



2014

# Viewer Experience Report



# Executive Summary

The Internet is now firmly established as a source of video entertainment, and the explosion in ownership of connected devices is driving our insatiable desire to watch. Gone are the old restrictions of the television and set-top box. Now consumers watch in the mornings with their smartphones, over lunch on their PCs and in primetime on a connected TV. The multiscreen future is now our television present.

“The multiscreen future is now our television present.”

As consumers spend increasing time with online video, expectations of quality delivery increase. The amount of time lost in viewing online due to a 1% increase in video buffering ballooned 167% in 2012 and another 38% in 2013.

As tolerance for poor performance plummets, video quality is making only incremental improvements. The percentage of video views impacted by buffering did decrease by 31% in 2013, but there was also a 5% increase in video start failures. And nothing loses a viewer faster than when their video doesn't start!

Nowhere is the impact of buffering more apparent than in live sports, where a break in the action is almost guaranteed to lose the viewer. Buffering causes viewers to click away in just 1 minute, leaving behind 40 minutes of viewing time for uninterrupted viewing. For movies,

video quality is the thing: viewers watch 2.5 times longer in high versus standard definition.

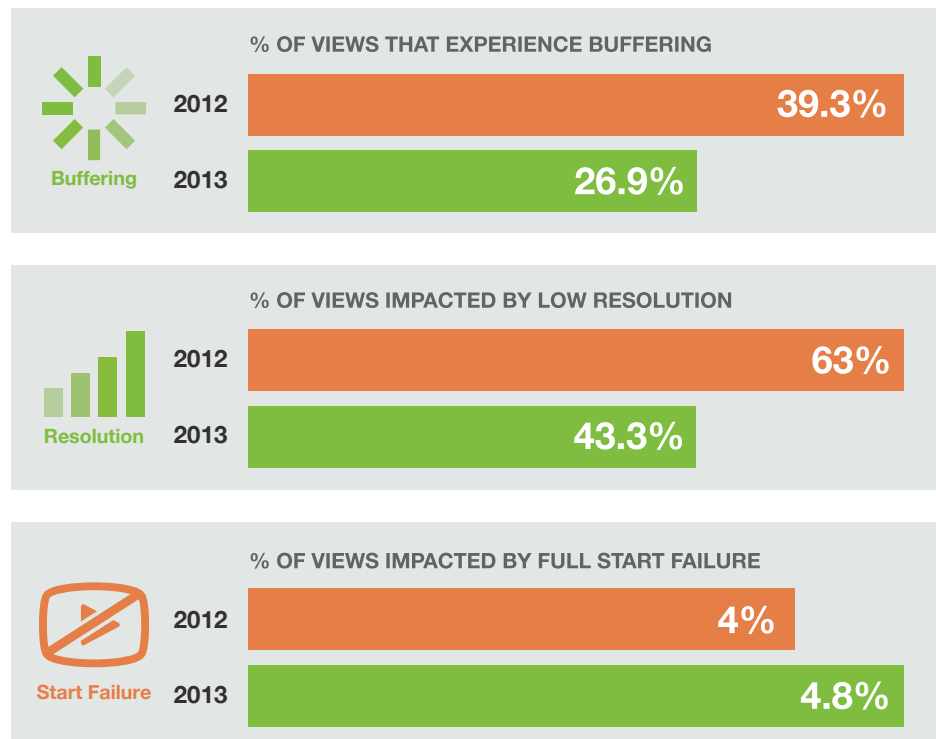
All of these connected screens and plentiful supply of great content online is upending decades old behaviors in the home. Streaming devices are proliferating, with a 28% increase in the number of concurrent devices being viewed during evening primetime hours. When we account for the concurrent usage of traditional television sources, we see that each person in the streaming home is increasingly watching their own show, on their own screen, at primetime. In these homes, communal viewing is becoming extinct.

For online video providers, the days of focusing multiscreen efforts on just the iPad and PC are fading fast. Providers must work to improve video quality, buffering performance and startup time to all screens — including large screen TVs — not just a select few. And as to tracking viewing behavior, the old TV metrics based on viewing households no longer cut it. Knowing what's happening with each individual viewer has never been more important.

Bottom line: Watching video entertainment on a variety of connected devices has become a way of life. Consumers are increasingly expecting the TV-quality experience they're accustomed to receiving from traditional video service providers. The business of television is changing, bringing with it a complex new ecosystem. Content publishers and service providers who don't adapt will not fare well.

# State of the Streaming Industry

Increasing consumer demands for quality negate marginal progress by content publishers.

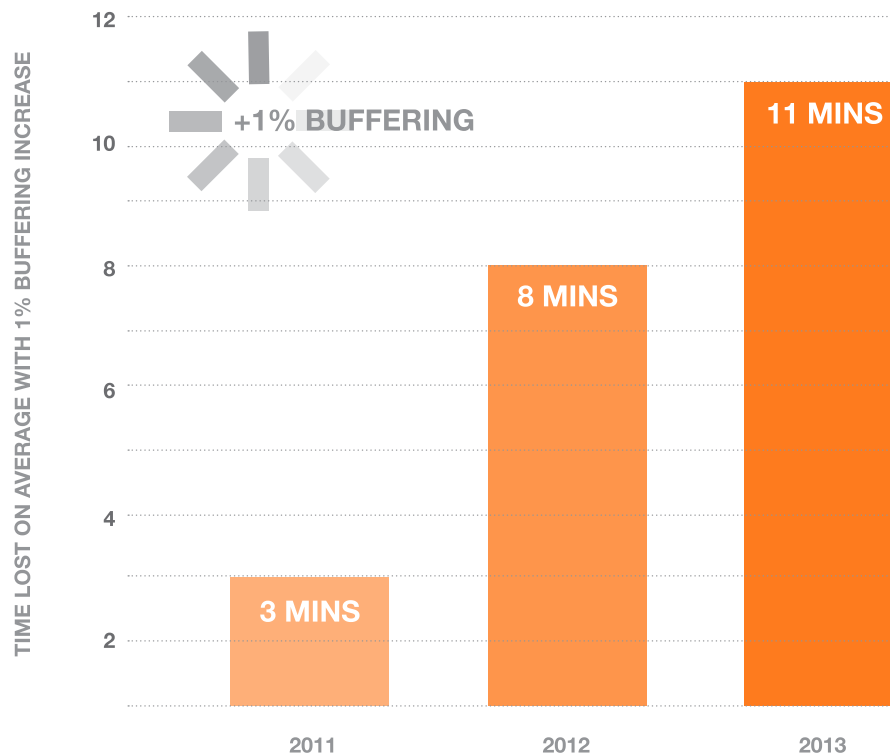


Over the last year there has been some improvement in video streaming performance. The number of video views that experience buffering decreased from 39.3% to 26.9%. The amount of views impacted by low resolution delivery also improved from 63% to 43.3%. Unfortunately, video start failures did not fair as well, increasing from 4% in 2012 to 4.8% in 2013.

While the improvements should be celebrated, there is still a long way to go before consumers receive the quality they want with the consistency they expect. Consider that, even with the year-over-year improvements, more than a quarter of all video views left the consumer watching the spinning wheel indicating buffering is occurring. Worse still, more than 2 in 5 views were at grossly inferior video quality.

Most disturbing is the increase in video start failures. 1 in 20 times, when a consumer decides to watch something online, the video simply doesn't start.

## The Amount of Time Lost on Average with an Increase of 1% Buffering



While the quality performance of streaming video continues to be problematic, the expectations of video performance by viewers continue to increase. In 2011, video viewers were much more tolerant of video playback problems than today. The amount of time lost from a viewing session due to an increase in video buffering of 1% was just 3 minutes. In 2012, that grew to 8 minutes. In 2013, video viewers experiencing the same level of buffering watched 11 minutes less.

The message is indisputable, as consumers increasingly turn to the web for their video needs, their expectations of the experience are rising. This is very frustrating to video providers. As they have worked to improve quality, and the data shows they have made some tangible gains, consumers' expectations have also increased, in effect negating the progress! The lesson is only too clear: video providers need to redouble their efforts to improve quality.

# The Impact of Quality by Content Genre

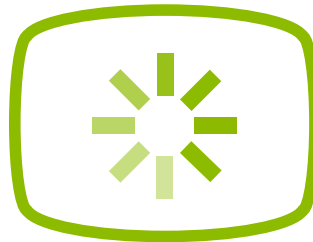
Buffer and Die: Why stalled streams will kill your business.

All content types are not created equal  
when it comes to online streaming.

However, some truths are universal.  
Whether the video is short or long, live or on-demand:



The higher the video  
quality the longer  
people watch



Video impacted by  
buffering pays a high  
price in engagement time



It's always better to  
drop video quality than  
cause a video to stall

# How Quality Impacts Engagement: Long Form Video



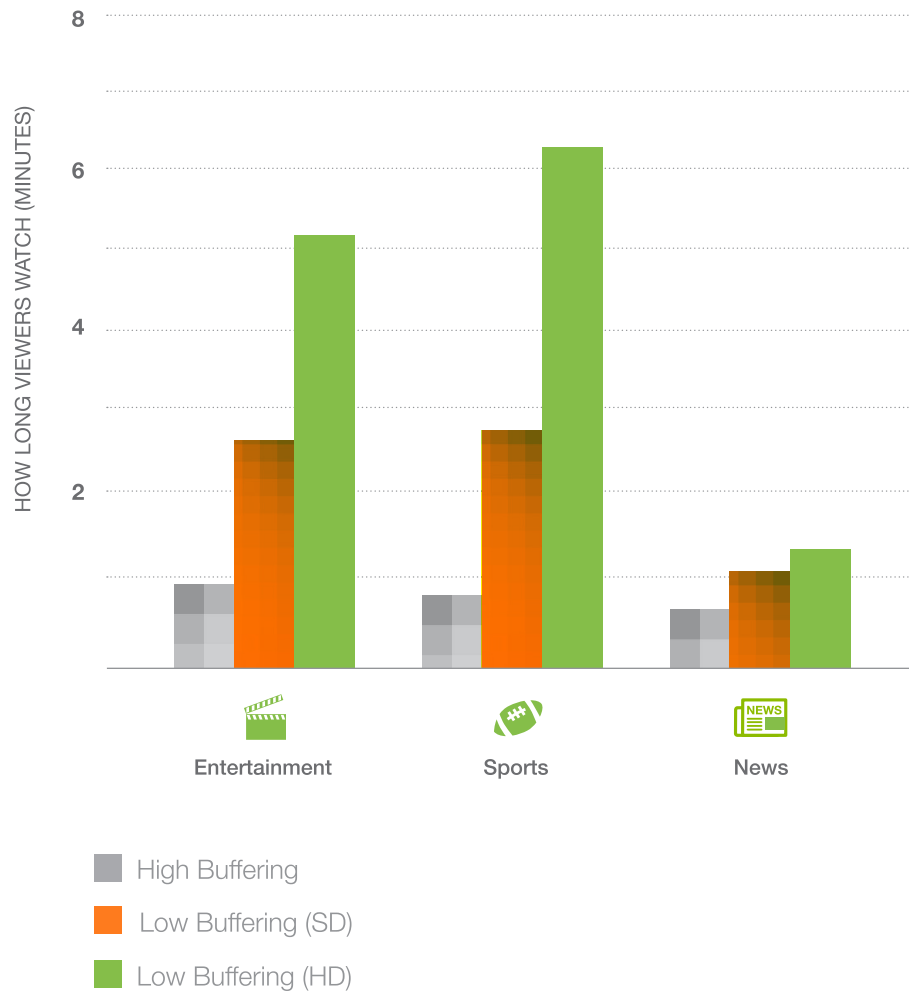
Pity the plight of a movie streaming service: its success is completely dependent on video quality. The data shows it will pay the highest penalty of all content types for low quality delivery. Viewers watch over two and half times as long in high definition than in standard definition.

For live sports the critical thing is to never, ever cause the viewer to miss any of the action. Average viewing time plummets from over 40 minutes in HD, to just 1 minute if the viewer encounters high buffering. The penalty paid for lowering quality is much smaller, with engagement times for standard definition falling just 20% over HD viewing.

Live news is very similar to live sports, though viewers place less importance on the difference between HD and SD when watching news. However, taking the data for live sports and news together, it becomes clear that live viewing brings with it special expectations of continuous delivery.

Episodic television provides the greatest margin for quality variability, though HD delivery remains a critical component of viewer retention.

# How Quality Impacts Engagement: Short Form Video



Viewer tolerance for buffering is only marginally higher for short form content than long form.

Comparing news clips to the stats for live news delivery on the previous page, the data shows how important buffering performance is to live. With news clips, quality is hardly a factor in viewing time at all. Viewers are even willing to put up with buffering more, watching just twice as long in standard definition as with the buffered views.

High definition delivery for sports and entertainment is still a critical component for success, even with short form videos. Viewing times at least double if a video provider is able to deliver in HD.

Conviva data suggests that high consumer expectations of their online video streaming experiences will continue to increase in the coming months and years. Likewise, the difference in viewing times between high and standard definition will continue to grow. The data also highlights how important it is to work to reduce video buffering. Improvements here are certain to have the most impact on any video streaming enterprise.



# Multiscreen Turning Primetime Viewing into a Solo Activity

In streaming households across the US we are witnessing the demise of communal viewing.

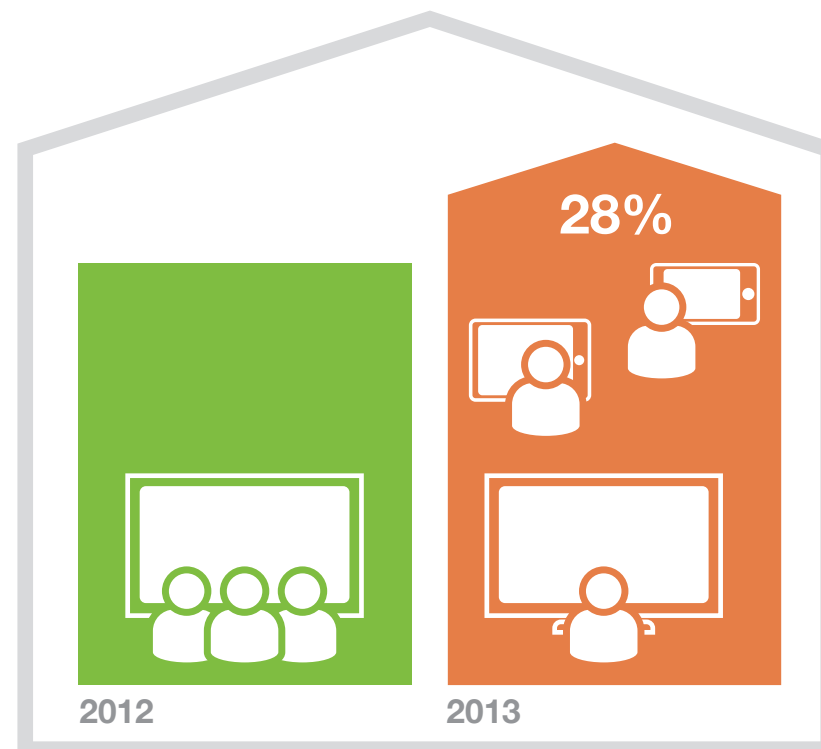
Conviva data shows that connected devices are starting to reshape the experience of television during what has traditionally been family viewing time. A study of streaming households (measured by distinct IP address) shows that the number of concurrent streaming devices has increased by 28% year-over-year. The increasing use of mobile, tablets and game consoles as streaming devices has brought on a sea change in how people engage with content. Instead of watching as a group, viewers are increasingly viewing content individually.

It is apparent that concurrent streaming is on the rise. Coupled with the distinct possibility that many households are also tuned to a traditional pay-TV service (given US penetration of well over 80%), these factors clearly illustrate that in many streaming video households, each person is watching their own show, on their own screen, at primetime.

It is no exaggeration to say that in video streaming households in the U.S. family viewing is on a fast decline. This fact has a profound impact on the business of television going forward.

For decades, the television industry has focused data metrics around households. Nielsen reports on “television households,” the pay-TV industry measures itself by “homes passed” and “subscribed households.” The above analysis makes clear that using households as the basis for calculating viewing behaviors just doesn’t cut it anymore. With everyone watching their own show at primetime, the industry must rapidly shift its metrics to ones based more on individual viewers.

## Average Number of Devices in a Household Used Concurrently During Primetime





# Online Viewing Is a Multiscreen Proposition

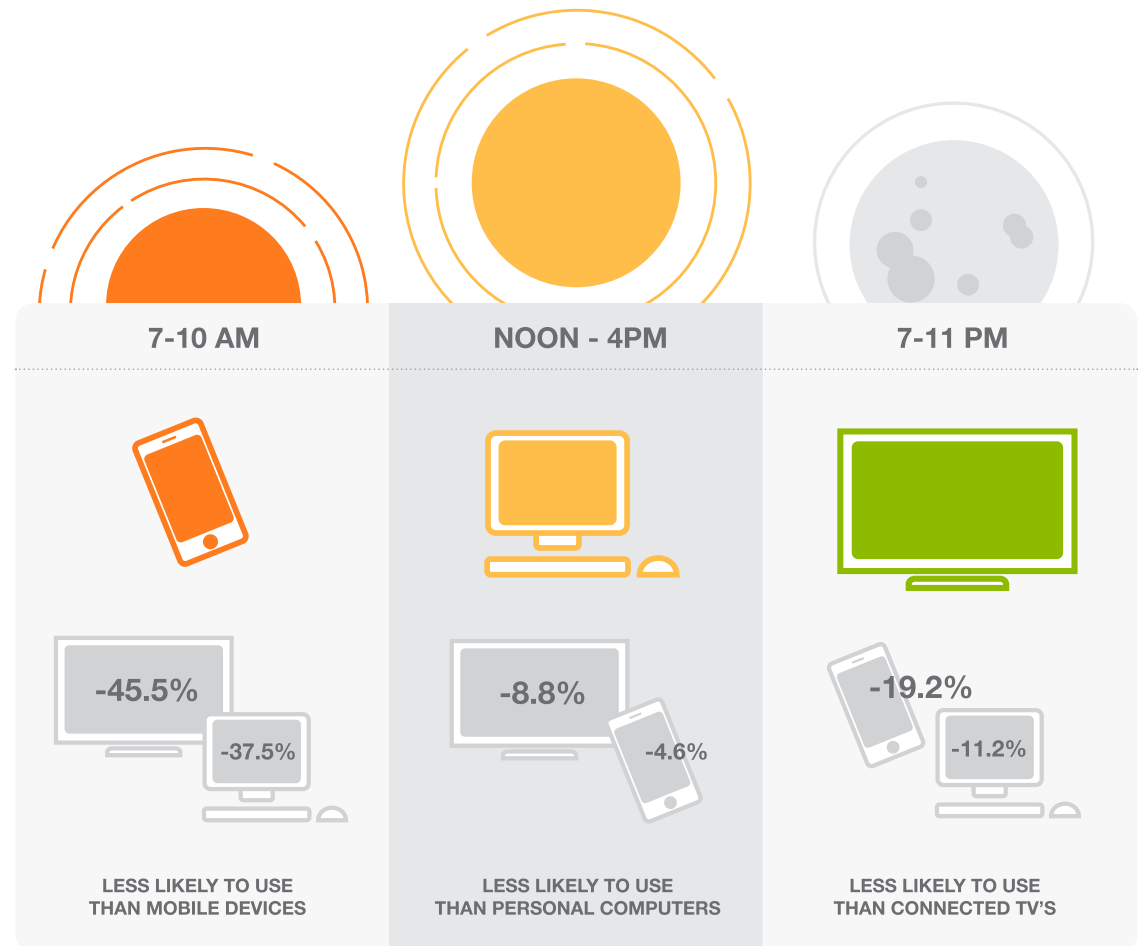
Disappoint a viewer on one screen and lose them on all.

With all the talk about mobile, it would be easy to believe that many consumers are completely abandoning the PC for tablets and smartphones. The truth is much more complex than that. Conviva data suggests that consumers are embracing the multiscreen video lifestyle, using different screens throughout the day. And their preference for a particular device shifts, depending on the time of day.

In the morning, mobility holds sway over the devices of choice. Between 6 and 10 AM, 6.9% of all video streamed daily is delivered to tablets and smartphones, making mobile devices 37.5% more likely to be used than a PC for video streaming and 45.5% more likely than a connected TV.

Fast forward to midday and the picture shifts slightly. The PC has the edge as the preferred platform and is 4.6% more likely to be used than a mobile device and 8.8% more likely than a connected TV.

At primetime, when most streaming content is consumed, screen size is king. The connected TV receives 36.6% of all video streamed daily between 7 and 11 PM. The PC's bigger screen size helps make it the second most used device, preferred 11.2% less than the connected TV. Mobile devices are the least favored during primetime, preferred 19.2% less than the connected TV. As attention switches from news and short videos during the day to dramas and comedy at night, the edge in usage gravitates toward the larger screens.



# Optimal Viewing Experience



What should an online video provider take away from this? Doing a great job on the iPad is not good enough if a user wants to stream to the TV. Simply put, it's not about a particular screen, it's about all of them. If you disappoint your viewer on one screen, you'll miss the opportunity to engage with them during other parts of the day, and risk losing them on all screens with a bad experience on a single device.

Some companies are already doing a great job delivering quality to all screens. Consider this diagram on the left. Conviva looked at video quality in terms of bitrate and buffering performance of streaming video to desktop computers across many popular streaming video services. A few are managing to minimize video buffering and stream start failures while maximizing the quality of video delivered. That puts their services in the Optimal Experience Zone.

Unfortunately, far too many online video providers just aren't getting it right. Some manage to minimize video buffering, but video quality suffers. Likewise, others provide killer video quality, but buffering occurs frequently. In both cases, the effort to improve viewing experience is wasted.

For building a successful online video business, there is simply no substitute for being in the Optimal Experience Zone.

# About this Report

This 2014 Viewer Experience Report highlights trends extracted from data provided by the 45 billion streams that Conviva analyzed across customers, geographies and devices in 2013. These streams were seen across more than 1.6 billion individual devices – including tablets, smartphones, PCs and connected TVs – and on more than 400 premium media video players.

Conviva's global customer base includes premium entertainment, news, sports and media brands, as well as leading service providers in 180 countries, delivering live and on demand content, through both subscription and ad-supported models.

Recording detailed, real-time information on each and every viewer's experience during every viewing session, Conviva data offers an unparalleled view into the trends and habits of streaming video viewers and more importantly, the direct correlation between quality and its impact on the business of online video providers.

## Conviva's Intelligent Control Platform

Conviva's real-time big data processing platform enables online video providers to deliver the best viewing experience, despite the unpredictability of a complex and fragile Internet delivery environment. Fueled by Conviva's global intelligence – gathered in real time from billions of streams per month – Conviva's Intelligent Control Platform utilizes advanced algorithms to give content publishers control over video delivery by helping them analyze, identify and preemptively avoid Internet bottlenecks and breakdowns, ultimately delivering the highest quality video without interruption. Conviva partners with the leading online video providers around the world to enrich their streaming video business by delivering a TV-quality experience over any network, to any device, at any time.

Already deployed globally, Conviva's Intelligent Control Platform is the world's most scalable Video Software Defined Networking (V-SDN) control platform, providing a highly flexible foundation to meet the ever-changing requirements of today's Internet TV business.

Conviva is based in Silicon Valley, with offices in New York and London.

For more information, contact Conviva at: [VXR@conviva.com](mailto:VXR@conviva.com)