Q1
2022

CONVIVA

Conviva's State of Streaming

Despite slower growth last quarter, global streaming grew 10%, led mostly by Africa, Oceania, South America, and Asia. On the other hand, Europe and North America showed much slower growth. So while more saturated markets like North America and Europe are starting to stabilize, there are still plenty of growth opportunities throughout the world. And any growth after such massive expansion over the past two years is good news for both streaming providers and streaming viewers.

Q1 2022 highlights:

- Some streaming growth: Though smaller on global share of streamed minutes, Africa and Oceania grew by about 50% and South America by 34%. Europe and North America were more closely aligned with global growth, with 9% and 5% increases, respectively.
- Big screens still reign: 77% of all streamed minutes globally were on a big screen device, particularly smart TVs, which were up 34% year over year. Most regions followed this pattern, with the exception of Asia and Africa, where only about half of all streaming was on a big screen.
- Quality improvements continue: Globally, minutes per play remained flat from year to year, but picture quality, buffering, and video start failures all improved significantly.
- TikTok heats up: TikTok is increasingly becoming an important channel for many brands. It was the only platform that had an increase in audience share for every sports league measured.
- Super gains for Super Bowl teams: Both teams in the big game gained over 100K followers on TikTok in 24 hours, while the Rams gained the most followers on a single platform, with a 139.9K increase on Instagram.

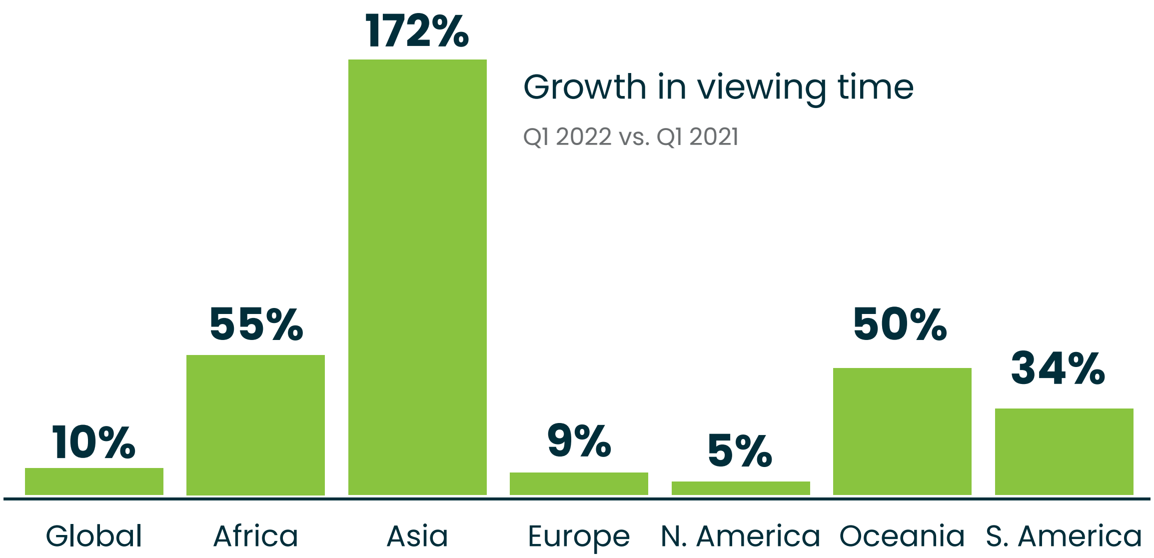
Note: Due to global geopolitical conditions, streaming data pertaining to China has been removed from this report.

Conviva's data is primarily collected using proprietary sensor technology with a global footprint of more than 500 million unique viewers watching 200 billion streams per year across nearly four billion applications streaming on devices. Embedded directly within streaming video applications, the sensor measures across content and ads to analyze nearly three trillion real-time transactions per day for its customers. In this report, the year-over-year data from Q1 2022 as compared to Q1 2021 was normalized based on Conviva's customer base.

Some streaming growth

Last quarter was the first quarter to show that the streaming growth accelerated by the pandemic started to stabilize, and this quarter continued the trend. Overall, viewing minutes grew by 10% in Q1 2022 over Q1 2021. Growth in North America and Europe was on par. Africa, Oceania, and South America had strong double-digit growth, led by Africa up 55%. But it was Asia—excluding China, so a smaller base compared to the rest of the regions—that showed explosive growth, up 172%.

While streaming growth is stabilizing in the more saturated markets like North America and Europe, there are still plenty of growth opportunities throughout the world.

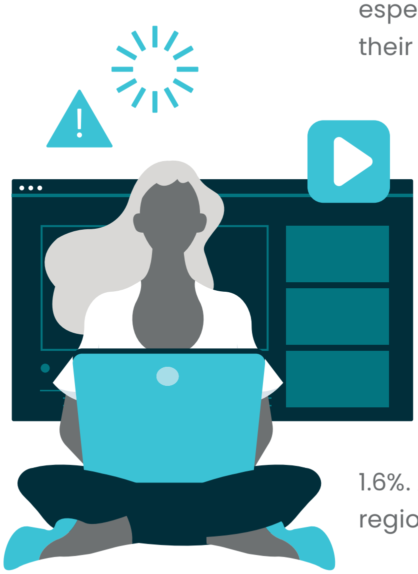


Quality improves with one exception

Quality throughout the world followed a similar pattern to last quarter—video start failures were up across the board, while buffering and bitrate improved. As big screens, especially smart TVs, continue to grow in share, it follows that there might be longer wait times, but much better quality overall.

On the positive side, all regions enjoyed improved picture quality, with Asia leading the pack at nearly a 90% improvement despite having the lowest bitrate among regions. Oceania took the top spot for bitrate with 10.63 Mbps, up 16% year over year. Buffering also improved for almost every region. Africa led the way, down 55% year over year to 0.9%, though it was second worst to Asia, whose 1% buffering rate was the worst. Europe and Oceania tied for the lowest buffering rate at just 0.2%.

On the negative side, video start time increased in every region, up 30% globally and especially in Asia, which was up 56% year over year. Europeans waited the least for their videos, just 4 seconds, while Africa had the longest wait time at 8 seconds.



The rest of the quality metrics varied by region. Globally, minutes per play is just over 20 minutes. Most regions also watched around 20 minutes, except Africa and Asia, which had a much higher proportion of streamed minutes watched on other devices, such as mobile phones. Although down 3% year over year, Europe enjoyed almost 23 minutes per play. Asia had the fewest minutes per play, and although Africa had fewer minutes per play than most other regions, the region was up the most year over year at 27%. Video start failures were down in all but two regions: Asia and Europe. North America had both the lowest video start failures and the second-highest decline year over year. The highest decline of failures went to South America, down a whopping 41% to 1.6%. Although Africa's video start failures were down significantly year over year, the region experienced the most failures at 3.3%.

	Mins/Play		Video Start Failures		Video Start Time		Buffering		Bitrate	
	Q1 2022	YoY	Q1 2022	YoY	Q1 2022	YoY	Q1 2022	YoY	Q1 2022	YoY
Global	20.63	-0.7	0.9%	-17.6%	5.53	30.4%	0.3%	-8.0%	7.69	17.3%
Africa	12.63	26.8%	3.3%	-15.1%	8.13	19.1%	0.9%	-54.8%	7.46	10.6%
Asia	8.71	12.5%	1.1%	5.0%	6.25	55.5%	1.1%	-60.2%	5.87	87.6%
Europe	22.93	-3.4%	1.3%	1.6%	4.03	6.7%	0.2%	-28.1%	8.39	21.7%
N. America	21.73	-0.5%	0.7%	-24.2%	5.70	29.3%	0.3%	15%	7.33	9.4%
Oceania	21.68	6.2%	1.0%	-16%	5.56	13.9%	0.2%	-38%	10.63	16.1%
S. America	20.88	6.4%	1.6%	-41%	6.80	9.6%	0.5%	-28.3%	9.21	24.4%

Improvements in green, declines in pink | Best per category in green, worst in pink

Big screens hold steady

The domination of big screens is one streaming trend that seems pretty steady. North America, South America, Europe, and Oceania all had the exact same big screen share of viewing time as last quarter, while Africa was down 5% to 53% and Asia was up significantly from 27% to 43%.

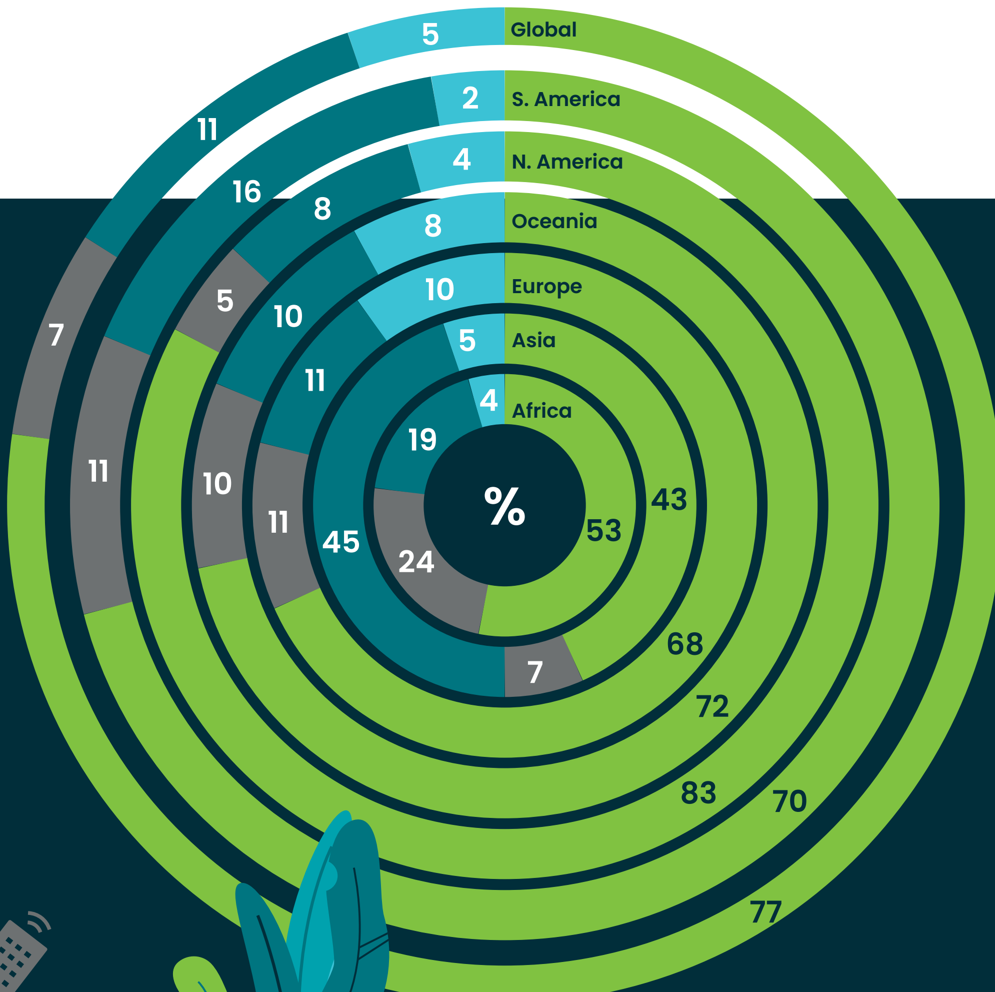
Mobile phones made a strong showing in Asia, claiming the majority of share at 45%, and desktops were most popular in Africa, with 24% versus about 9% across the other regions. Tablets tend to take in the least amount of share, so it's no surprise that most regions saw single-digit share, except Europe with 10%.

Globally, most people streamed on big screens, followed way behind by mobile phones with 11%, desktops with 7%, and tablets with 5%.

Share of viewing time by device

Q1 2022

- Big Screen
- Desktop
- Mobile
- Tablet



Substantial movement in viewing time by device

Viewing time by device had one very clear winner and a couple very clear losers—smart TVs grew their viewing time by 34% of share, and desktops and gaming consoles declined by 15% versus Q1 2021. Connected TVs also declined but by just 1%. Mobile phones performed much better over this time last year, up 22%, and tablets increased their share slightly, up 4%.

Last quarter saw connected TVs decline for the first time ever, down 2%, and smart TVs were up 37%. These trends continued this quarter, further cementing the fervor for big screens even as viewers trade in dongles for built-in capabilities.

Improved quality for most devices

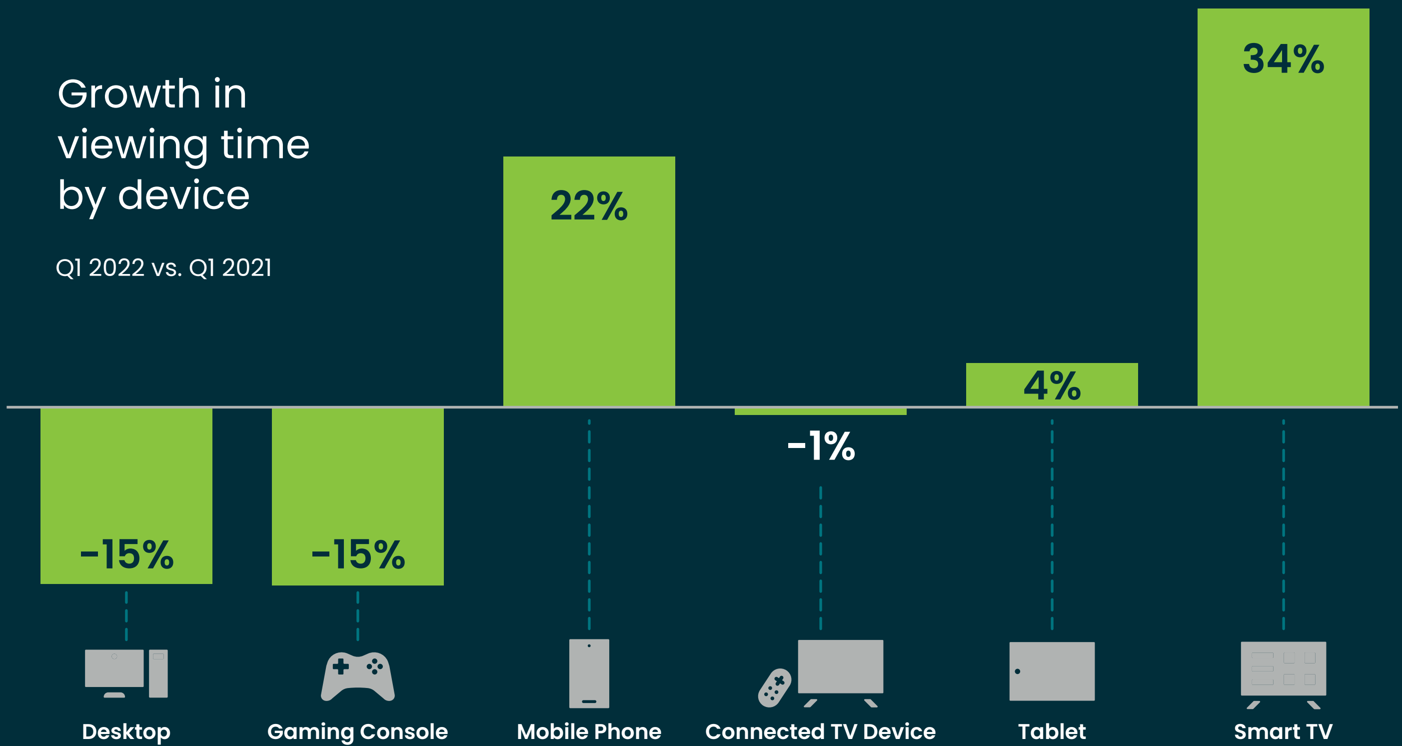
Overall, quality by device improved significantly year over year in three areas: bitrate, buffering, and video start failures. Smart TVs were the lone devices to increase video start failures year over year, but they still had quite a low rate at just 0.7%. Desktops boasted the biggest decline in failures, down a massive 47%. Buffering decreased on every device, notably desktops, which were down another significant percentage of 55%. Although down 26% year over year, mobile phones had the highest buffering rate at 0.7%. Bitrate was another metric that improved on every device. Despite recording the largest year-over-year improvement, desktops had the worst picture quality at 3.99 Mbps. Smart TVs enjoyed the best bitrate at 9.42 Mbps and also improved 13% year over year.

Minutes per play and video start time were mixed. Interestingly, minutes per play had the least change year over year, with desktops marking no change at all and slight increases or decreases among the other devices. Connected TVs' minutes were down 4% over this time last year, but still had the highest total minutes per play this quarter at almost 28 minutes. It's no surprise that smaller-screen mobile phones continued to have the fewest minutes per play this quarter, but they were also down just 1% from last year.

Mobile phones and smart TVs were the only two devices to increase their video start time, up 22% and 5%, respectively. In another win for gaming consoles, they had the lowest start time at 3.78 seconds. This is in comparison to desktops, which had an almost five-second wait time. Mobile phones recorded the highest increase in video start times year over year to 4.67 seconds.

Growth in viewing time by device

Q1 2022 vs. Q1 2021



	Desktop Q1 2022	Desktop YoY	Gaming Console Q1 2022	Gaming Console YoY	Mobile Phone Q1 2022	Mobile Phone YoY	Connected TV Device Q1 2022	Connected TV Device YoY	Tablet Q1 2022	Tablet YoY	Smart TV Q1 2022	Smart TV YoY
Mins/Play	15.50	0%	26.66	3%	9.06	-1%	27.91	-4%	16.08	-1%	27.19	-1%
Video Start Failures	1.0%	-47%	0.5%	-18%	1.3%	-11%	0.7%	-15%	1.4%	-9%	0.7%	12%
Video Start Time	4.96	-10%	3.78	-8%	4.67	22%	4.22	-3%	3.88	-2%	4.91	5%
Buffering	0.3%	-55%	0.1%	-37%	0.7%	-26%	0.2%	-23%	0.4%	-19%	0.2%	-6%
Bitrate	3.99	19%	8.01	11%	4.38	13%	7.85	10%	6.71	15%	9.42	13%

Improvements in green, declines in pink | Best per category in green, worst in pink

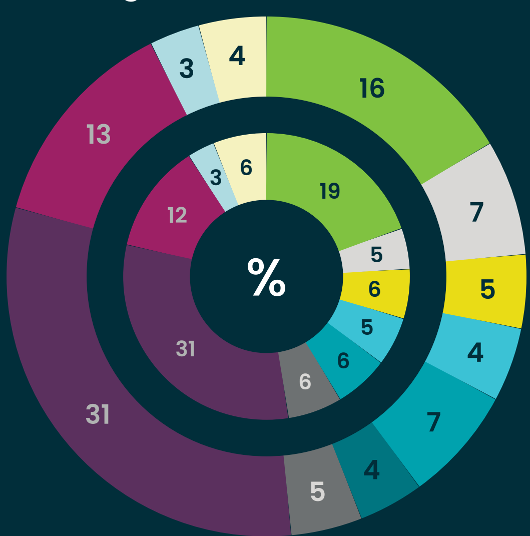
Big screen standouts

As big screens vied for eyes, a few brands continued to stand out. Roku, although down slightly from this time last year, still had the most share of viewing time with 31%. Amazon Fire was also down year over year, more significantly by almost 3 percentage points but had the second-highest share with 16%.

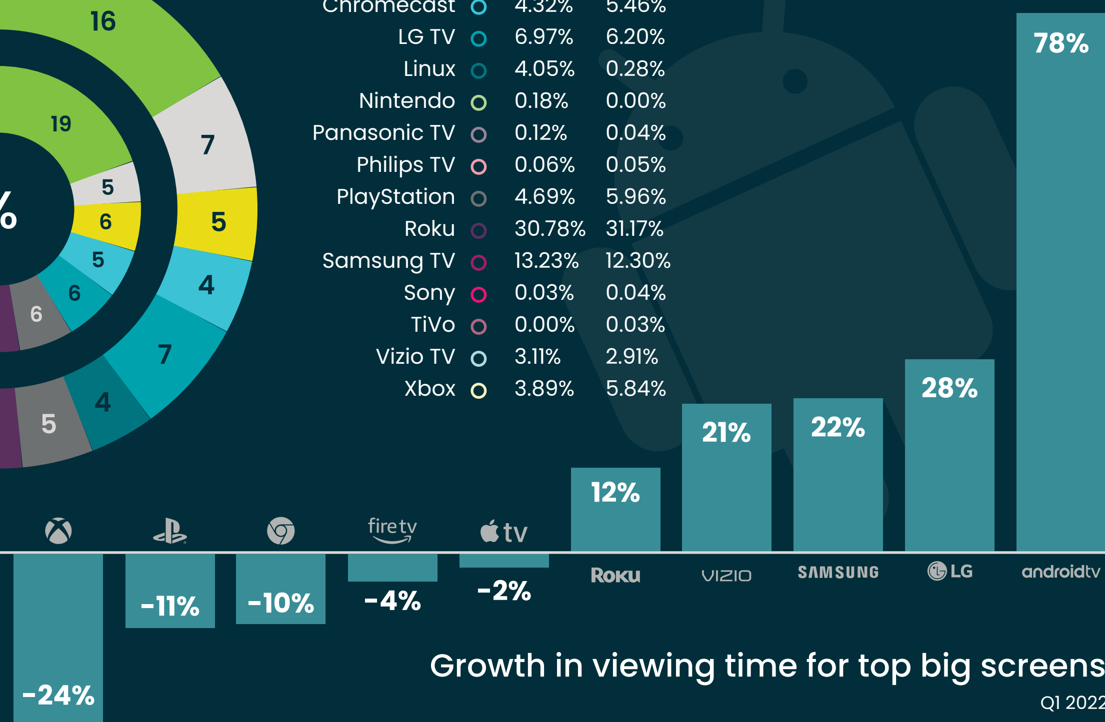
Smart TVs gained ground, though, as Android TV, LG TV, Samsung TV, and Vizio TV were all up year over year, with Android TV's share surging the most, up almost 3 percentage points. Linux STB enjoyed the biggest boost of all the big screens, nearly 4 percentage points over Q1 2021.

Share of big screen viewing time

Q1 2022 vs. Q1 2021



	Q1 2022	Q1 2021
Amazon Fire TV	16.45%	19.44%
Android TV	7.24%	4.63%
Apple TV	4.87%	5.65%
Chromecast	4.32%	5.46%
LG TV	6.97%	6.20%
Linux	4.05%	0.28%
Nintendo	0.18%	0.00%
Panasonic TV	0.12%	0.04%
Philips TV	0.06%	0.05%
PlayStation	4.69%	5.96%
Roku	30.78%	31.17%
Samsung TV	13.23%	12.30%
Sony	0.03%	0.04%
TiVo	0.00%	0.03%
Vizio TV	3.11%	2.91%
Xbox	3.89%	5.84%



Growth in viewing time for top big screens

Q1 2022

Android TV sees big gains

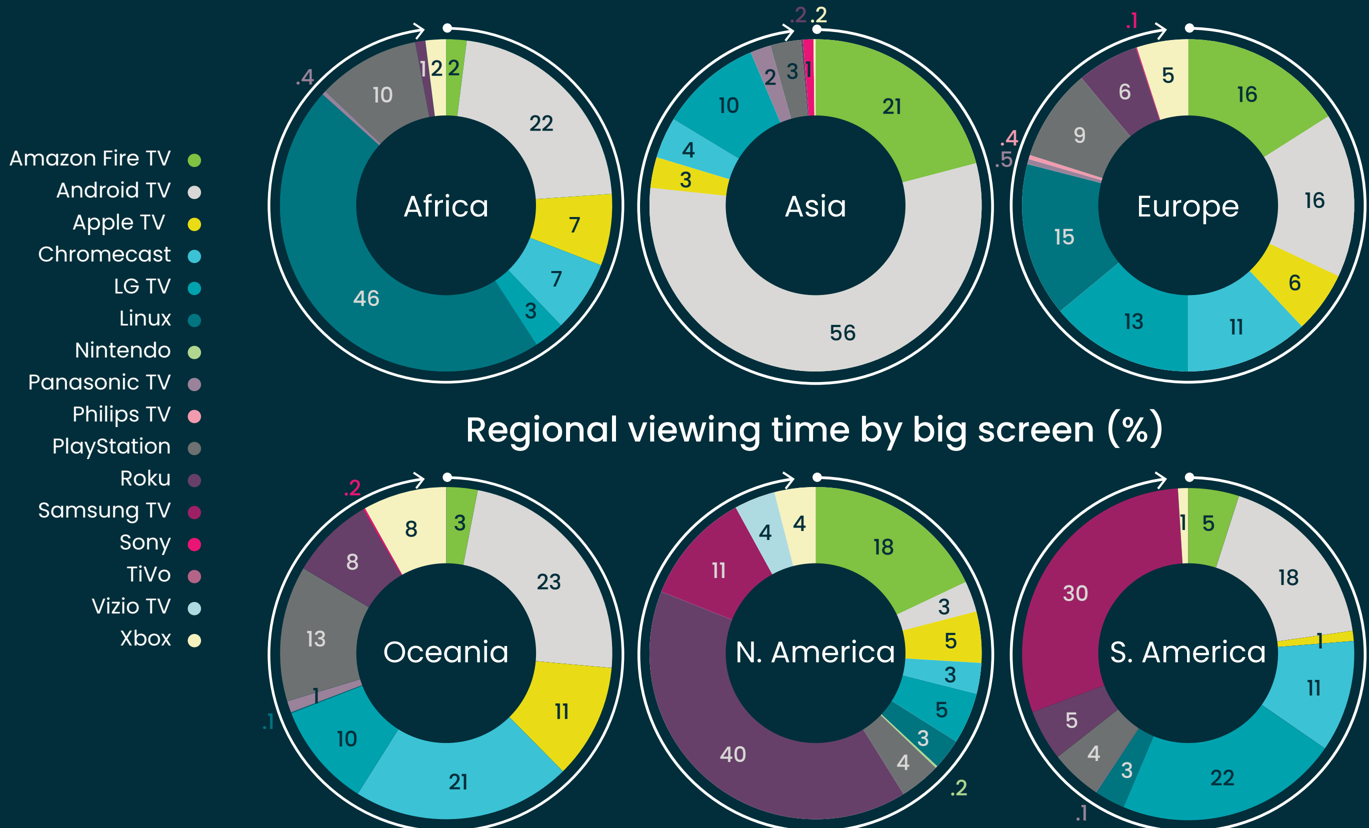
When it came to actual minutes streamed, Android TV was the big leader in growth across all the top big screens—up a whopping 78%. In yet another win for smart TVs, LG TV, Samsung TV, and Vizio TV all also had double-digit growth, up about 20%. However, Roku still maintained the largest share of streaming minutes, and viewing time increased by 12%.

On the other hand, connected TV devices and gaming consoles all took a nosedive, ranging from Apple TV's tiny 2% decline to Xbox's hefty 24% drop.

Most-watched big screens

Big screen share by region didn't change much from last quarter. Africa still far preferred Linux STB, which actually increased share by more than 10% to 46%. Android TV came in second with 22%, while PlayStation was third with 10% of share. Apple TV and Chromecast also had some success in Africa, each with 7%.

Android TV had a strong share in all regions except North America, where Roku still maintained the highest share with 40%. Second in North America was Amazon Fire TV at 18%, followed by Samsung TV with 11%.



In Asia, Android TV was again the standout, up 5% from last quarter to 56% of share. The only other big screen to make a blip in Asia was Amazon Fire TV with 21%; every other big screen had nominal single-digit share.

Europe and Oceania had a much wider spread of big screen preferences. In Europe, Amazon Fire TV and Android TV tied for first with 16% with Linux STB coming up just 1% short with 15%. With 13%, LG TV was fourth, followed closely by Chromecast at 11%. In Oceania, Android TV's strong showing continued, raking in 23%. Chromecast was right behind Android TV, though, with 21%. PlayStation, Apple TV, and LG TV rounded out the middle with 13%, 11%, and 10%, respectively.

South America had three clear big screen favorites—Samsung TV with a significant 30%, LG TV with 22%, and Android TV with 18%. The only other big screen of note in this region was Chromecast with 11%.

Some big screens miss the mark on quality

Big screens didn't enjoy the year-over-year quality improvements that most other devices did. In fact, the only metric to improve across the board was bitrate. LG TV, with a bitrate of 11.37 Mbps, far outperformed other big screens when it came to picture quality, and Chromecast underperformed with 7.28 Mbps. Buffering improved significantly for all but two big screens; Xbox saw an 18% increase, but was part of a four-way tie for lowest buffering rate this quarter at 0.1%, and LG TV was up 21% year over year and also tied with Chromecast for highest buffering rate.

Roku lowered video start time by a decent 24% as well as boasted one of the lowest video start times of all big screens this quarter. Conversely, LG TV had both the highest video start time this quarter and the highest increase year over year, up 23%. PlayStation and Apple TV were the only two other big screens to decrease video start time year over year.

Video start failures were fairly evenly split between big screens that improved and big screens that did not. Apple TV surpassed other big screens with a massive 52% decline in failures, followed pretty closely by Xbox, down 41%, and Roku, down 40%. Android TV, on the other hand, had the highest failure rate at 1.6% along with the highest increase year over year at 26%.

Only three big screens saw declines in minutes per play—Android TV, Apple TV, and Roku—but big screens in general all experience very high minutes per play compared to other devices. Chromecast shined with almost 35 minutes per play, up 0.3% from this time last year. PlayStation also had big gains from last year, up 5%.

With bitrate being the only metric to improve on every big screen and some considerable double-digit downturns, some big screens missed the quality mark.

Big screen quality

	Minutes / Play		Video Start Failures		Video Start Time		Buffering		Bitrate	
	Q1 2022	YoY	Q1 2022	YoY	Q1 2022	YoY	Q1 2022	YoY	Q1 2022	YoY
Amazon Fire TV	26.97	0.2%	0.8%	7.6%	5.25	5.4%	0.2%	-19.9%	8.16	11.3%
Android TV	21.97	-2.9%	1.6%	26.4%	5.00	20.5%	0.2%	-11.3%	9.84	18.4%
Apple TV	24.42	-4.7%	0.7%	-52.3%	2.70	-4.2%	0.1%	-39.0%	9.54	12.1%
Chromecast	34.84	0.3%	0.6%	14.7%	6.34	11.9%	0.3%	-18.9%	7.28	17.9%
LG TV	28.32	1.6%	0.6%	-13.4%	6.82	22.7%	0.3%	20.5%	11.37	12.8%
PlayStation	27.35	4.6%	0.6%	12.5%	3.21	-18.9%	0.1%	-58.0%	8.29	15.8%
Roku	29.11	-6.3%	0.3%	-39.5%	3.11	-24.3%	0.1%	-24.6%	7.62	7.6%
Samsung TV	27.33	3.9%	0.6%	9.3%	5.48	16.5%	0.2%	-8.1%	9.85	13.6%
Xbox	27.02	2.2%	0.4%	-40.6%	4.67	12.6%	0.1%	17.5%	7.68	4.5%

Improvements in green, declines in pink | Best per category in green, worst in pink

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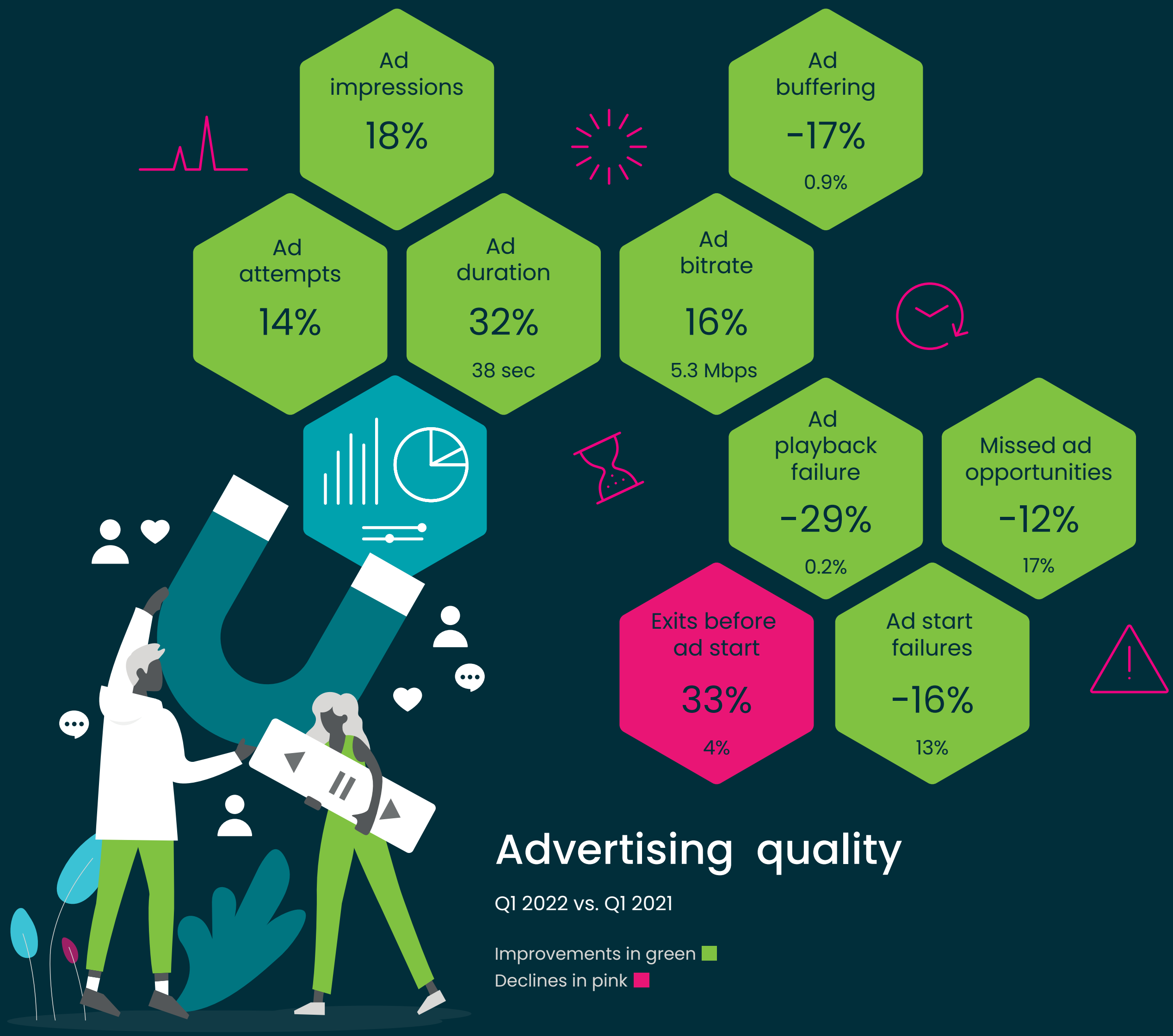
Streaming advertising bounces back

After a quarter that saw remarkable advertising delays and increased buffering, streaming advertising bounced back nicely. Ad impressions were up 18% and ad attempts were up 14%, thanks mostly to big Q1 sporting events like March Madness, the Super Bowl, and the Winter Olympics. Live events, especially sports, are a massive driver of streaming, and where there are large audiences, increases in advertising follow.

In another bright spot for streaming advertising, there were significant improvements in ad quality, as well. Ad buffering experienced a 17% improvement from Q4 2021. Bitrate increased 16%, missed opportunities were down 12%, and failed attempts were also down 16%.

All and all, it was a much better quarter for streaming advertising, both in terms of impressions and quality.



TikTok heats up

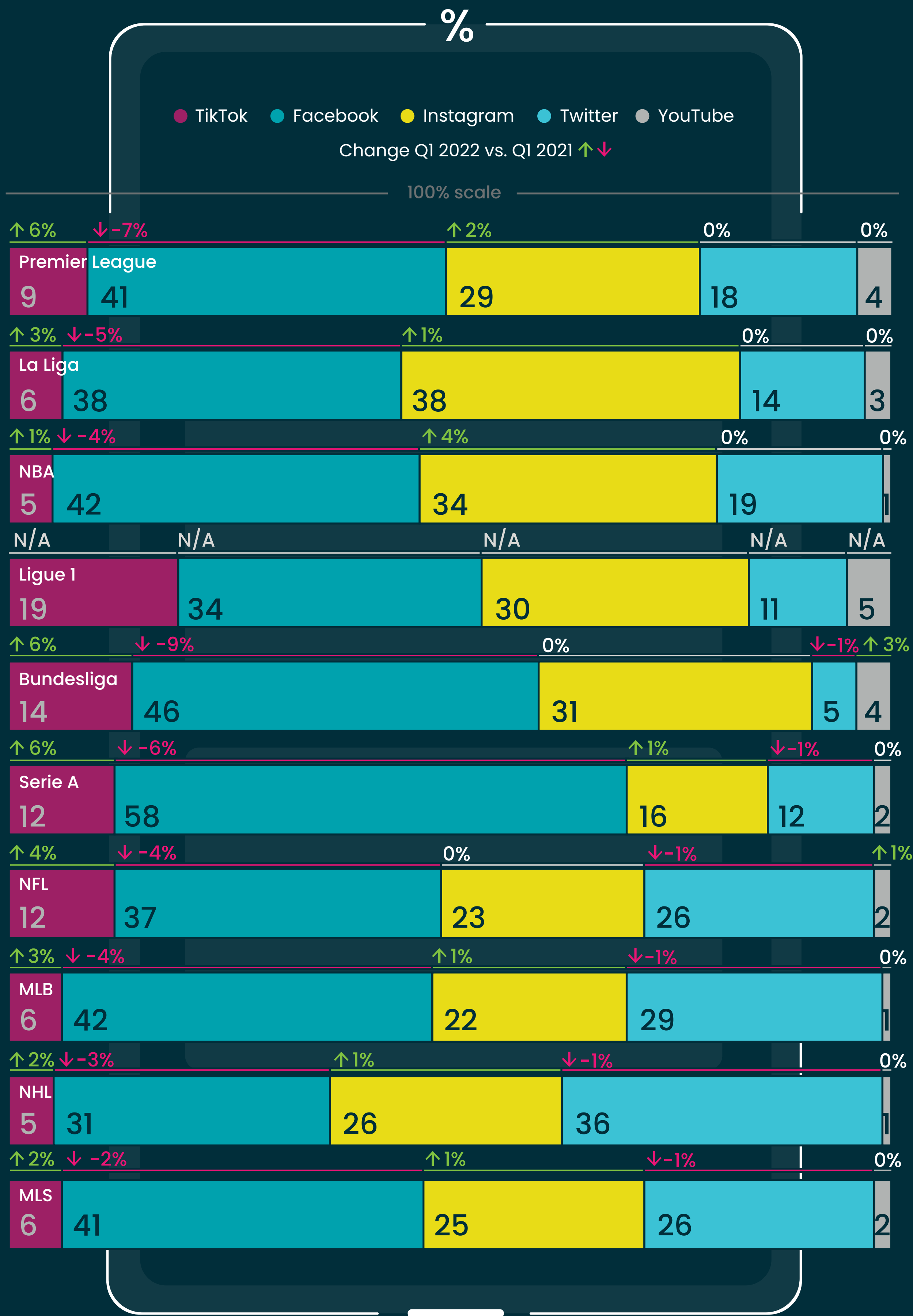
Social media is often about finding the right content mix and balance among platforms. For sports leagues in Q1 2022, this was as different as the sports themselves.

Almost every league focused on Facebook—especially Serie A, where more than half of their audience was on Facebook—even though every league showed a year-over-year decline on Facebook. Despite losing share in every league, Facebook still enjoyed the highest average total share.

TikTok is increasingly becoming an important channel for many brands. It was the only platform that had an increase in audience share for every league. Bundesliga, Serie A, and the Premier League increased the most at 6% each. NFL increased the fourth most, up 4%. Ligue 1, however, had highest average TikTok audience at 19%, and Paris Saint-Germain's 25.9 million TikTok audience is the largest of any sports team in the world.

Instagram also enjoyed increases almost across the board, up 4% with the NBA and a decent 2% with the Premier League. Ligue 1 also had the highest average YouTube audience at 5%, with both the Premier League and Bundesliga averaging a 4% share. La Liga had the highest average Instagram following per team at 38%, followed by the NBA at 34%. Interestingly, the only league to overperform on Twitter was the NHL, despite the share being down 1% year over year.

Clearly, it's becoming a TikTok world now on social media as all signs point to the continued growing presence of brands on the platform.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TikTok Facebook Instagram Twitter YouTube
Change Q1 2022 vs. Q1 2021
100% scale
6% -7% 2% 0% 0%
Premier League
9 41 29 18 4
3% -5% 1% 0% 0%
La Liga
6 38 38 14 3
1% -4% 4% 0% 0%
NBA
5 42 34 19 1
N/A N/A N/A N/A N/A
Ligue 1
19 34 30 11 5
6% -9% 0% -1% 3%
Bundesliga
14 46 31 5 4
6% -6% 1% -1% 0%
Serie A
12 58 16 12 2
4% -4% 0% -1% 1%
NFL
12 37 23 26 2
3% -4% 1% -1% 0%
MLB
6 42 22 29 1
2% -3% 1% -1% 0%
NHL
5 31 26 36 1
2% -2% 1% -1% 0%
MLS
6 41 25 26 2

Followers is another good indication of where sports leagues choose to invest their time, resources, and social media strategies.

The Premier League had the highest average total audience per team at 36.4 million, followed by La Liga at 31.6 million and then the NBA at 13.7 million. The majority of the Premier League's followers are on Facebook and Instagram. La Liga's audience was split evenly between Facebook and Instagram with about 12 million followers per platform. The NBA's followers are on three main platforms: Facebook, Instagram, and Twitter.

Ligue 1 had the second-most followers on TikTok, just behind the Premier League, and a fairly even follower split between Facebook and Instagram. Although sixth in overall followers, Serie A had the third-most followers on Facebook, where every league had the most followers—except La Liga where Instagram just edged out Facebook for most followers and the NHL where Twitter had their most followers.

Followers

Q1 2022

League	TikTok	Facebook	Instagram	Twitter	YouTube	Total
Premier League	3,206,940	14,774,154	10,639,169	6,398,644	1,437,210	36,456,117
La Liga	1,795,461	12,080,170	12,133,685	4,548,859	1,106,136	31,664,311
NBA	720,543	5,702,125	4,616,861	2,547,113	141,056	13,727,698
Ligue 1	2,125,263	3,890,321	3,400,52	1,287,479	616,805	11,320,391
Bundesliga	1,425,986	4,785,287	3,277,556	563,787	395,065	10,447,681
Serie A	1,225,252	6,029,097	1,697,853	1,285,142	160,796	10,398,140
NFL	894,634	2,748,018	1,722,395	1,948,258	121,222	7,434,527
MLB	259,004	1,867,273	991,085	1,270,820	44,199	4,432,381
NHL	145,413	828,063	692,721	947,382	34,624	2,648,203
MLS	66,993	473,927	97,141	302,861	27,435	1,168,357

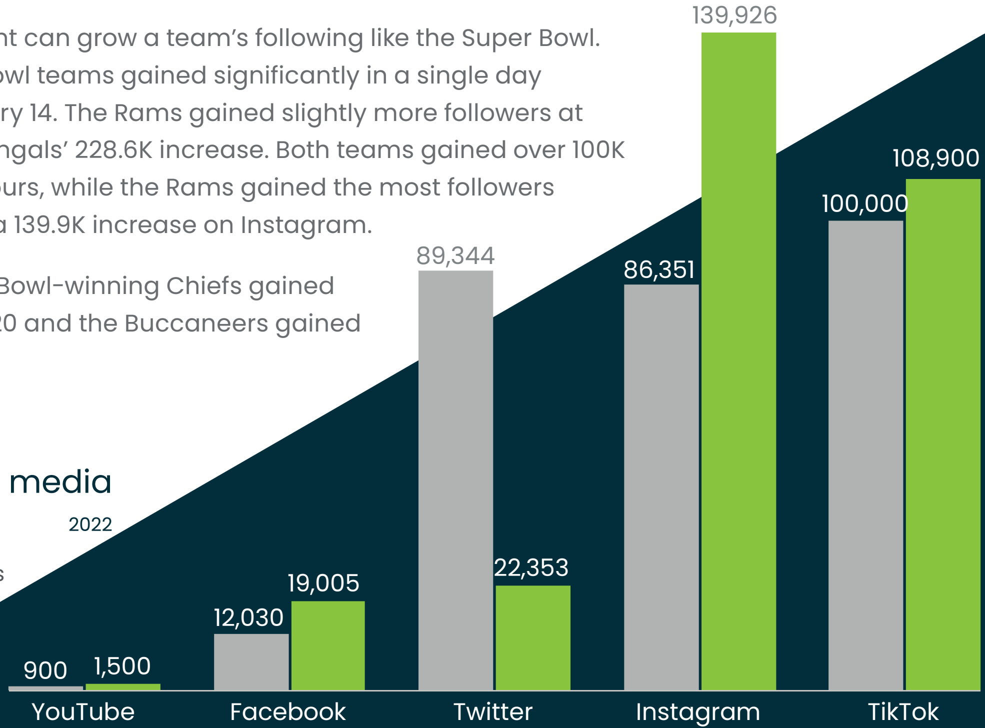
Football's biggest game and social media

It would be hard to talk about social media in Q1 2022 without mentioning the Super Bowl.

No American sporting event can grow a team's following like the Super Bowl. Both of this year's Super Bowl teams gained significantly in a single day from February 13 to February 14. The Rams gained slightly more followers at 291.7K compared to the Bengals' 228.6K increase. Both teams gained over 100K followers on TikTok in 24 hours, while the Rams gained the most followers on a single platform, with a 139.9K increase on Instagram.

By comparison, the Super Bowl-winning Chiefs gained 280K within 24 hours in 2020 and the Buccaneers gained 229K in 2021.

24-hour social media follower gain

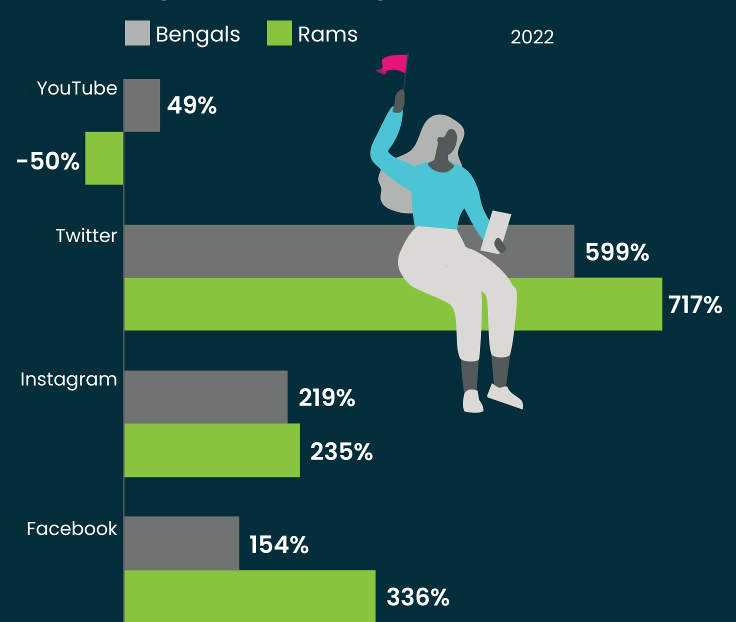


Super Bowl engagement spikes

Being on the world's stage can do wonders for your social engagement. Compared to regular season game day averages, the Bengals and Rams both blew their numbers out of the water with triple-digit increases on Twitter, Instagram, and Facebook.

The largest increase came on Twitter, where the Rams saw a 717% increase and the Bengals saw a 599% increase compared to their regular season average. The Rams outperformed the Bengals on all platforms with the exception of YouTube.

Super Bowl engagements vs. regular season game days



Conclusion

As the world rights itself after a pandemic that threw so many media consumption patterns upside down, the streaming and social worlds will begin to settle into a new normal, one where streaming is a part of everyday life in a way it wasn't before and social media increasingly moves toward short- and long-form videos made by both users and savvy brands.

About Conviva

Conviva is the census, continuous measurement and engagement platform for streaming media. Powered by our patented Stream Sensor™ and Stream ID™, our real-time platform enables marketers, advertisers, tech ops, engineering, and customer care teams to acquire, engage, monetize, and retain their audiences. Conviva is dedicated to supporting brands like DAZN, Disney+, Hulu, Paramount+, Peacock, Sky, Sling TV, TED, and WarnerMedia as they unlock the incredible opportunity in streaming media. Today our platform processes nearly three trillion streaming data events daily, supporting more than 500 million unique viewers watching 200 billion streams per year across four billion applications streaming on devices. Conviva ensures digital businesses of all sizes can stream better—every stream, every screen, every second.

Any Questions?

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