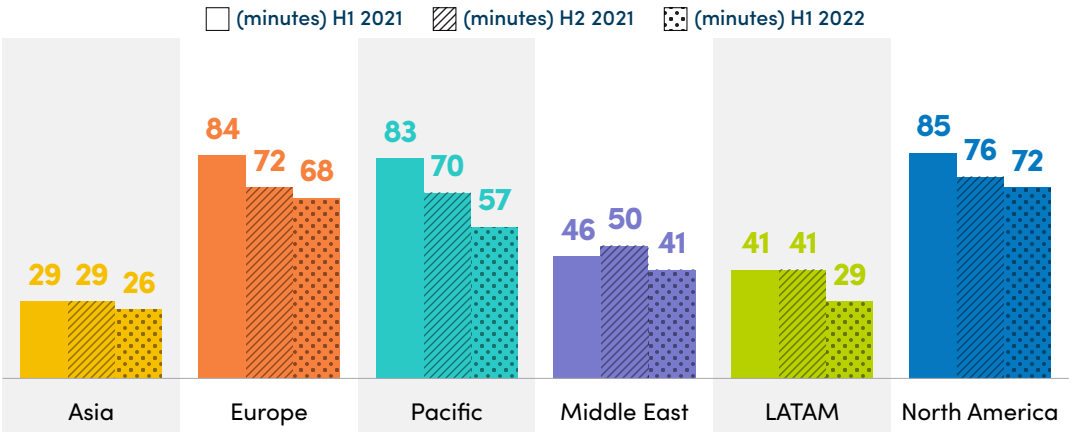
2.2 Linear TV

Linear TV consumption per user and service takes a hit, reversing the upward trend

After a rise in online Linear TV consumption in 2021 vs. 2020, global Avg. Daily Playtime per user and service has been decreasing for the last three semesters and was 18% lower in H1 2022 than a year before. The drop was felt across all regions, with the Pacific and Latin America experiencing the biggest year-over-year declines.

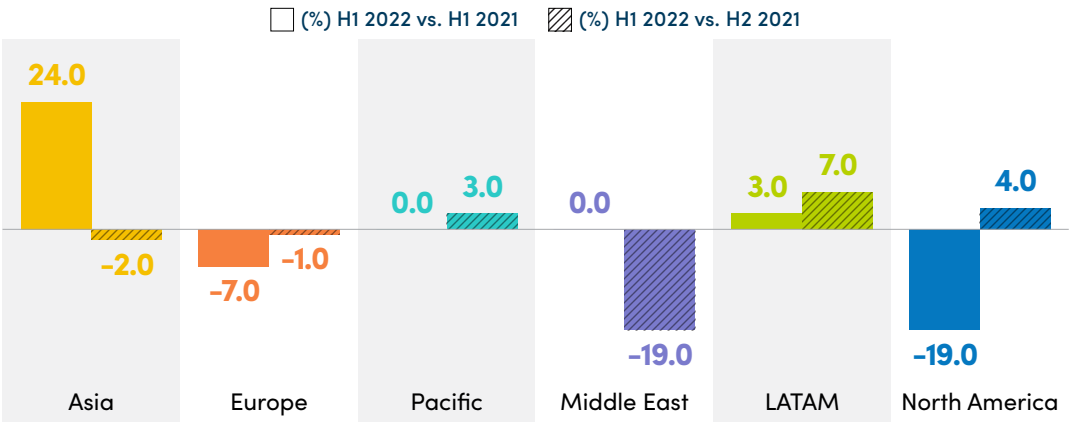
This reversal suggests that online Linear TV providers, like VoD platforms, are feeling the effects of increased competition. And users not only are spending less time on each service; they are also watching linear content for shorter periods at a time.

AVG. DAILY PLAYTIME PER USER AND SERVICE (MINUTES)



Meanwhile, and following a 3% increase in 2021 vs. 2020, global **Avg. Effective Playtime** experienced a minor 1% decline in H1 2022 compared with the first semester of 2021. This metric, which should not be confused with **Avg. Daily Playtime** — the total time each user spends a day watching content on single platforms — measures for how long a user watches content each time they hit play. For online Linear TV, the Avg. Effective Playtime is a good indicator of the length of the viewing sessions. Therefore, these became slightly shorter in H1 2022. You can check this cheat sheet for more information on the various metrics covered throughout the report.

AVG. EFFECTIVE PLAYTIME (CHANGE) - LINEAR TV



At the regional level, variations from region to region reinforce the idea that Linear TV is more subject to changes in local consumption trends than VoD is.

Asia was the only region to see a significant year-over-year increase in Avg. Effective Playtime, while Europe, and especially North America, saw a drop. The Pacific, the Middle East, and Latin America more or less maintained H1 2021 levels.

Overall, then, the average global Linear TV consumer spent less viewing time per day on each service and did so in slightly shorter sessions. Local consumption trends resulted in more variation at the regional level.

After a period of consolidation, Linear TV quality gets a boost

Linear streaming quality experienced a shake-up in H1 2022 that ended a period of consolidation.

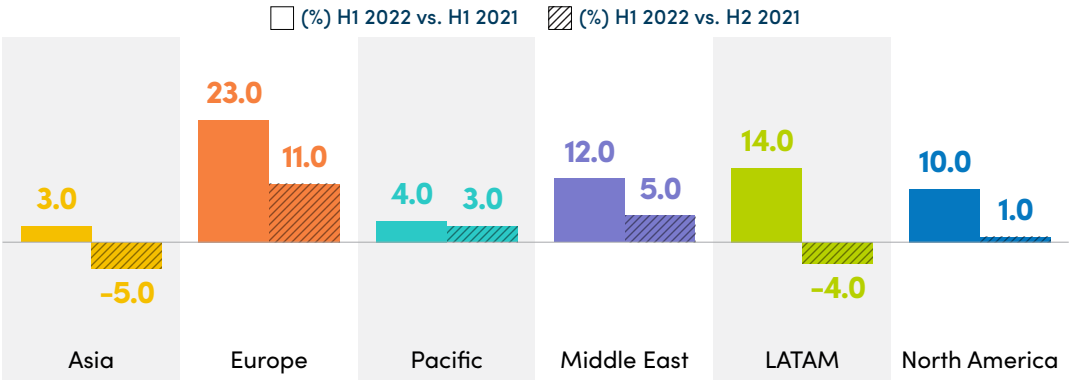
While the global Avg. Bitrate for linear content has been increasing since 2019, the rate at which it improves had slowed down over the last two years, going from a 12.7% hike in 2020 vs. 2019 to a more moderate 8.8% increase in 2021 vs. 2020. The rate at which the global Avg. Join Time increased had also been going down.

Paired with the fact that the Avg. Buffer Ratio had decreased significantly (-21.5% in 2021 vs. 2020), these slowdowns suggested that streaming providers were starting to get the hang of Linear TV quality, managing to improve it by only applying increasingly smaller changes.

Avg. Bitrate - Global		Avg. Buffer Ratio - Global	
2020 vs. 2019	2021 vs. 2020	2020 vs. 2019	2021 vs. 2020
12.7%	**8.8%**	**-1.3%**	**-21.5%**

However, the first half of 2022 saw a reversal of this trend, with both the global Avg. Bitrate and the Avg. Join Time increasing significantly compared with the same period last year.

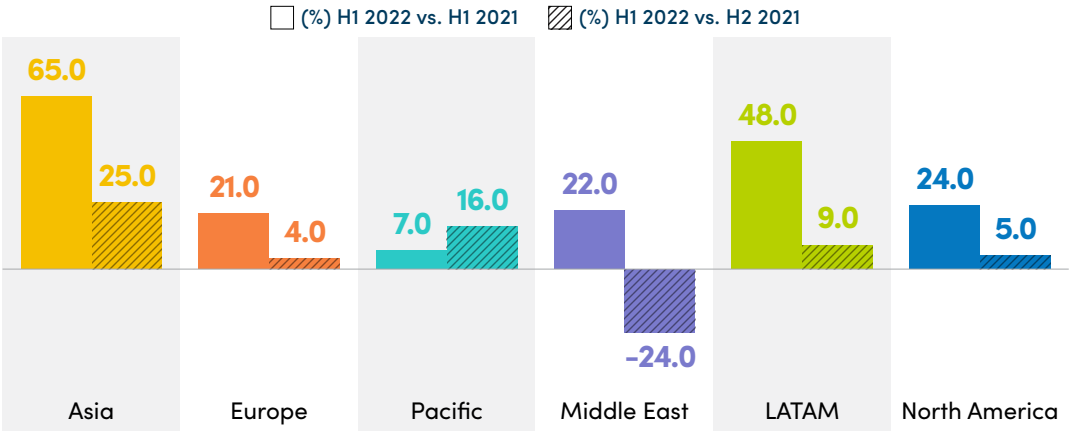
AVG. BITRATE (CHANGE) - LINEAR TV



The rate of **Avg. Bitrate** improvements sped up again, going up by 14% globally compared with H1 2021. Europe saw the biggest year-over-year increase, while Asia and the Pacific saw the smallest ones.

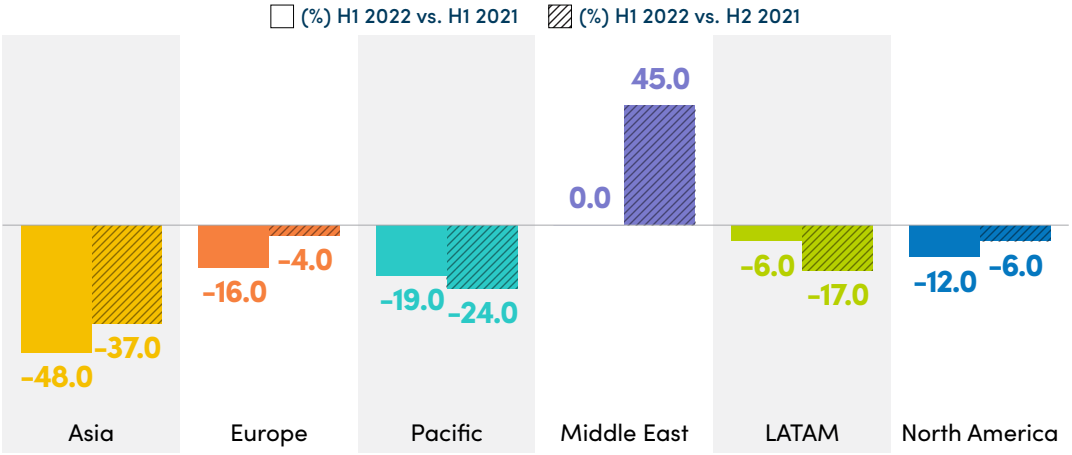
Additionally, after a more moderate 7.2% increase in 2021 vs. 2020, the **Avg. Join Time** was 36% higher in the first half of 2022 than in the same period last year. Asia and Latin America experienced major year-over-year hikes, but Europe, the Middle East, and North America saw significant increases as well.

AVG. JOIN TIME (CHANGE) - LINEAR TV



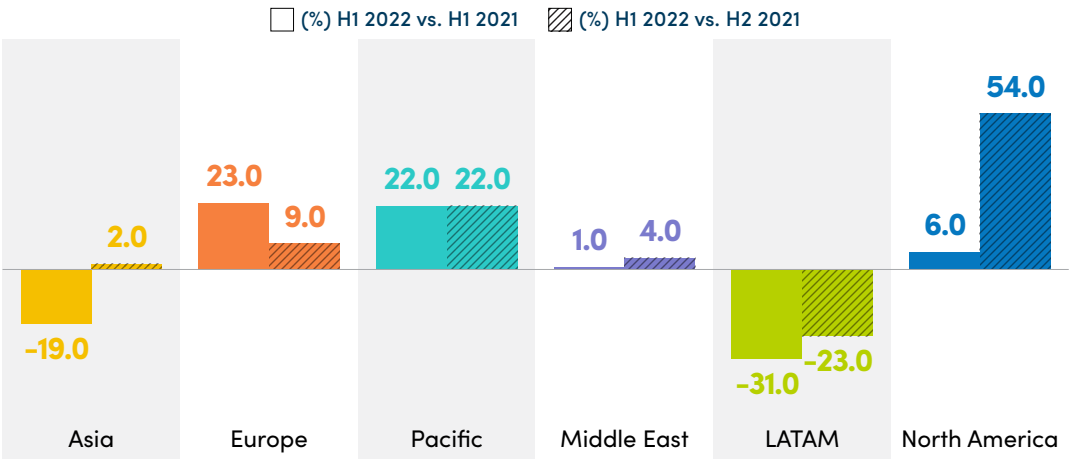
Globally, this increase in the Avg. Join Time resulted in a 24% lower **Avg. Buffer Ratio** in H1 2022 compared with the first half of last year. After increasing bitrates by the lowest percentage of all regions the Avg. Join Time by the highest one, Asia also experienced the biggest year-over-year decrease in buffering. All other regions saw a more moderate reduction in Avg. Buffer Ratio, while the Middle East maintained H1 2021 levels.

AVG. BUFFER RATIO (CHANGE) - LINEAR TV



Interestingly, **EBVS** did not show as strong a correlation with Avg. Join Time for Linear TV as it did for VoD. Despite global Avg. Join Time having increased significantly, EBVS was 1% lower in H1 2022 than in the first half of 2021. This suggests that, on a global scale, Linear TV consumers are more willing to wait for a live feed to load than for a video on-demand.

EBVS (CHANGE) - LINEAR TV



However, like with VoD, different behavioral patterns can be seen on a regional level. For instance, the regions that increased their Avg. Join Time the most year-over-year (Asia and Latin America), were also the only ones to experience a significant drop in EBVS in H1 2022. Therefore, viewers in these regions might have a higher tolerance for longer loading times than consumers from other regions.

In conclusion, overall global Linear TV quality got a boost after a period of stabilization. The Avg. Join Time increased significantly to support accelerated bitrate improvements while achieving lower buffering levels. In addition, the average global Linear TV viewer seemed to tolerate longer loading times than for VoD. Again, regional variations demonstrated the local nature of Linear TV and the consumers' viewing behavior.

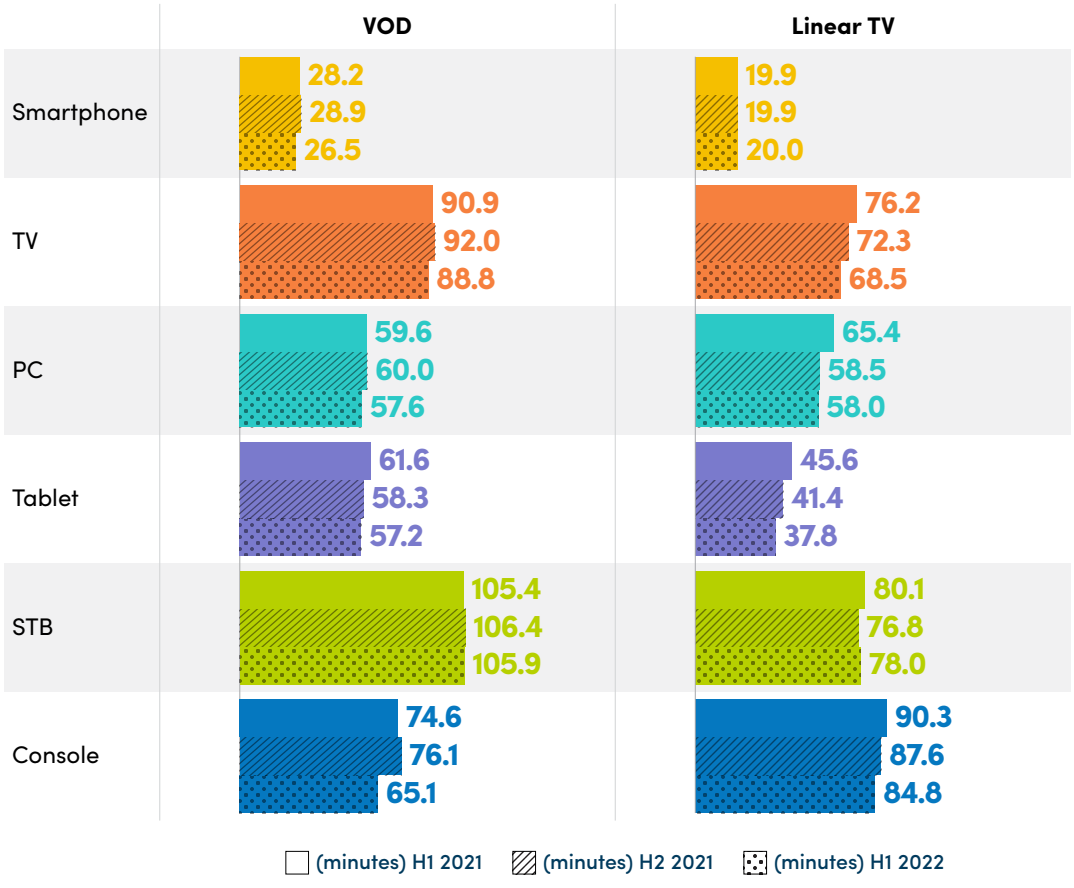
3. Device insights

3.1 Big screens get the most viewing time, but smartphones remain a popular device

All devices experienced very similar or slightly lower **Avg. Daily Playtime** figures across VoD and Linear TV over the last three semesters. Again, this slightly downward trend is nothing but a reflection of the effects of increased competition discussed in previous chapters.

In absolute numbers, big-screen devices (smart TVs, STBs, and consoles) retained the highest Avg. Daily Playtime per user and service in H1 2022 for both VoD and Linear TV.

AVG. DAILY PLAYTIME PER USER AND SERVICE (MINUTES) - GLOBAL

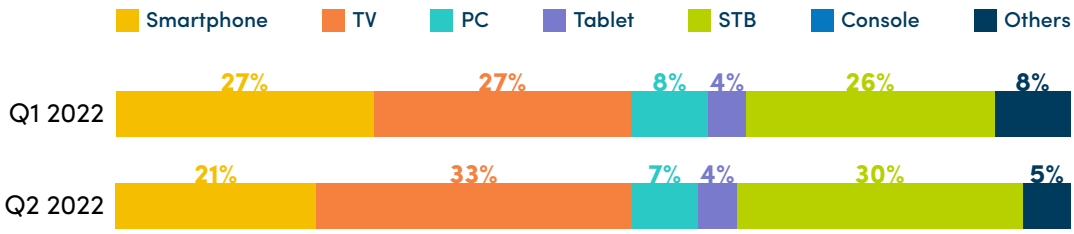


For VoD, set-top boxes (STBs) remained the device on which users spent the most time per day watching content, with smart TVs and consoles following. For Linear TV, consoles led the way in Avg. Daily Playtime, followed by STBs and TVs. Smartphones had the lowest daily consumption per user and service of all devices for both VoD and Linear TV.

However, Avg. Daily Playtime numbers need to be interpreted alongside **Device Share** information — i.e. the share of the total number of plays that each device represents.

Whereas, for example, consoles registered the highest Avg. Daily Playtime per user for Linear TV, they accounted for a negligible percentage of the total number of plays for this type of content. This means that, while console users tend to spend a lot of time on these devices — probably because they are using them in substitution of a smart TV or STB — daily consumption trends in consoles are not representative of the space.

LINEAR TV DEVICE SHARE - GLOBAL

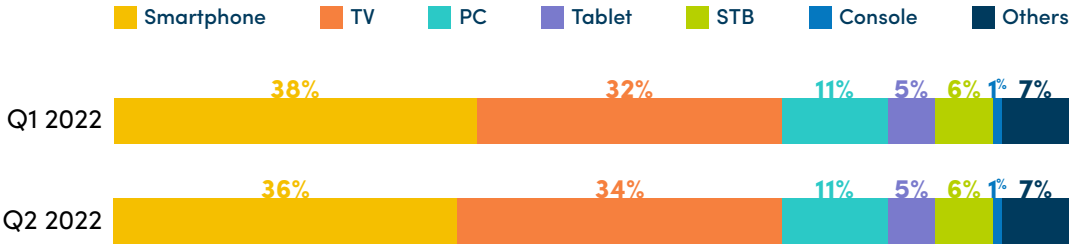


The opposite can be said for smartphones, which have consistently had the lowest Avg. Daily Playtime numbers of all devices for VoD and Linear TV but represent a significant share of all plays for the two types of content.

Although having experienced a progressive decrease in share in Q1 and Q2 2022, smartphones remained the devices with the most VoD plays in H1 2022. TVs were almost on par, having consistently grown their share for the last three quarters.

For Linear TV, smart TVs had the biggest Device Share of all devices, with STBs and smartphones in second and third place respectively. Both TVs and STBs expanded their share of plays in the first two quarters of 2022 to the detriment of smartphones.

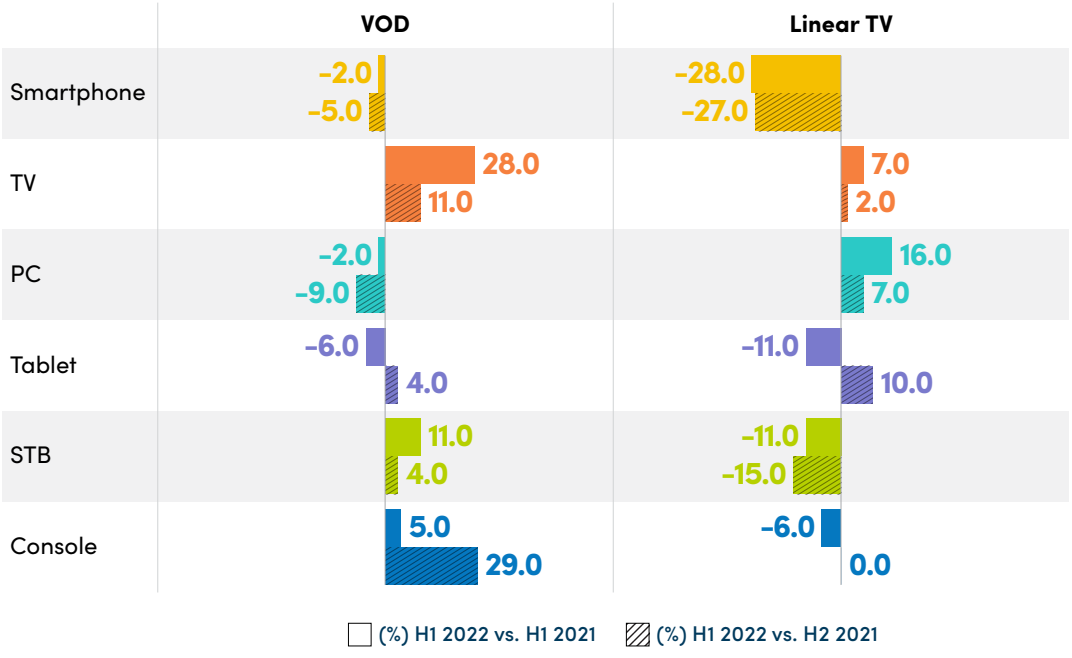
VOD DEVICE SHARE - GLOBAL



As for the **Avg. Effective Playtime**, and in absolute terms, big screens registered the longest playtimes per play for both VoD and Linear TV in H1 2022, while smartphones the lowest ones.

Looking at the year-over-year change, big screens were also the only devices to see increases in Avg. Effective Playtime in H1 2022 for VoD, especially TVs. The rest of devices saw small declines.

AVG. EFFECTIVE PLAYTIME (CHANGE) - GLOBAL



For Linear TV, however, TVs were the only big-screen to increase Avg. Effective Playtime year-over-year in the first half of 2022, although not as much as for VoD. PCs saw the biggest increase in Avg. Effective Playtime for linear content in H1 2022 compared with the same period last year, while smartphones saw a major drop in the length of viewing sessions.

In summary, while daily playtime per user and service decreased for all devices, the average global viewer spent most of their daily viewing time on big-screen devices for both VoD and Linear TV. Users also favored these devices for increasingly longer viewing sessions, especially TVs and STBs, with the latter being the only device type to see significant increases in Avg. Effective Playtime across both VoD and Linear.

Meanwhile, TVs chipped away at the Device Share of smartphones, almost catching up with these handheld devices for VoD and becoming the top device for Linear TV. STBs also took some of the Linear TV share away from smartphones to gain second place for this type of content.

While smartphones represented a high percentage of plays and remain the most popular device in terms of user reach — with 5.31 billion unique users globally or 67.1% of the world's population — their low Avg. Daily Playtime and declining Avg. Effective Playtime numbers suggest that streaming consumers reserve them for shorter, more frequent watching sessions, using them to stream on-the-go or when bigger-screen devices are not available.

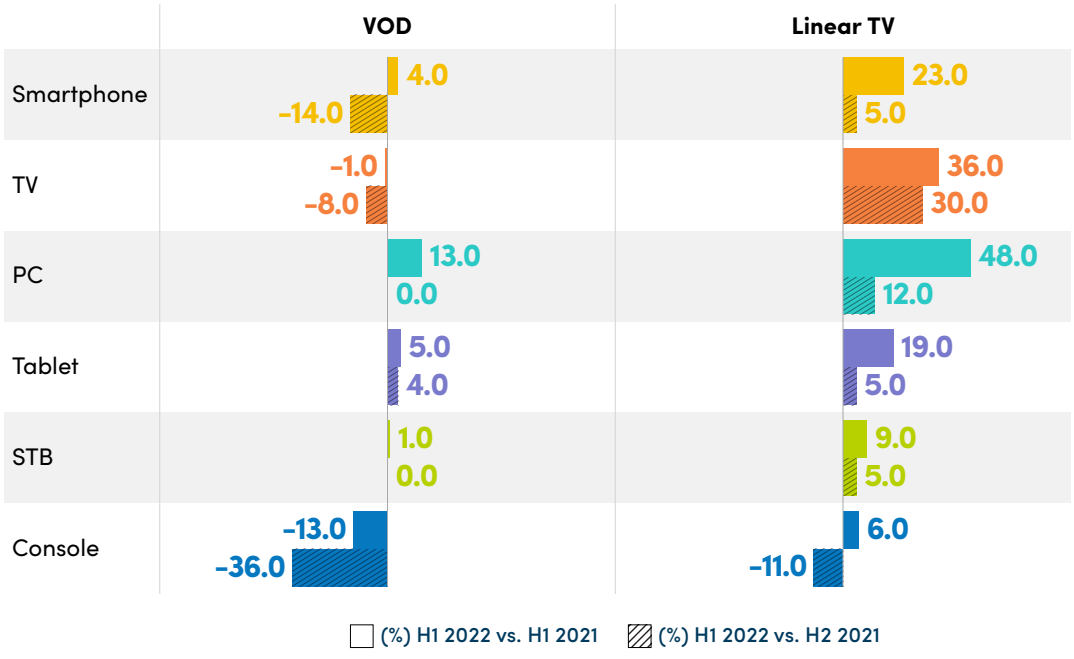
3.2 Quality across devices

As seen in the previous chapter, the global **Avg. Bitrate** went up year-over-year in the first half of 2022, particularly for Linear TV. But bitrates evolved slightly different on a device level.

For VoD, PCs experienced the only significant rise in bitrate levels in H1 2022 compared with the same time the previous year. Consoles saw the steepest decline, while the rest of devices maintained more or less similar levels. Meanwhile, the Avg. Bitrate for Linear TV improved across all devices, especially for PCs, TVs, and smartphones.

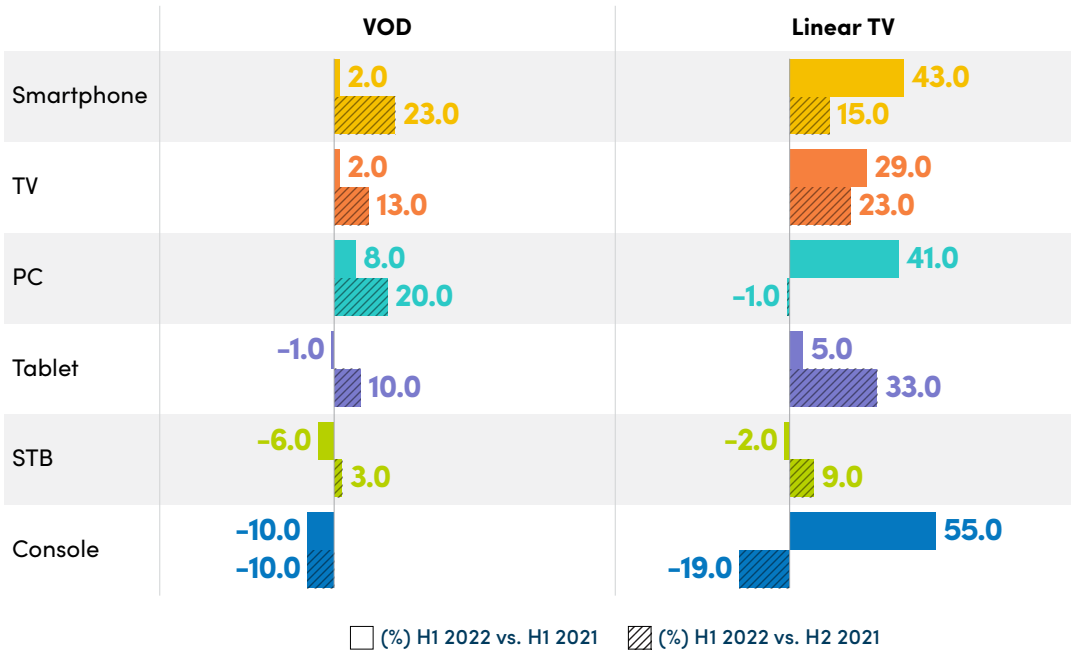
Interestingly, PCs saw the biggest bitrate improvements of all devices for both VoD and Linear TV, which suggests they have been an area of focus for streaming providers despite their relatively low Device Share and Avg. Daily Playtime figures.

AVG. BITRATE (CHANGE) - GLOBAL



As it tends to be the case, the increase in the global Avg. Bitrate came hand in hand with a sharp year-over-year spike in the global **Avg. Join Time** in H1 2022 for both VoD and Linear TV, but especially for the latter.

AVG. JOIN TIME (CHANGE) - GLOBAL



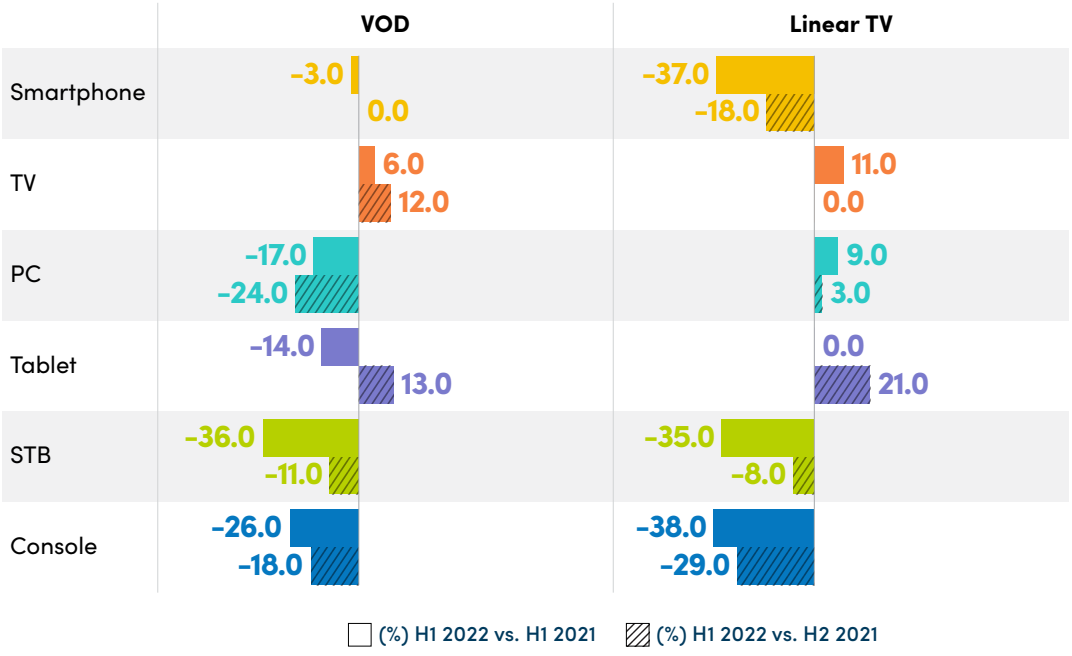
Initial loading times times for VoD increased for smartphones, TVs, and, in particular, for PCs. They decreased for tablets, STBs, and, especially, for consoles. Meanwhile, for Linear TV, most devices experienced much more significant bumps in the Avg. Join Time except for tablets and STBs, which saw a small increase and slight decline vs. the same time last year respectively.

Thanks to this balancing between the Avg. Bitrate and the Avg. Join Time, providers managed to reduce the global **Avg. Buffer Ratio** for both VoD and Linear TV. However, the various devices showed slightly different behaviors, especially when comparing VoD vs. Linear TV.

All devices experienced a drop in buffering for VoD except for TVs, which saw a slight year-over-year increase in the metric in H1 2022. STBs and consoles saw the biggest improvements in the Avg. Buffer Ratio for this type of content, followed by PCs and tablets.

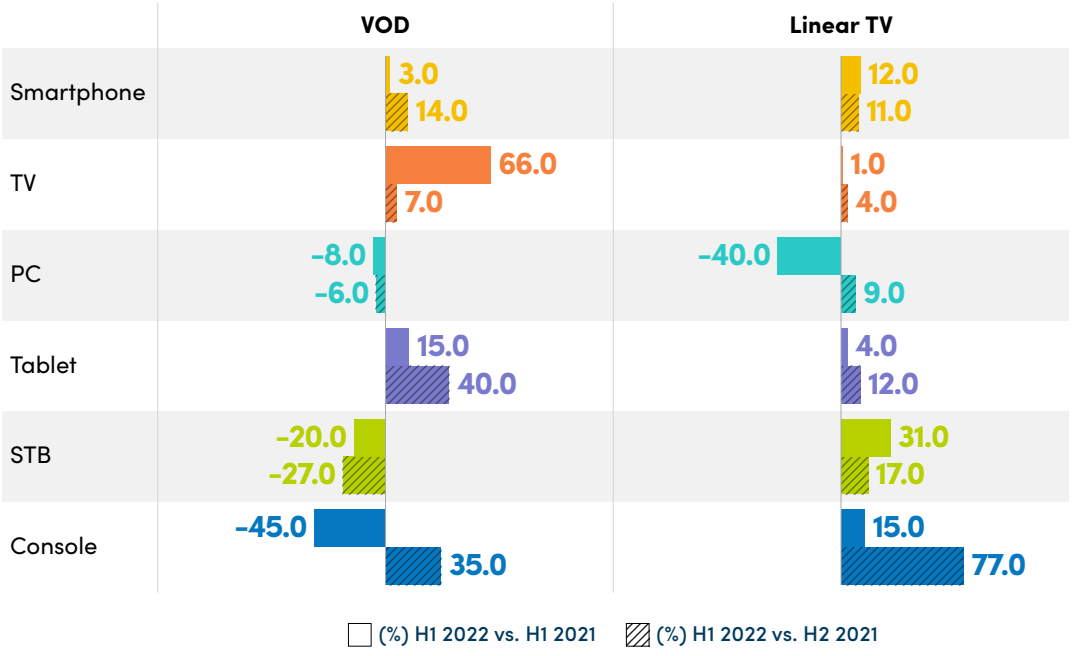
For Linear TV, smartphones saw a sharp reduction in buffering, joining consoles and STBs as the devices to improve their Avg. Buffer Ratio the most. TVs experienced an even bigger surge in buffering for Linear TV than they did for VoD, while PCs experienced an increase. Tablets retained H1 2021 buffering levels.

AVG. BUFFER RATIO (CHANGE) - GLOBAL



Finally, and as seen in the previous chapter, global **EBVS** numbers saw a significant surge in H1 2022 vs. the previous year for VoD, as well as a very small reduction for Linear TV. However, the change in EBVS depended not as much on rising loading times as it did on the type of content and device. This highlights the importance of the different consumption trends and user expectations across devices.

EBVS (CHANGE) - GLOBAL



For VoD, TVs saw the biggest increase in EBVS, while consoles and, especially, STBs registered the biggest declines. For Linear TV, EVBS was up for all devices except for PCs, which saw a sharp year-over-year decrease in H1 2022. STBs experienced the biggest increase in EBVS for Linear TV,, followed by consoles and smartphones.

In conclusion, when looking at general device quality trends in the first half of 2022, quality improvements across devices were much more substantial for Linear TV than for VoD. This aligns with the global VoD and Linear TV quality trends discussed in the previous chapter.

Additionally, and taking into account all the quality metrics discussed in this chapter, STBs saw the biggest overall quality improvement of all devices, achieving higher bitrates while reducing buffering and the Avg. Join Time — all while seeing only a significant enough rise in EBVS for Linear TV.

Streaming providers seemed to struggle to find the right formula for other devices. For instance, the Avg. Bitrate for smartphones and TVs increased by quite a lot for Linear TV. However, this spike brought along a sharp increase in Avg. Join Time, Avg. Buffer Ratio, and EBVS.

VOD - Key device insights

H1 2022 vs. H1 2021

Smartphone

Avg. Daily Playtime	Avg. Effective Playtime
-6%	-2%
Avg. Bitrate	**Avg. Buffer Ratio**
4%	-3%
Avg. Join Time	**EBVS**
2%	3%

TV

Avg. Daily Playtime	Avg. Effective Playtime
-2%	28%
Avg. Bitrate	**Avg. Buffer Ratio**
-1%	6%
Avg. Join Time	**EBVS**
2%	66%

PC

Avg. Daily Playtime	Avg. Effective Playtime
-3%	-2%
Avg. Bitrate	**Avg. Buffer Ratio**
13%	-17%
Avg. Join Time	**EBVS**
8%	-8%

Tablet

Avg. Daily Playtime	Avg. Effective Playtime
-7%	-6%
Avg. Bitrate	**Avg. Buffer Ratio**
5%	-14%
Avg. Join Time	**EBVS**
-1%	15%

STB

Avg. Daily Playtime	Avg. Effective Playtime
0%	11%
Avg. Bitrate	**Avg. Buffer Ratio**
1%	-36%
Avg. Join Time	**EBVS**
-6%	-20%

Console

Avg. Daily Playtime	Avg. Effective Playtime
-13%	5%
Avg. Bitrate	**Avg. Buffer Ratio**
-13%	-26%
Avg. Join Time	**EBVS**
-10%	-45%

Linear TV - Key device insights

H1 2022 vs. H1 2021

Smartphone

Avg. Daily Playtime	Avg. Effective Playtime
1%	-28%
Avg. Bitrate	**Avg. Buffer Ratio**
23%	-37%
Avg. Join Time	**EBVS**
43%	12%

TV

Avg. Daily Playtime	Avg. Effective Playtime
-10%	7%
Avg. Bitrate	**Avg. Buffer Ratio**
36%	11%
Avg. Join Time	**EBVS**
29%	1%

PC

Avg. Daily Playtime	Avg. Effective Playtime
-11%	16%
Avg. Bitrate	**Avg. Buffer Ratio**
48%	9%
Avg. Join Time	**EBVS**
41%	-40%

Tablet

Avg. Daily Playtime	Avg. Effective Playtime
-17%	-11%
Avg. Bitrate	**Avg. Buffer Ratio**
19%	0%
Avg. Join Time	**EBVS**
5%	4%

STB

Avg. Daily Playtime	Avg. Effective Playtime
-3%	-11%
Avg. Bitrate	**Avg. Buffer Ratio**
9%	-35%
Avg. Join Time	**EBVS**
-2%	31%

Console

Avg. Daily Playtime	Avg. Effective Playtime
-6%	-6%
Avg. Bitrate	**Avg. Buffer Ratio**
6%	-38%
Avg. Join Time	**EBVS**
55%	15%

4. Deep dive: sports

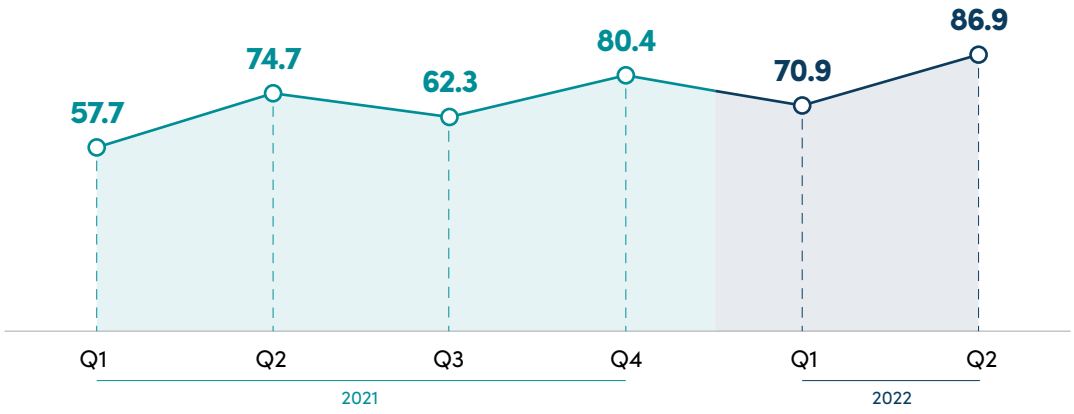
4.1 A big year so far for sports

Sports streaming did not disappoint in a first half of a year packed with major sporting events, opening with the Beijing Winter Olympics and closing with the end of the season for major sports leagues.

Globally, H1 2022 saw a 12% increase in the **Avg. Daily Playtime** per user and service for VoD when compared to the same period last year. Linear TV sports consumption saw a similar year-over-year increase, registering a 13% Avg. Daily Playtime in H1 2022 compared with the first half of 2021.

Therefore, sports fans spent considerably more time per day watching sports content on each service. But the tremendous potential for engagement that sports content offers really comes into perspective when looking at the absolute Avg. Daily Playtime for this content.

AVG. DAILY PLAYTIME PER USER AND SERVICE (MINUTES) - LINEAR TV

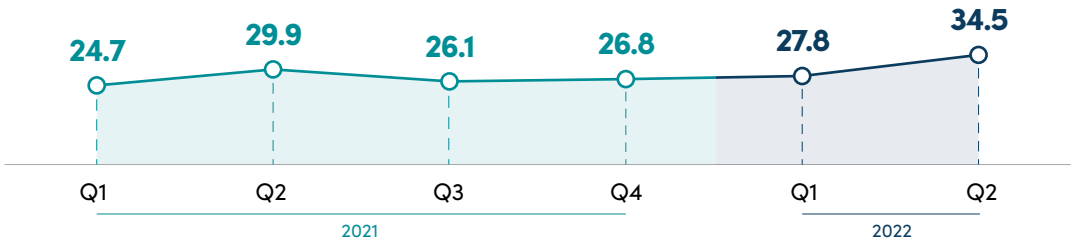


LINEAR TV SPORTS
Avg. Daily Playtime

H1 2022 vs. H1 2021
13.0%

For instance, in absolute terms, the Avg. Daily Playtime for Linear TV sports was almost double the global average for generic live content in H1 2022 — a testament to the boom the streaming of live sporting events is currently experiencing, as well as the power it has to propel the industry forward.

AVG. DAILY PLAYTIME PER USER AND SERVICE (MINUTES) - VOD



VOD SPORTS
Avg. Daily Playtime

H1 2022 vs. H1 2021
12.0%

Finally, looking at the evolution of **Avg. Effective Playtime** in H1 2022 vs. the same time the previous year, the amount of time each user spent watching content per each play dropped significantly for both VoD (-36%) and Linear TV (-34%). This means that, although users spent more time per day watching sports content on each platform, they did so in shorter sessions — a major trend reversal compared with the 12.3% and 23% increments experienced in 2021 vs 2020 for VoD and Linear TV respectively.

VOD SPORTS
Avg. Effective Playtime

2021 vs. 2020
12.3%

H1 2022 vs. H1 2021
-36.0%

LINEAR TV SPORTS
Avg. Effective Playtime

2021 vs. 2020
23.0%

H1 2022 vs. H1 2021
-34.0%

In summary, sports streaming consumption received a huge boost in H1 2022 compared to the same period a year ago. Users streamed sports content for more time per day on each platform. However, they watched for shorter sessions at a time.

4.2 Trying to maintain a smooth viewing experience as consumption soars

As consumption increased, sports streaming providers played with the various streaming quality metrics to continue delivering the smooth viewing experience their users demand.

After experiencing yearly increases in 2021 vs 2020 for both VoD and Linear TV, global **Avg. Bitrate** increased by 7% for VoD sports in H1 2022 compared with the same period of 2021, while experiencing a 7% drop for Linear TV. In other words: bitrate improvements continued into 2022 for VoD, but took a downward turn for Linear TV, which had experienced a bigger yearly increase in 2021.

	2021 vs. 2020	H1 2022 vs. H1 2021
VOD SPORTS Avg. Bitrate	**4.8%**	**7.0%**
LINEAR TV SPORTS Avg. Bitrate	**6.2%**	**-7.0%**

At the same time, **Avg. Join Time** increased by a huge percentage for VoD (82%), while Linear TV experienced a more moderate 10% increase. This marks a reversal of the trend we saw in 2021 vs 2020, when Avg. Join Time dropped by 21.3% and 14.6% for VoD and Linear TV respectively.

	2021 vs. 2020	H1 2022 vs. H1 2021
VOD SPORTS Avg. Join Time	**-21.3%**	**82.0%**
LINEAR TV SPORTS Avg. Join Time	**14.6%**	**10.0%**

On the heels of such a big increase in Avg. Join Time, VoD sports providers achieved a 29% reduction in the **Avg. Buffer Ratio** in H1 2022 compared with the first half of 2021 — more than double the buffering improvements made in 2021 vs. 2020. It was the opposite case for Linear TV, with Avg. Buffer Ratio increasing by 2% after it had dropped by 22.6% in 2021.

	2021 vs. 2020	H1 2022 vs. H1 2021
VOD SPORTS Avg. Buffer Ratio	-14.2%	-29.0%
LINEAR TV SPORTS Avg. Buffer Ratio	-22.6%	2.0%

Finally, and despite the increases in Avg. Join Time, **EBVS** went down for both VoD (-4%) and Linear TV (-22%) when compared with the same period last year. The lack of a more clear correlation between EBVS and the rising Avg. Join Time, suggests that the users' tolerance to longer loading times really depends on the type of content being streamed, device-specific expectations, and differences in consumer behavior.

	2021 vs. 2020	H1 2022 vs. H1 2021
VOD SPORTS EBVS	-15.5%	-4.0%
LINEAR TV SPORTS EBVS	-1.3%	-22.0%

To conclude, sports streaming quality was a bit of a mixed bag in H1 2022, with VoD quality improving while Linear TV struggled to continue delivering a smooth experience. The spike in consumption for linear sports streaming could explain this phenomenon.

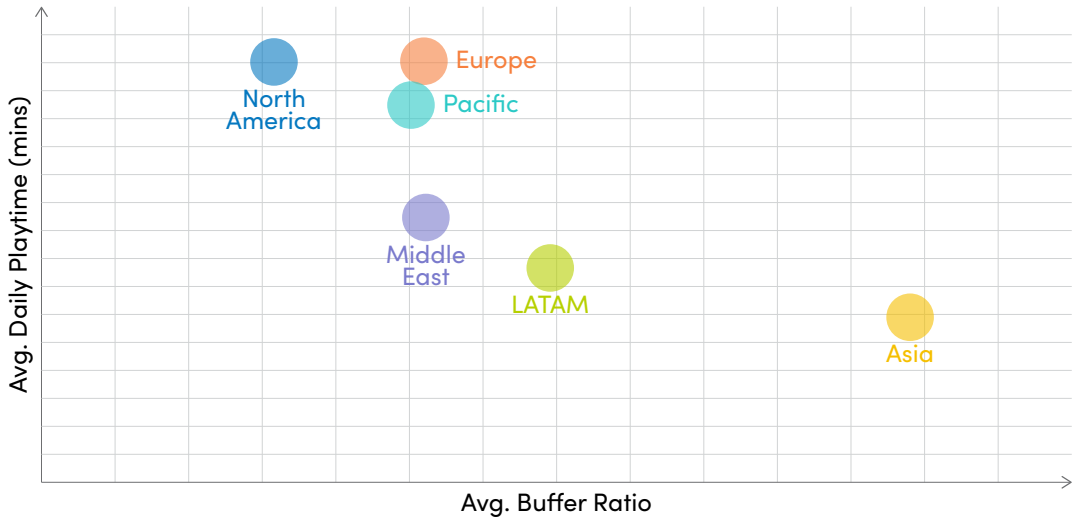
Whereas for VoD, viewing activity spreads throughout the day, the live streaming of sporting events brings everyone together at the same time. This puts a big strain on a platform's content delivery infrastructure, making it difficult for providers to maintain a smooth viewing experience at peak demand times.

5. Deep dive: how quality affects engagement

In today's hyper-competitive video streaming space, ensuring a good quality of experience is key to staying ahead of the competition and retaining users. Regardless of how good a platform's content is, users will engage less with it if their viewing experience is riddled with video quality drops, buffering, and in-stream crashes. With plenty of other options to choose from, a dissatisfied customer can quickly be lost to the competition.

However, it is not always easy to establish a clear correlation between changes in quality and engagement. That is exactly why we have compared quality metrics with engagement trends across regions for the last six quarters, showing the importance of protecting and improving the quality of experience as the key to a successful streaming strategy.

AVG. BUFFER RATIO VS. AVG. DAILY PLAYTIME - LINEAR TV



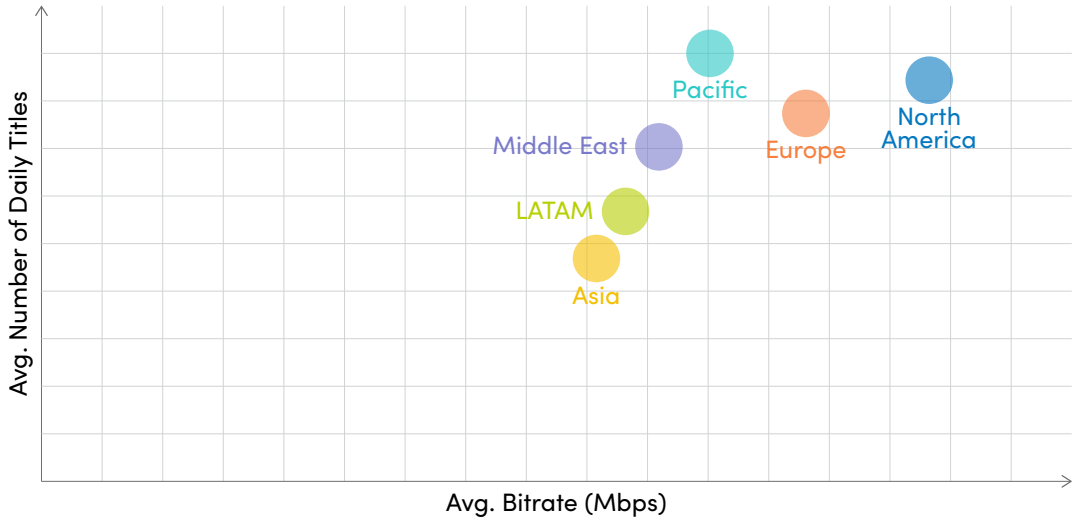
Avg. Buffer Ratio, for instance, is a major driver of user dissatisfaction and can severely impact the total time users spend on a streaming platform. By comparing Avg. Buffer Ratio with **Avg. Daily Playtime** per user and service for Linear TV, it can be clearly seen how the regions with lower buffering times (North America, Europe, and the Pacific) also registered the highest daily consumption throughout

the period. Conversely, as Avg. Buffer Ratio increased, the various regions saw progressively lower Avg. Daily Playtime figures.

It is worth noting, however, that, while this principle holds true overall, regional preferences and consumption trends are also an important part of the equation. That is why, for example, the Middle East had a significantly lower Avg. Daily Playtime than Europe or the Pacific while having a similar Avg. Buffer Ratio.

Another key metric for user engagement is **Avg. Bitrate** – the higher the video quality, the higher the consumption. For instance, by comparing Avg. Bitrate levels for VoD with the **Avg. Number Daily of Titles** per user and service, it can be observed how higher quality levels result in users watching more episodes per day. Therefore, a VoD service looking to increase binge-like behavior would need to push for higher quality levels if it wants to succeed.

VOD - AVG. BITRATE VS. AVG. NUMBER OF DAILY TITLES



6. Key metrics cheat sheet

Average Daily Playtime

The average daily time each user spends viewing content on a single streaming service. Also referred to as Avg. Daily Playtime per user and service, this metric is a good indicator of user engagement levels with the platform and content.

Average Effective Playtime

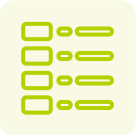
Average Effective Playtime refers to the aggregate number of hours being streamed on the platform. These hours are computed without considering the Join Time, Buffer Time, Ads Time, or Pause Time, so this metric shows the actual time that the users have been engaged with the video. It is one of the most reliable measures of your users' level of engagement with your platform and content.

Average Media Duration

Displays the average lenght, in minutes, of the VoD titles being watched on a platform.

Average Daily Number of Titles

The average number of VoD titles users watch per day.



Average Completion rate

Displays the average completion rate of each view initiated within the time interval (dictated by your chosen granularity) over time. Completion rate is understood as a percentage, with 100% meaning the play reached the end of the video. This metric is a good indicator of how satisfied your users are with a piece of content or your streaming experience throughout a single play.

Bitrate

The basis of video quality, bitrate measures the amount of video data transferred per second and is reflective of the video quality being sent to the end-user device. The higher the bitrate, the higher the video quality. High bitrates are necessary for a superior Quality of Experience, but they require greater bandwidth and join times so as not to impact the experience negatively.

Buffer Ratio

Buffer Ratio represents the time users experience buffering during content streaming. Buffering is when content stalls in the middle of playback due to a buffer underrun. In other words, a video stream loads slower than the video should play, so playback must stall to buffer more video. This effect is sometimes referred to as “Rebuffering”.

Join Time

Join time is a metric measuring the amount of time from when the video player is initiated (either via user action or by autoplay) to when the first video content frame is played. Join Time can be increased to let the video load, decreasing buffering time throughout the video playback’s duration. This strategy is especially useful to enable higher bitrates across your service.

Exit Before Video Start

Exit Before Video Start (EBVS) represents video connection attempts without registered errors that have terminated before the first frame of the video has been displayed. EBVS is directly related to Join Time — the higher the Join Time, the higher the chances that the user will exit the video before it starts.

7. About NPAW

NPAW is the leading video intelligence company helping online streaming services grow. A global leader in its space, NPAW has over a decade of experience developing groundbreaking and scalable analytics solutions to optimize full service performance and user engagement to build media experiences that maximize revenue. Its suite of integrated analytics provides advanced, correlated visibility of platform performance, audience behavior and navigation, advertising and content efficiency in real-time to support data-driven decisions.

NPAW serves more than 160 video-based services and processes over 120 billion plays per year worldwide. Established in 2008 by co-founders of video streaming service Wuaki TV (later sold to Rakuten), NPAW has offices in Barcelona and New York with teams throughout the world. For more information, visit www.npaw.com.

For more information about the measurements you can make with NPAW, contact us here to set up a free consultation with a streaming video expert.

GET IN TOUCH
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