

# Video Play Failure (VPF) Analysis



**Incident Date:**

18 August 2020

**Watching Users:**

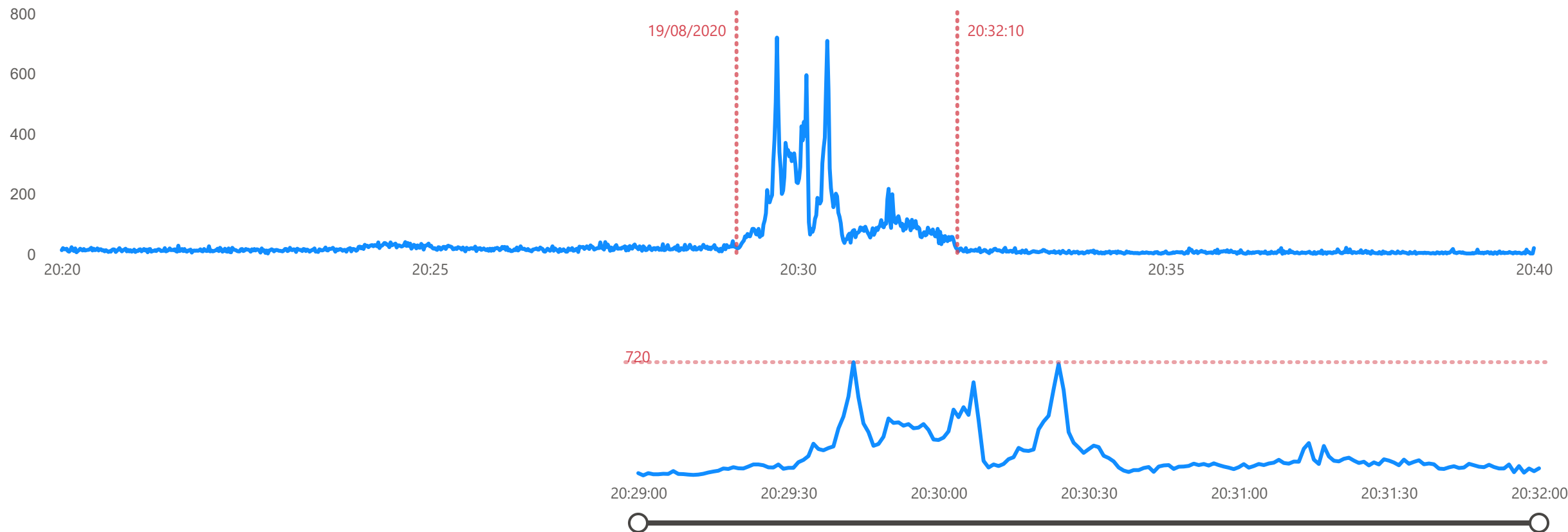
38.773 K

**Watching Countries:**

29

**Average Streaming Time:**

4min 39 seconds (279.73ms)



Comments:

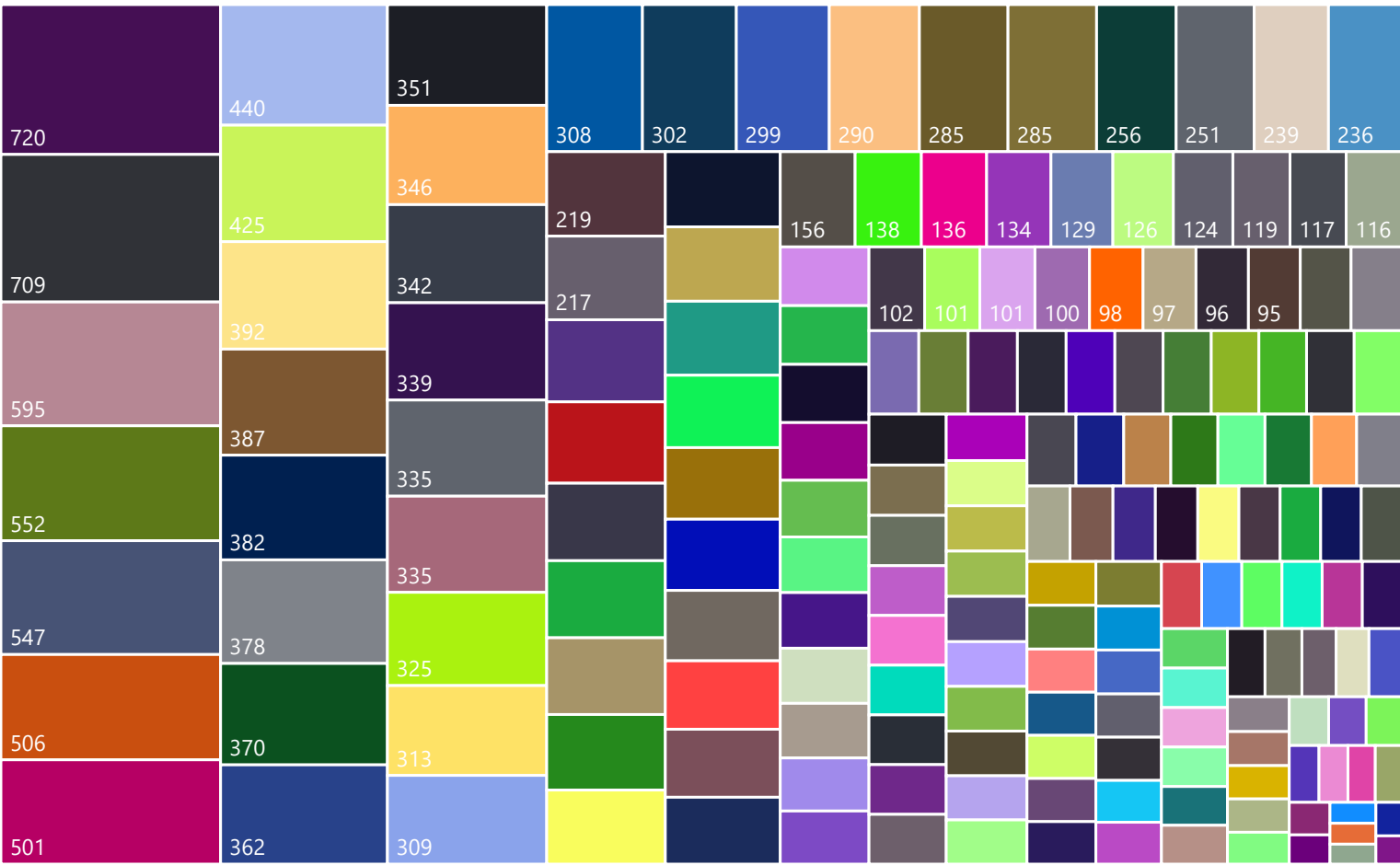
During the time frames of 20:20:00 to 20:29:09 and 20:32:11 to 20:40:00, the football transmission remained within the acceptable streaming parameters. A noticeable rise began at 20:29:10 and continued until 20:32:10, with the highest point reached during these three minutes.

# Detailed Peak Time

Table count of terminated streaming

startTime	Count of Terminated streaming
19/08/2020 20:29:43	720
19/08/2020 20:30:24	709
19/08/2020 20:30:07	595
19/08/2020 20:30:23	552
19/08/2020 20:30:25	547
19/08/2020 20:29:42	506
19/08/2020 20:29:44	501
19/08/2020 20:30:05	440
19/08/2020 20:30:03	425
19/08/2020 20:30:06	392
19/08/2020 20:30:22	387
19/08/2020 20:29:41	382
19/08/2020 20:30:04	378
19/08/2020 20:29:50	370
19/08/2020 20:30:08	362
19/08/2020 20:30:21	351
19/08/2020 20:29:52	346
19/08/2020 20:29:51	342
19/08/2020 20:29:45	339
19/08/2020 20:29:54	335
19/08/2020 20:29:57	335
Total	26180

Treemap distribution of terminated streaming



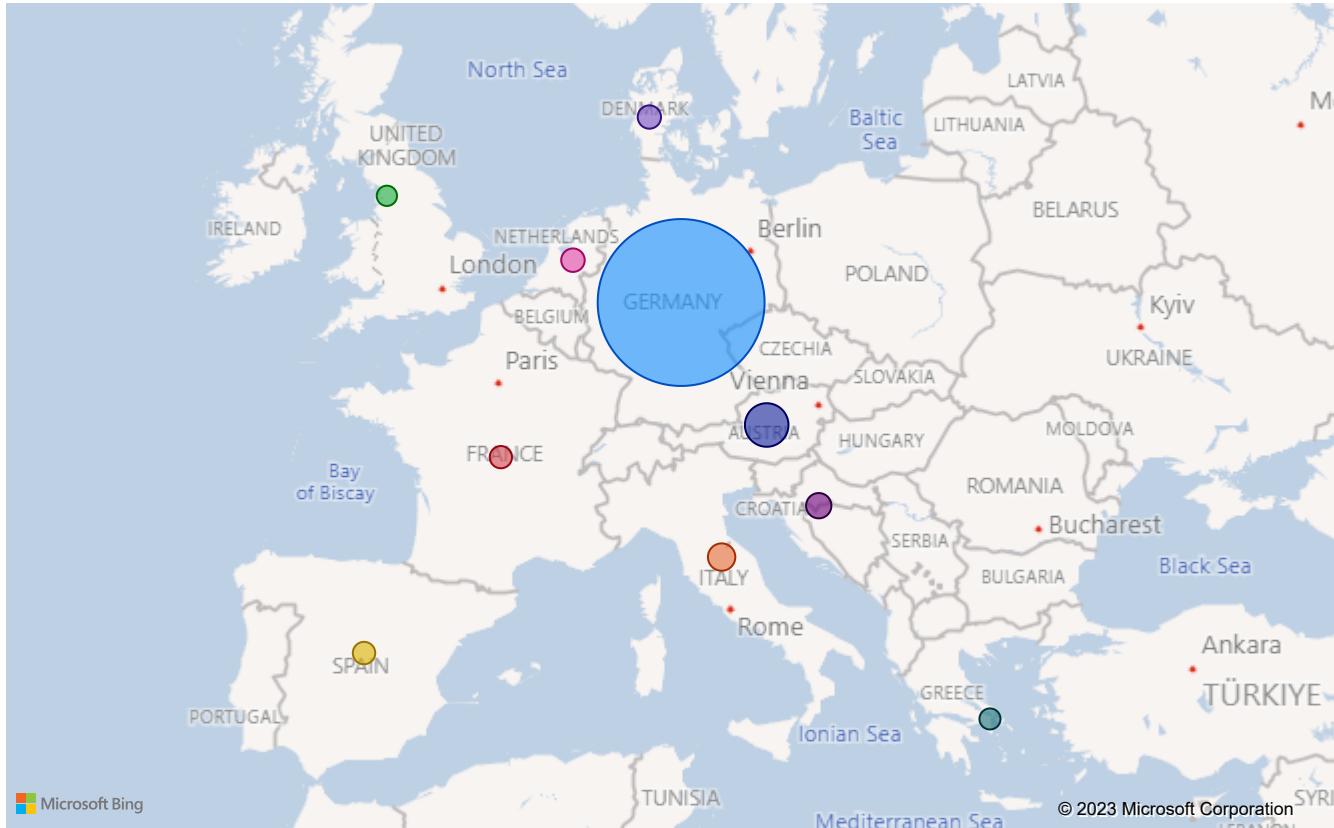
Comments:

The highest point of peak time occurred at 20:29:43 were 720 times match was terminated.  
Total value of 26180 indicates total counts of terminated streaming, this tells us that peak time 67% of users did not watched match till the end.

## Geographical Distribution

Top ten countries affected by terminated streaming

- germany
- austria
- italy
- croatia
- netherlands
- denmark
- spain
- france
- greece
- united kingdom

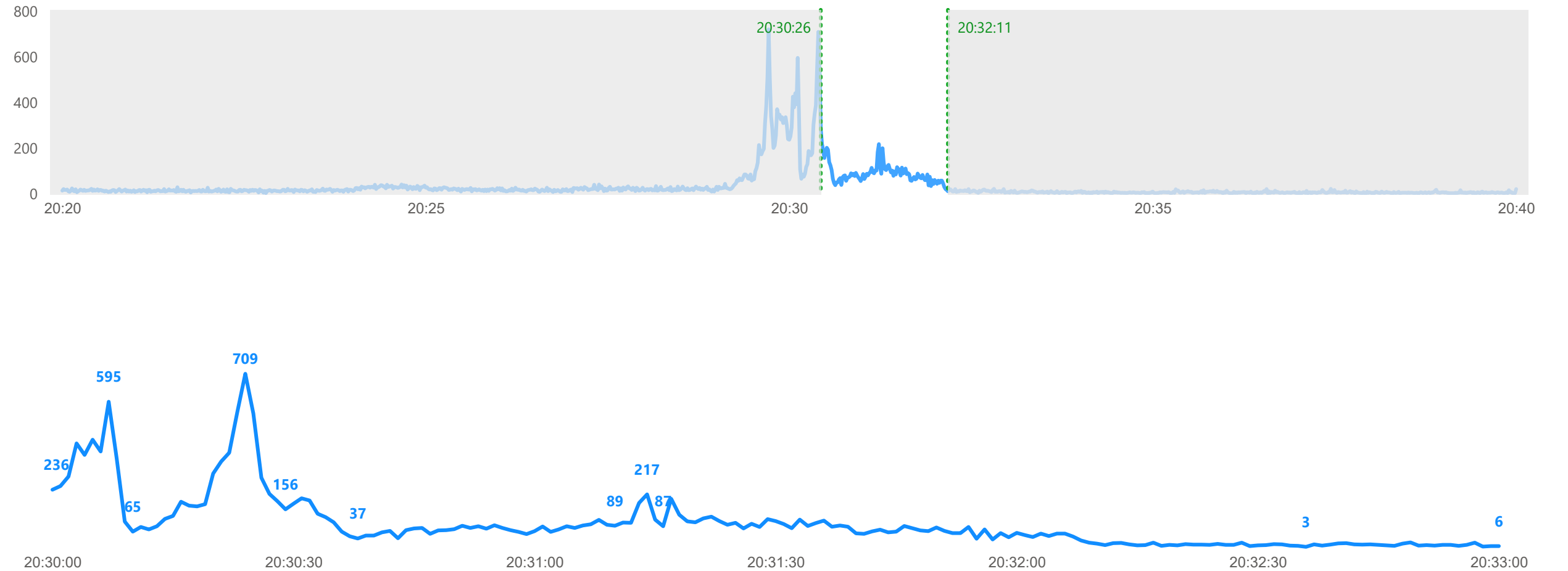


Country	Count of Terminated streaming
united kingdom	21
spain	53
netherlands	75
italy	186
greece	31
germany	36813
france	50
denmark	71
croatia	121
austria	1175

Comments:

The most suffered fans were based in Germany, Austria, Italy and Croatia. Slightly under 100's terminated streaming occurred in Netherlands and Denmark.

# Mitigation Period

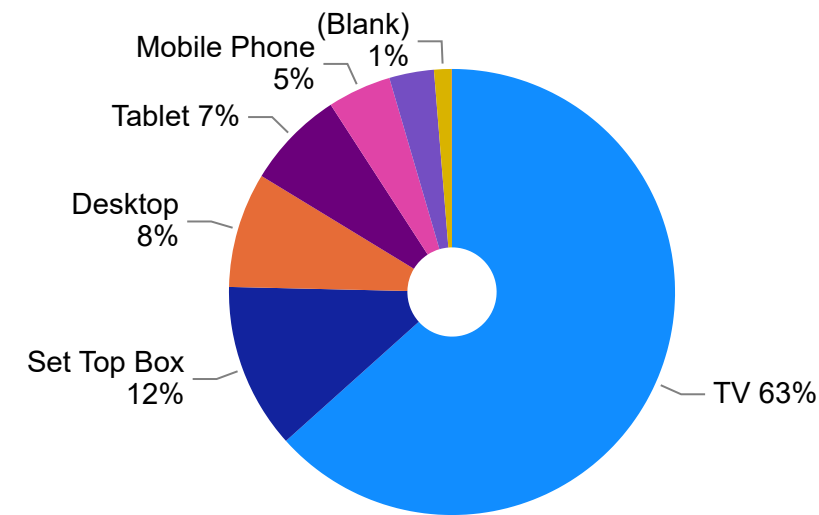


Comments:

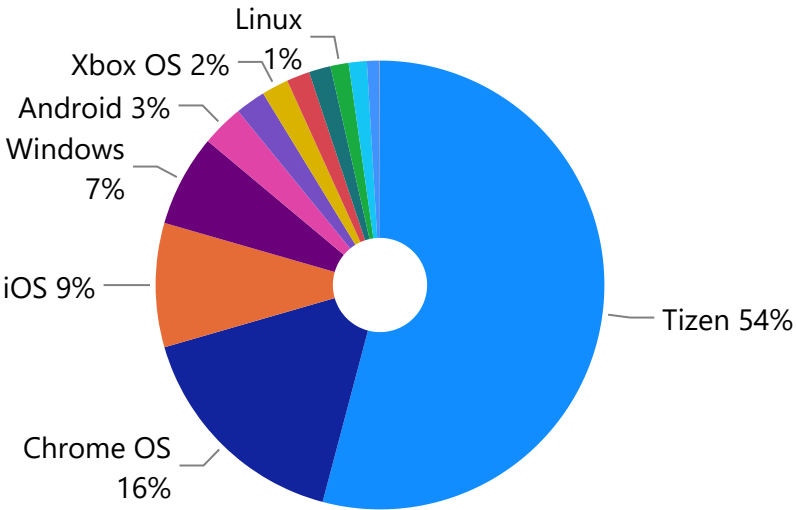
The issue subsided at 20:30:26 until 20:32:11, the duration of downfall trend last for 1minute and 45 seconds.

# Data Split

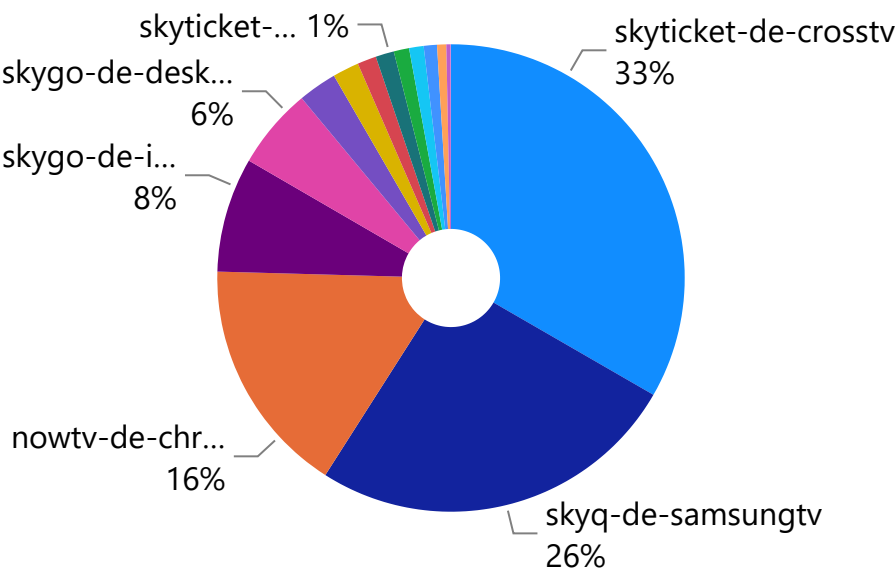
Hardware Dispersion



Operating System Dispersion

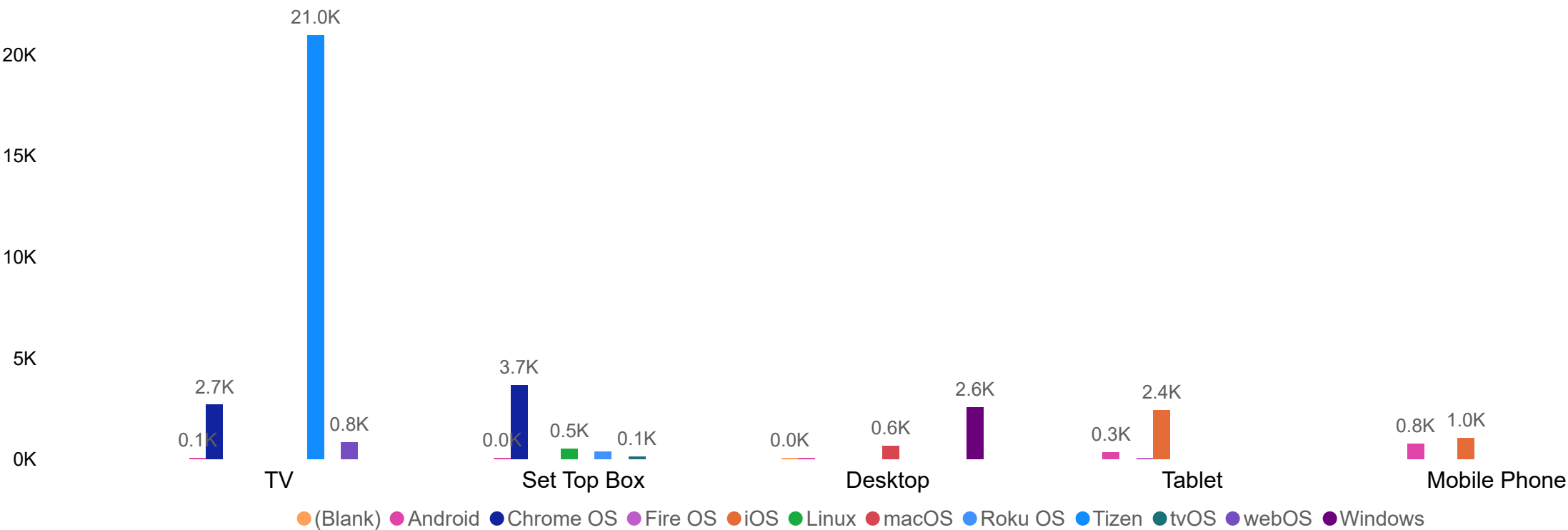


Player Name Dispersion



# Clustered Data Split

Terminated Streaming by Device vs Operating System

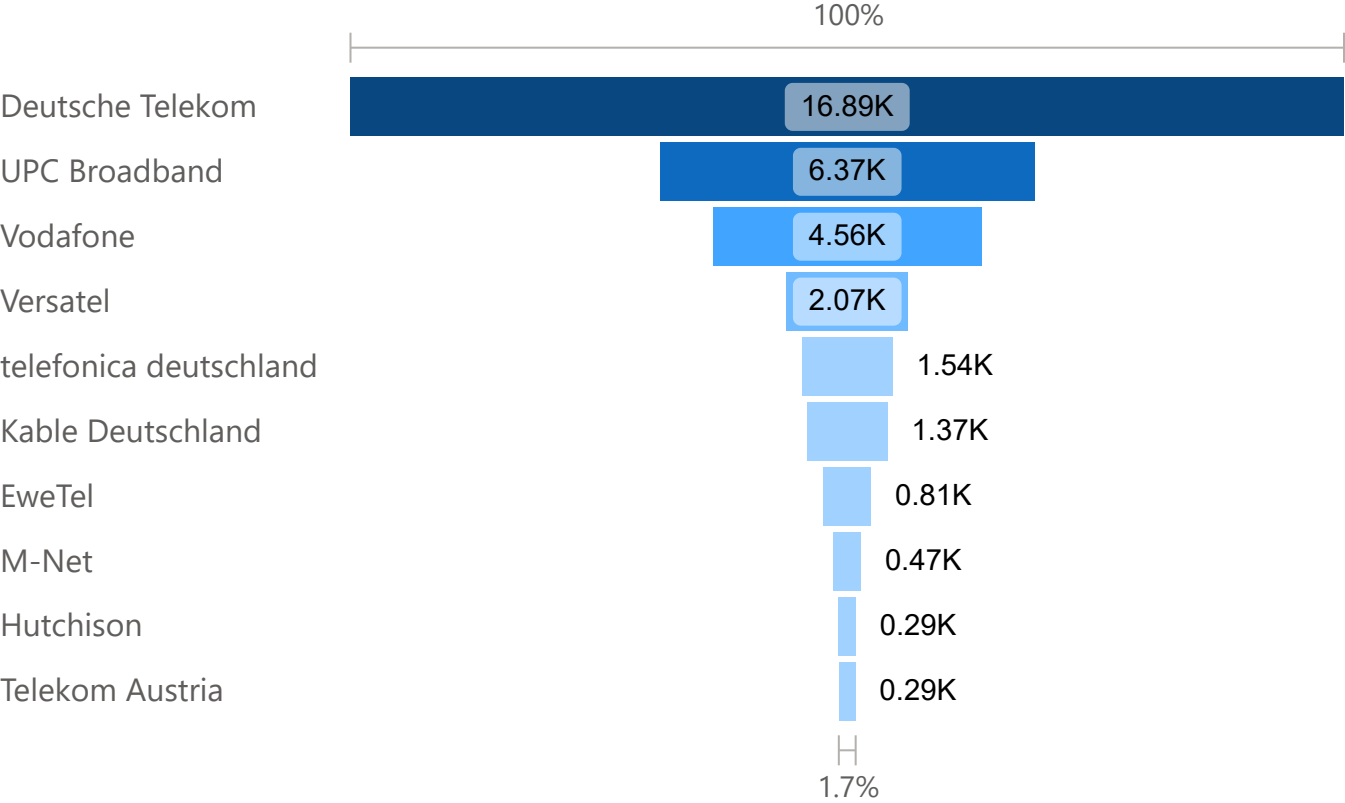


Comments:

The primary devices that experienced issues were the TV, set-top box, and Desktop PC. The Tizen operating system is closely integrated with TVs, and television decoders are connected to Chrome OS. When users watched football on their PCs, they encountered problems with the Windows operating system.

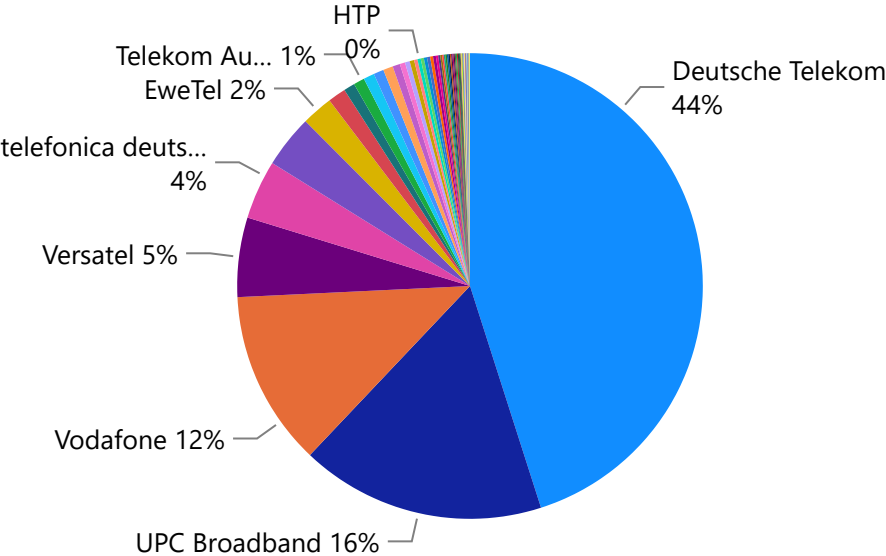
# Distribution of internet service provider (ISP)

Terminated streaming by ISPN



Top five watching country

Country	Count of Country
germany	36813
austria	1175
italy	186
croatia	121
netherlands	75



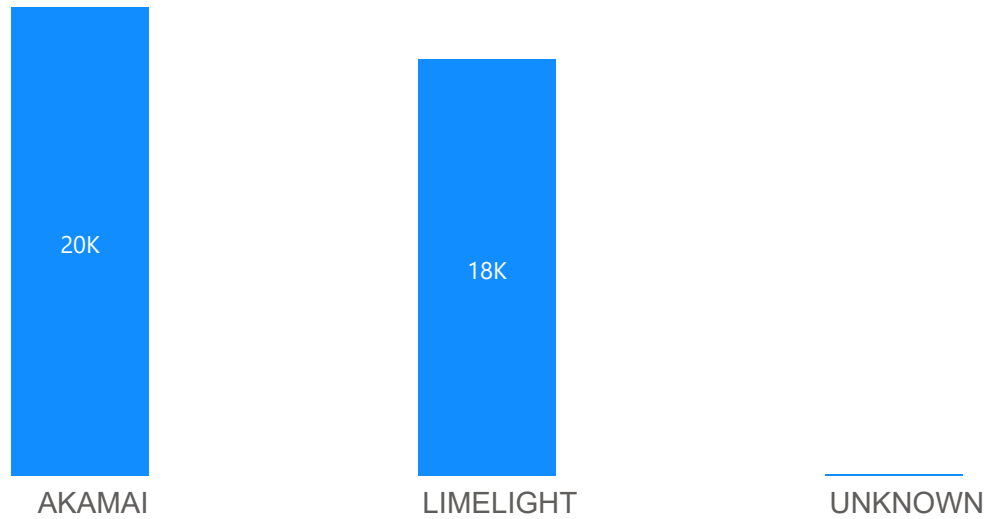
Comments:

Internet service providers played a key role in the issue. Deutsche Telekom, UPC Broadband, and Vodafone (all German companies) failed to deliver content.



## Distribution of Content Delivery Network (CDN)

Terminated streaming by CDN



Comments:

Count of streaming errors for both Akamai and Limelight shows almost the same value; hence this issue won't be strictly related to one CDN.

# Correlation of terminated streaming and interrupts

Terminated streaming & Interrupted streaming

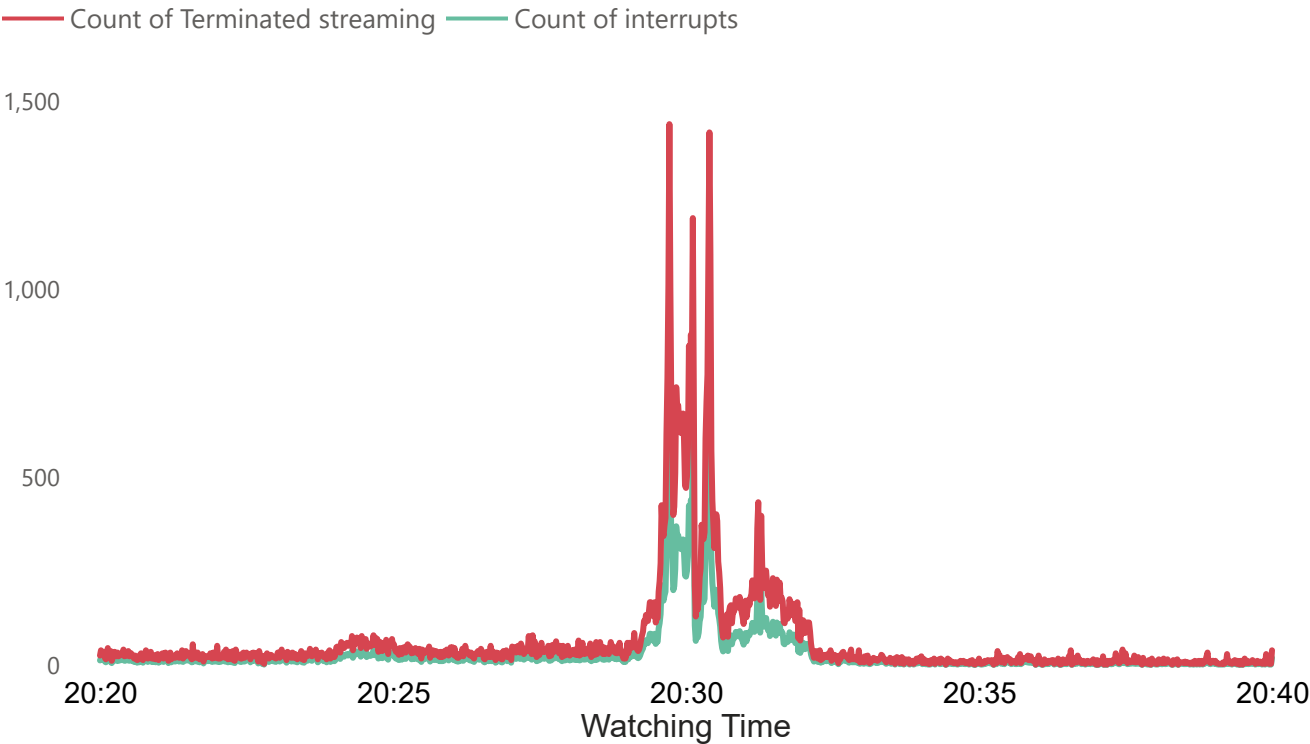


Table count

convertedStartTime	Count of Terminated streaming	Count of interrupts
20:29:43	720	720
20:30:24	709	709
20:30:07	595	595
20:30:23	552	552
20:30:25	547	547
20:29:42	506	506
20:29:44	501	501
20:30:05	440	440
20:30:03	425	425
20:30:06	392	392
20:30:22	387	387
20:29:41	382	382
20:30:04	379	379
Total	38733	38733

Comments:

Interrupts and streaming errors are strongly correlated with each other, as they both occur within almost the same peak time range and subside simultaneously.