



# Navigating CDN Strategies

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A survey on the streaming industry's CDN plans, priorities, and challenges by NPAW and Dan Rayburn

# Introduction

For video providers today, sub-par traffic delivery is no longer an option. There are many different elements to consider when defining an optimal content delivery infrastructure, and what the ideal system looks like for each company will depend on their business model, monetization strategy, and streaming priorities.

As customer expectations continue to rise and the technology around CDNs advances, many organizations are considering moving away from a single CDN model towards a Multi-CDN infrastructure that prioritizes the end-viewer experience and protects against network fluctuations, blackouts, and vendor lock-in. In this survey, with 282 respondents, we take a look at what the industry is currently doing, planning, and prioritizing on content delivery.

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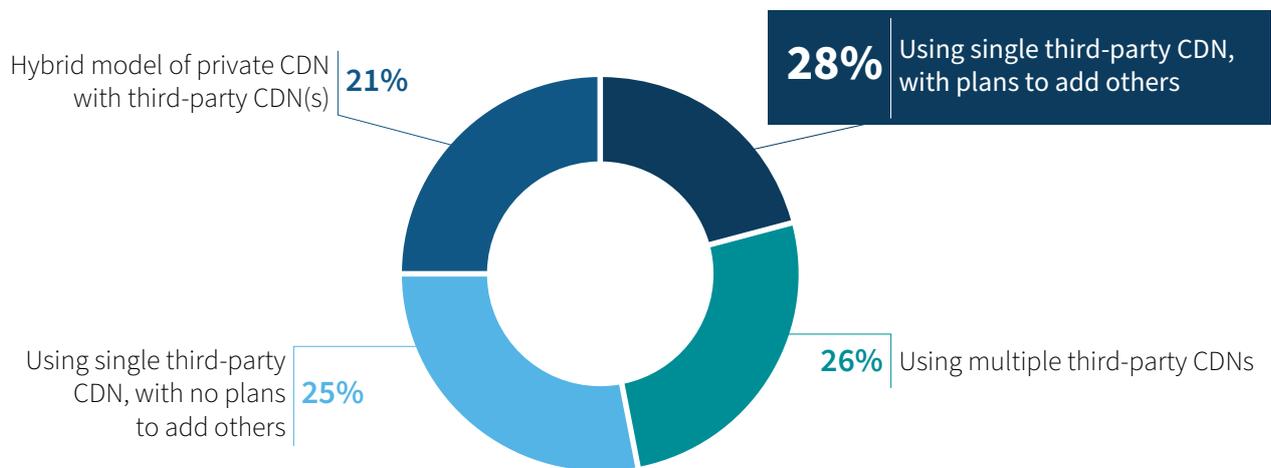
Industry leaders trust NPAW to understand consumption trends, improve their platform, and create reliable streaming experiences that delight and retain users.



## Who's doing what: an industry breakdown

The industry by CDN system plans, vertical, content type, and monetization strategy.

### 1 What is your current video delivery system?



#### Our sample: CDN setups and future plans

First of all, let's look at how our survey sample breaks down in terms of CDN strategies. A total of 47% are using more than one CDN, with 26% of respondents saying they are Multi-CDN, and 21% are using a hybrid model of their own privately built CDN with at least one other CDN. There are 53% still using Single-CDN overall, with 28% saying they have plans to add additional CDNs into their workflow in the near future.

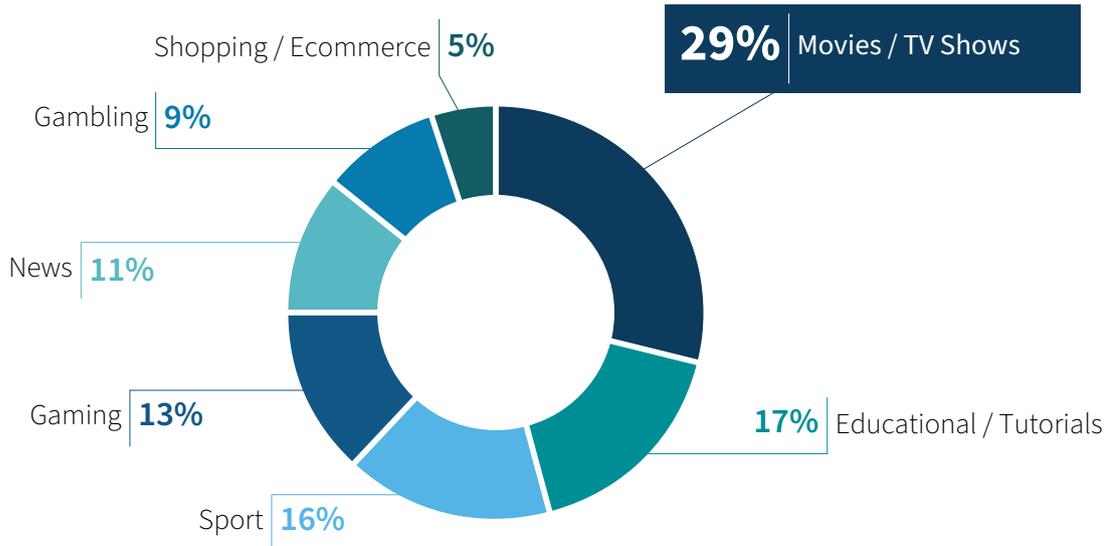
#### KEY TAKEAWAY

Single-CDN delivery is decreasing in market share. In an increasingly competitive streaming environment, use cases for Multi-CDN like platform resilience, global coverage, and avoiding vendor lock-in are gaining relevance.

**75%** of video providers are already Multi-CDN, or are planning to add additional CDNs in the near future

## Who's doing what: an industry breakdown

### 2 Which type of content takes up the majority of your total viewing hours?



#### Content genres: who's streaming what?

Among our sample, the most delivered genre of content is movies/TV shows, with 29%. Educational content (17%) and sports (16%) were the next most popular answers, followed by gaming (13%), news (11%), and gambling (9%). Video delivered only for shopping/ecommerce purposes represents only 5% of our respondents.

#### KEY TAKEAWAY

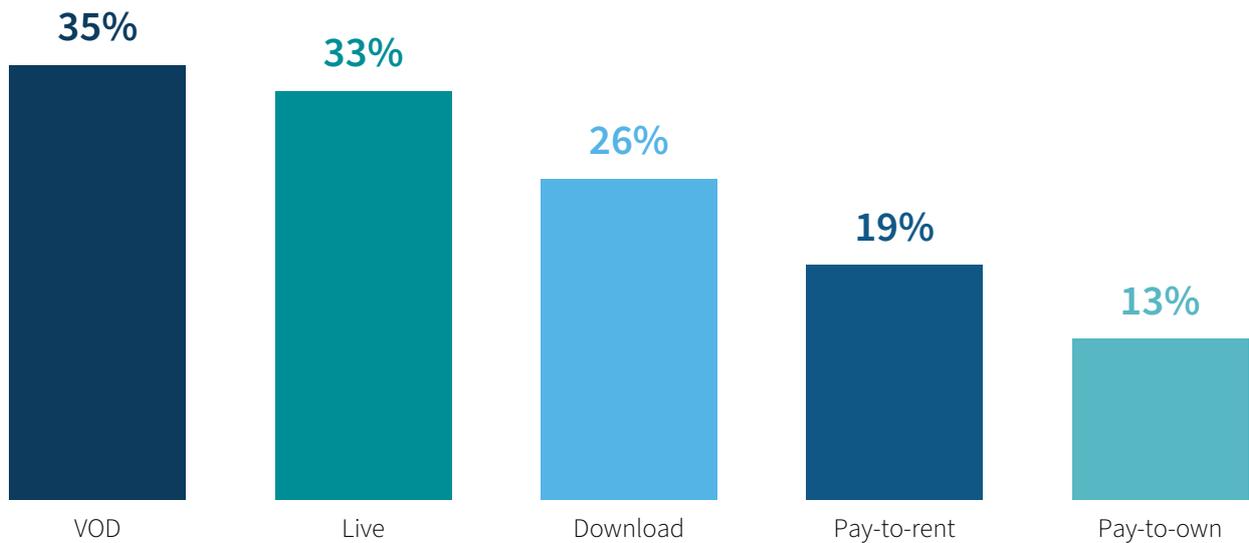
Comparing this breakdown with the data for Question 1 shows that Multi-CDN uptake is

slightly weighted by content type. Of those already using Multi-CDN architectures, 31% are delivering movies/TV shows, 19% are providing educational content, and 18% are broadcasting Sports. Also, 30% of those delivering movies/TV shows through a Single-CDN are planning to move to Multi-CDN.

**61%** of publishers delivering movies/TV shows are Multi-CDN or are planning to add more CDNs

## Who's doing what: an industry breakdown

### 3 What type of video content are you delivering? (Select all that apply)



#### Content types

We also asked respondents to identify themselves by the type(s) of content they deliver, as the challenges and priorities for publishers delivering Live content vary considerably from those focussed on downloads, for example. As shown above, the two most selected answers from our respondents were VOD (35%) and Live video (33%), followed by downloads (26%), pay-to-rent (19%), and pay-to-own (13%).

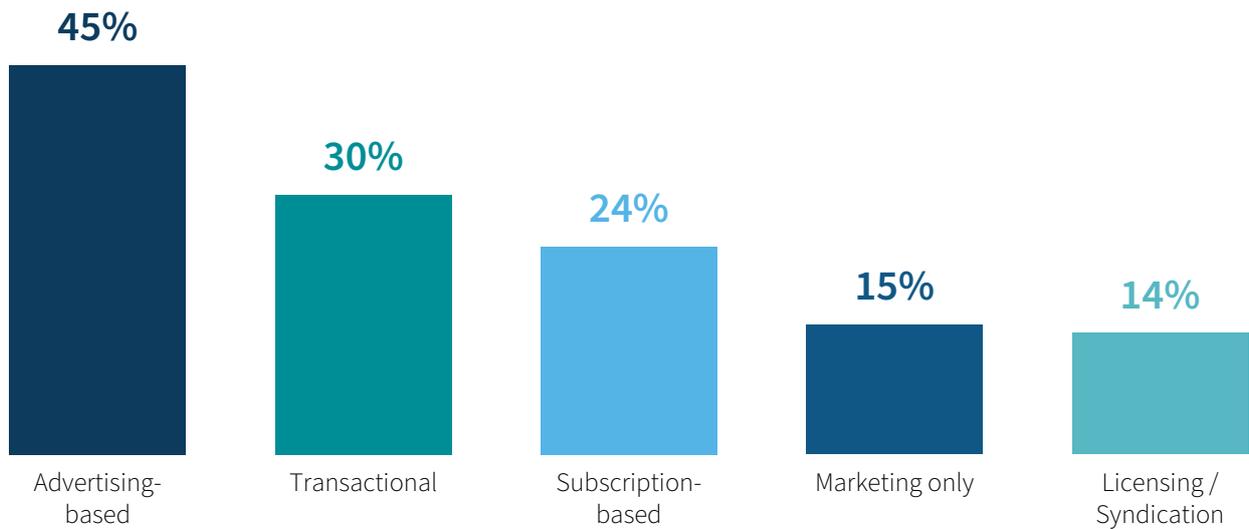
#### KEY TAKEAWAY

Again, correlating this breakdown with the CDN strategies identified in Question 1, we can see that 43% of the respondents who are using multiple CDNs also say they deliver VOD, the highest proportion of all the content types. This is followed by Live video, with 31% already using Multi-CDN.

**31%** of providers already using Multi-CDN are delivering Live content

## Who's doing what: an industry breakdown

### 4 How do you monetize your video content? (Select all that apply)



#### Monetization strategies

Looking at how respondents monetize their content, nearly half of our sample (45%) is using ad-supported streaming as a revenue channel, 30% are offering transactional video, and 24% include subscriptions in their strategy. 15% are delivering video for marketing purposes, and 14% are delivering licensing/syndicated content (where content is republished on third-party websites).

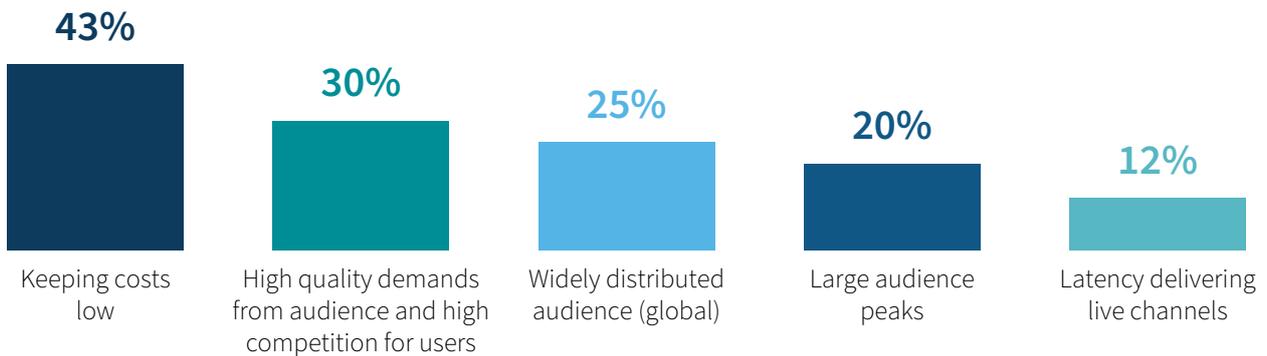
#### KEY TAKEAWAY

There is an anecdotal hypothesis that those offering ‘free’ access to content with ad-supported streaming can afford a less resilient content delivery strategy than those with customers paying monthly subscription rates. However, our data shows that 44% of those serving streaming ads are already Multi-CDN, with a further 40% indicating they are planning to add another CDN to their Single-CDN setup in the near future.

## Content delivery challenges and priorities

What are video providers most concerned about when it comes to content delivery?

### 5. What are the main challenges you face in delivering video? (Select all that apply)



#### Video delivery challenges

Identifying clear priorities and challenges on content delivery is what allows publishers to build an optimal infrastructure for their business. Of our respondents, 43% opted for keeping costs low – a clear priority across the board. The next most selected option was meeting high viewer quality demands and beating out the competition for users (30%), followed a widely distributed geographical audience (24%), and dealing with large audience peaks (20%). Last on the list is the issue of latency delivering live channels (12%).

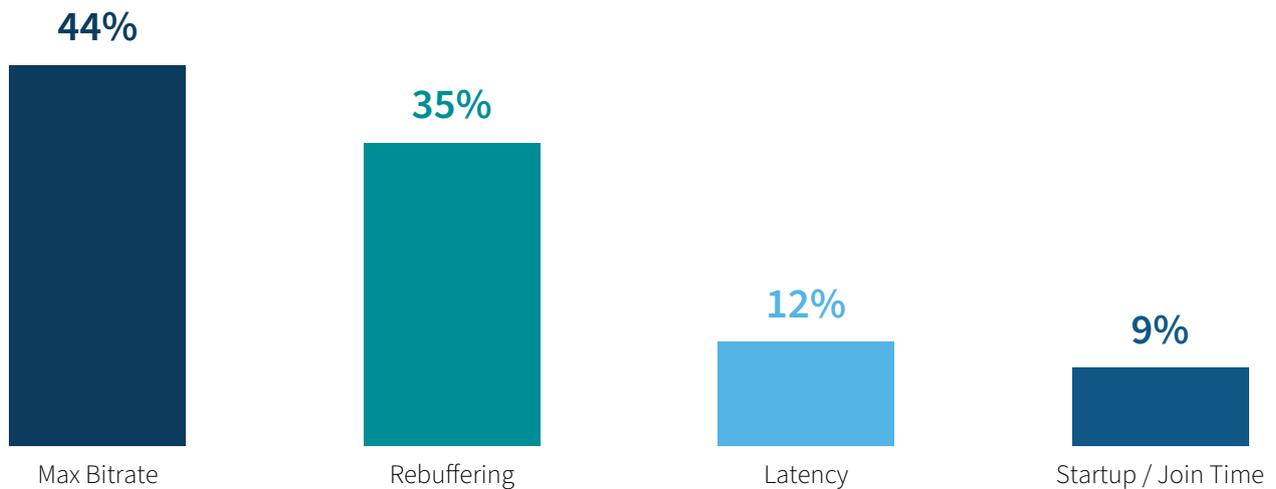
#### KEY TAKEAWAY

As mentioned above, these considerations must be combined with other business information to translate into direction on CDN optimization. For example, while only 12% overall named latency as a top priority, this will be a KPI of much higher importance to a provider delivering live sports or live online gambling content than to a business focussed on high-resolution movies on demand.

**30%** of video providers consider rising competition for users as the main challenge they face in video delivery today

## Content delivery challenges and priorities

### 6 What is the most important element of QoE for your video service?



#### QoE priorities

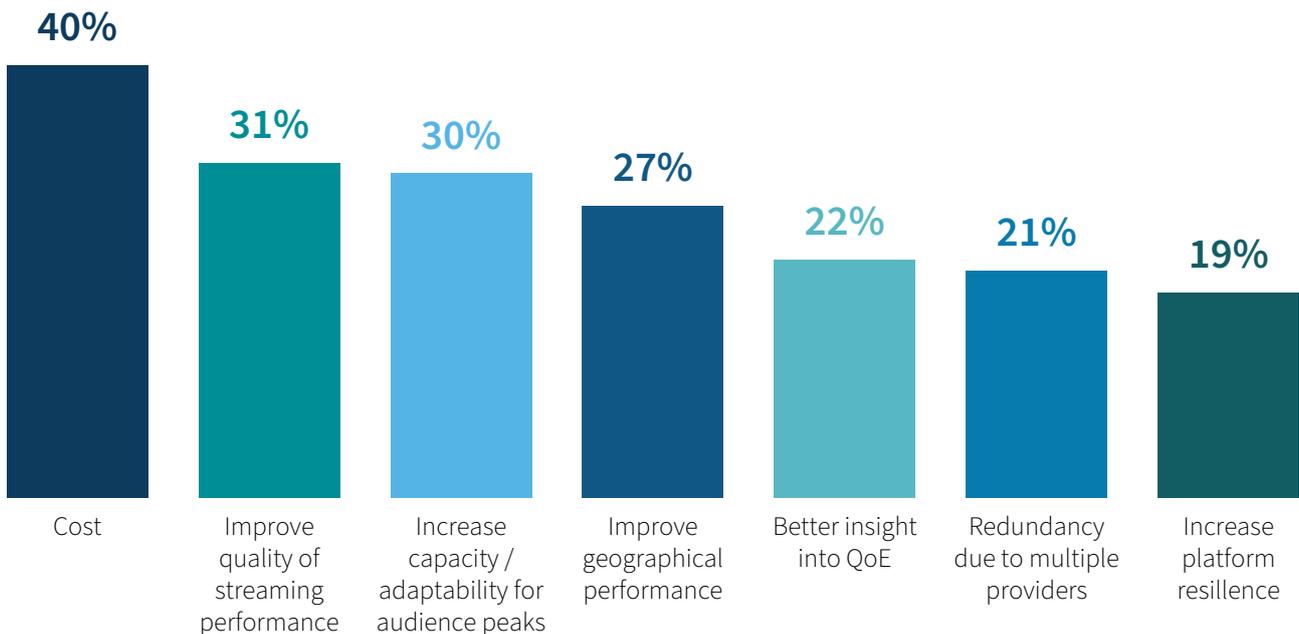
Diving a little deeper into the specific elements that providers value in terms of QoE performance, max bitrate was the most important QoE element for 44% of our survey respondents, with issues related to rebuffering close behind on 35%. Further down, 12% answered that latency was the priority, and startup / join time was considered the priority for the fewest respondents - a perhaps surprisingly low 9%.

#### KEY TAKEAWAY

Similarly to the previous question, these QoE priorities are closely tied to the content type and business model of the video provider. For example, looking at the respondents who deliver Live content, the amount who selected latency as their primary concern increased from 12% to 17%. Examining the results by content genre, those delivering movies/TV shows showed higher concern than average for rebuffering (44%) and less for startup / join time (4%).

## Content delivery challenges and priorities

### 7 What was, is, or would be your main reasons for choosing a multi-CDN approach for video delivery? (Select all that apply)



#### Why make the switch? Multi CDN motivators

Once again, the leading motivation for switching to Multi-CDN was cost, with 40%. 31% answered they prioritized improving quality of their streaming performance, 30% said increased capacity for managing audience peaks, like season finales or crunch sports fixtures, and 27% opted for improved geographical performance. 22% selected better insight into QoE, 21% were interested in increasing redundancy due to having multiple providers, and 19% are interested in increased platform resilience.

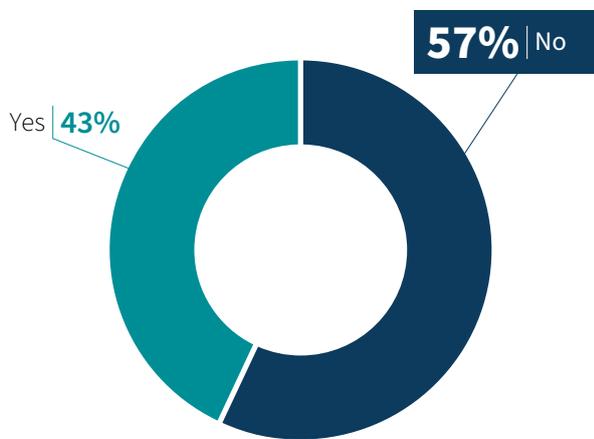
#### KEY TAKEAWAY

Of those who replied they are planning to move from a Single-CDN to a Multi-CDN setup, 47% selected cost as their main motivation for making the switch. For those delivering Sports, a significant variance is seen - with 59% listing increased capacity/adaptability for audience peaks, whereas for those delivering movies/TV shows 38% selected improved quality of streaming performance.

## Multi-CDN: motivation, blockers, & impact

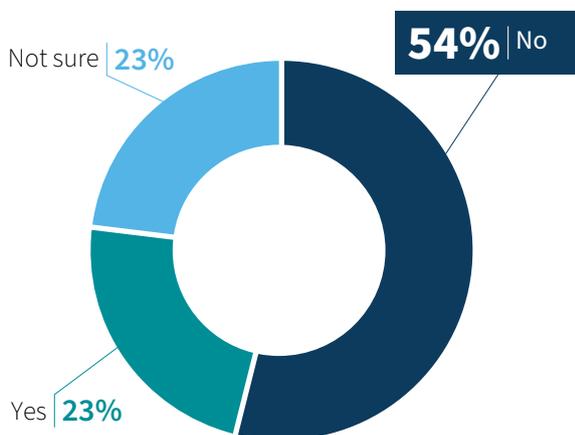
*Why video providers switch to Multi-CDN, what's stopping those who haven't, and the effects of making the switch.*

### 8 Have you overrun a traffic commitment with a third-party CDN for video delivery in the past 12 months?



Although platform resilience was only a priority for 19% of respondents in question 7, the results here show that a high percentage of the industry have suffered in both financial and QoE terms from underperforming content delivery strategies, with 43% having overrun a traffic commitment in the past 12 months (leading to costly excess charges).

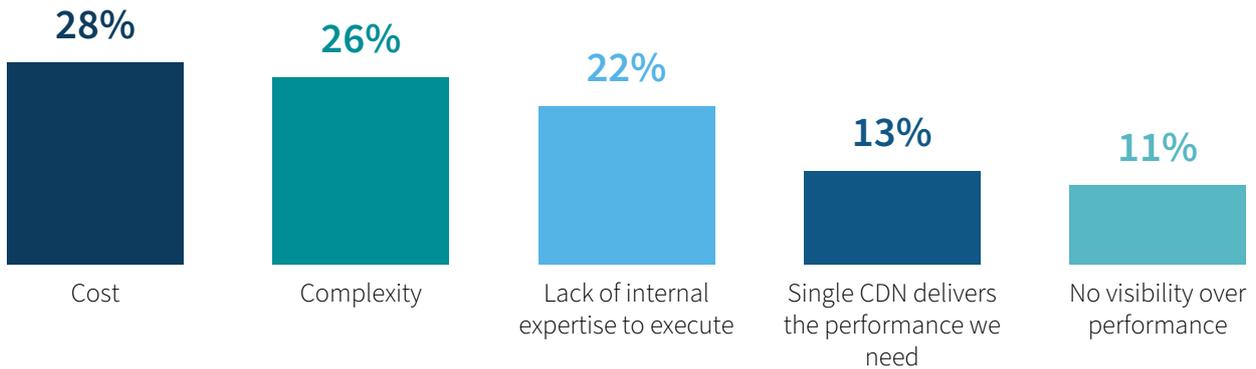
### 9 Have you had a blackout or service deterioration in the past 12 months from a third-party CDN delivering your videos?



Potentially more impactful financially, 23% stated that in the past 12 months they have suffered from a third-party CDN blackout or service deterioration, and 23% don't know whether they have or not — which is arguably more troubling for a video provider in 2020.

## Multi-CDN: motivation, blockers, & impact

# 10. What are (or were) the barriers stopping you from implementing Multi-CDN?



### Perceived blockers to Multi-CDN

There are several reasons why not every provider is Multi-CDN - including the valid one selected by the 13% who answered that a Single-CDN setup delivers the performance they need.

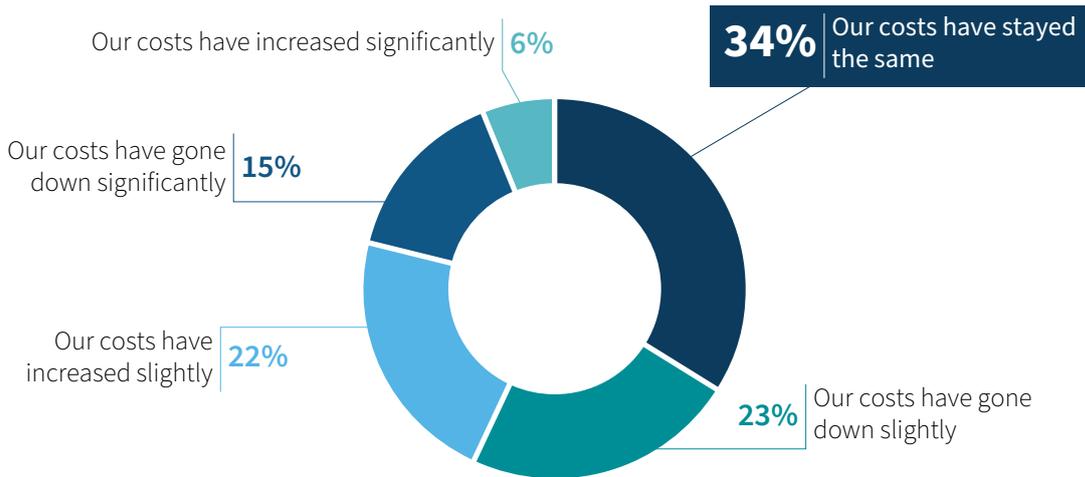
This section is designed to shed light on the question: what is stopping providers who would certainly benefit from Multi-CDN from taking the leap? For 28% it is cost, while 26% cited complexity as a barrier, accompanied by 22% who consider they lack the internal expertise to execute. A further 11% answered they are blocked from CDN switching as they have 'no visibility over performance'.

### KEY TAKEAWAY

These results indicate that there is still a need for education and expertise guiding new players in the market towards an optimal CDN architecture. This lack of expertise could also be linked to a lack of observability: the essential element to being able to accurately implement a high-performing content delivery strategy. We can also notice a divergence on perceptions of the financial impact of going Multi-CDN, with 28% naming it a barrier and 40% noting cost as a motivation to switch to Multi-CDN in Question 7. This could be put down to concerns over initial implementation costs contrasted with the long-term ROI benefits that improved content delivery has to offer.

## Multi-CDN: motivation, blockers, & impact

# 11. What impact has implementing a multi-CDN video strategy had on your overall costs?



### Impact on costs

Discounting those respondents who are still working with a single CDN, 34% said their costs have stayed the same since going Multi-CDN, 23% said their costs have slightly decreased, just edging 22% who say that costs increased slightly. Only 15% say their costs decreased significantly, however that is over double the 6% who said their costs increased significantly.

a result of switching based on CDN delivery costs, avoiding traffic overages, or - more holistically - proactively reducing churn caused by unsatisfactory streaming experiences. Hand-in-hand with the results overleaf on improved quality, these numbers make a powerful argument for Multi-CDN.

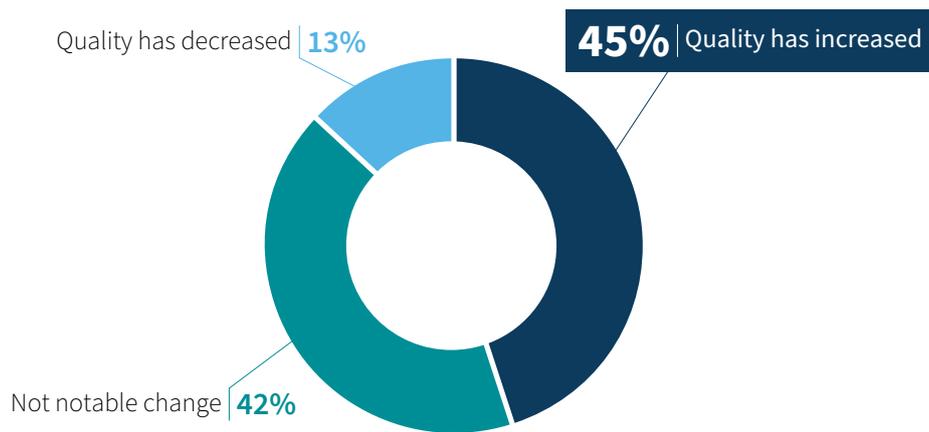
### KEY TAKEAWAY

Although cost is seen as a blocker for switching to Multi-CDN, 72% of those who have switched say their costs decreased or stayed the same after switching. This cost reduction could be

**72%** of video providers who have switched to Multi-CDN say their costs have decreased or stayed the same

## Multi-CDN: motivation, blockers, & impact

# 12. What impact has a multi-CDN video strategy had on your streaming performance?



### Impact on quality

Again, discounting those who haven't made the switch, 45% percent said that streaming quality has increased and 42% said there has been no notable change (although 90% of these respondents also replied that their costs had decreased or stayed the same). Only 13% say that quality has decreased - a good sign for anyone with doubts over the effectiveness of Multi-CDN.

This broad term can include a range of improvements, from delivering sufficient bitrate, optimizing bandwidth according to locations, and reacting to network variations to avoid service blackouts at key moments.

### KEY TAKEAWAY

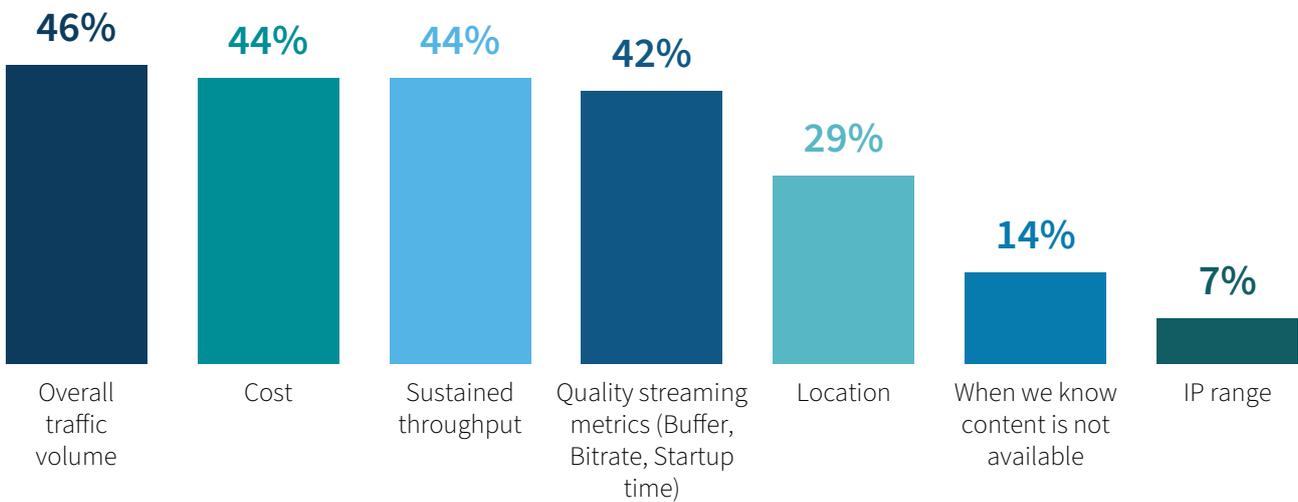
As expected, Multi-CDN switching results in enhanced streaming quality performance.

**87%** of video providers who have switched to Multi-CDN say their streaming quality has increased or stayed the same

## Performance measurement & switching techniques

What KPIs are providers using to drive CDN switches, and where are they getting the metrics to inform those switches?

### 1.2 What are the rules and criteria that you have in place to make you switch between one third-party CDN and another? (Select all that apply)



#### CDN switching rules

Unsurprisingly, considering answers to previous questions, traffic volume (46%) and cost (44%) — two closely linked metrics — are clear priorities for switching from one CDN to another. Sustained throughput (or max bitrate), is equally high on the list (44%), shortly followed by quality metrics like buffer and startup time (42%). Location-based switching (29%) registers double the answers of those providers who are switching based on insights from their own reporting systems that allow them to know in advance that content is not available, and a

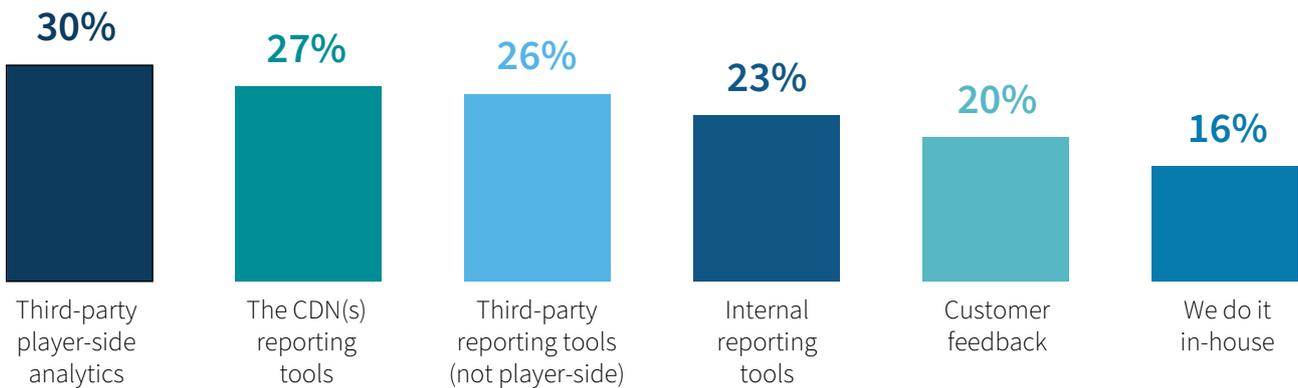
switch is necessary. Lastly, only 7% are using IP range to drive switches.

#### KEY TAKEAWAY

Cost and traffic volume are the leading reasons Multi-CDN providers are switching CDN. Beyond that, QoE-based considerations are the driving forces - including sustained throughput and switches based on in-stream metrics like rebuffering, join time, and bitrate.

## Performance measurement & switching techniques

# 14 How do you evaluate the performance of your CDN(s) for video delivery? (Select all that apply)



### Measuring content delivery

A majority of 30% responded they are using player-side third-party analytics, which (like YOUTUBORA) measure actual end-viewer usage data - the only way to know exactly how your CDN efforts are impacting on your audience. A high percentage (27%) are relying on their CDN's reporting tools to measure performance, 39% are using either internally developed reporting tools or in-house methods to evaluate performance and 26% have incorporated third-party tools (not player-side) to measure delivery further back in the workflow.

### KEY TAKEAWAY

There are many ways to construct a tech stack that will enable you to get the most out of a Multi-CDN architecture. However, without player-side visibility, the only way to understand the direct impact of your CDN strategy on the final user is through customer feedback which, although a valuable complementary evaluation tool, cannot be relied upon to proactively optimize the final impact of your content delivery. The goal is actionable end-to-end observability throughout the workflow from origin to the end-consumer; the challenge for video providers is to construct the tech stack that most effectively serves their business needs.

# Conclusion

Multi-CDN usage is on the up. 75% of respondents said they are already Multi-CDN or are planning to move to Multi-CDN in the near future. Higher competition for users and increasing user quality expectations are driving the need for improved content delivery, and blind spots on performance are no longer acceptable. The bottom line: objective visibility of the end-user experience is an essential part of the puzzle on content delivery.

Here at NPAW, we see a lot of data. From over 150+ customers across the world with over 100 Bn Plays, we're well placed to set companies in the right direction when it comes to implementing streaming business strategies based on reliable, comprehensive, and real-time end-user data. Contact us for a free consultation on how to implement player-side analytics into your content delivery workflow.



Get in touch to book a free and personal consultation with an experienced video expert.

**GET IN TOUCH**  
[info@nicepeopleatwork.com](mailto:info@nicepeopleatwork.com)

## About NPAW

NPAW — **Nice People At Work** — is a video intelligence company helping online streaming services grow. A global leader in its space, NPAW has a decade of experience developing groundbreaking and scalable analytics solutions to optimize performance and user engagement to build media experiences that maximize revenue. NPAW serves more than 150 video services and processes 100 billion plays per year worldwide.



YOUBORA, NPAW's flagship solution, provides OTT, broadcasters, telcos, and media groups with advanced visibility of platform performance, audience behavior, advertising and content efficiency in real-time to support informed, data-driven decisions.