

Research sheds light on UK's new unsustainable viewing habits

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A new study looks behind closed doors to reveal how UK viewing habits are shifting away from traditional broadcasting with more data-intensive streaming options now the default for many.

A viewing revolution is taking place. The advent of Internet TV, video sharing platforms like YouTube, and other on-demand services in recent years has massively increased flexibility and choice for viewers.

But the nature and extent of how household viewing habits have changed has, until now, relied largely on anecdotal evidence.

A team of computing researchers at Lancaster University has taken the closest look yet. They have thoroughly analysed the use of 66 computing devices, including smart TVs, dongles, tablet computers, laptops and mobile phones, for a month across 20 participants in nine UK households.

The study, which was supported by the Engineering and Physical Sciences Research Council (EPSRC), provides valuable new evidence for the researchers, who are interested in our changing viewing habits and how this links to the huge increases in Internet data traffic. Internet traffic has risen by about 20 per cent a year recently, and streaming is about half of all traffic. These rises are of particular concern as data increases are often accompanied by hidden energy use, impacting on the environment.

"This study provides a highly nuanced understanding of contemporary watching practices that are indicative of wider trends in everyday life, and how this links to data demand," said Kelly Widdicks, Ph.D. Candidate of Lancaster University and the report's lead author.

"Our findings, coinciding with statistics from the UK and US, show there has been a significant behavioural shift towards streaming as a

default with traditional broadcast TV, or DVDs, becoming obsolete for some."

All households in the study watched some form of video content every day—contributing to nearly three quarters of total household data demand.

Smartphones were the most commonly owned devices and a PlayStation games console was the most data-hungry device in the study, followed by TV dongles.

YouTube was found to be the most data demanding watching service—accounting for almost half of demand for watching across all households—and is, unsurprisingly, more popular with younger 'Generation Z' participants. Other demanding viewing services included Now TV, Netflix, Sky TV and TV Player. These were followed by social-media related video content on platforms such as Facebook and Twitch.

Researchers found that when provided with options to watch programmes in different resolutions, often higher, more data-hungry, resolutions, such as HD, were selected. Families were often watching different programmes simultaneously on different devices, so-called 'multi-watching', which amplifies data consumption.

The study also uncovered evidence of wasteful practices. Some participants use video streaming platforms, such as YouTube, as background music players—and do not actually watch the videos, despite the large amounts of data involved. Others didn't always enjoy the content they watched, or found streaming services distracting from their everyday chores and activities.

They also found that participants would rather watch programmes through online catch-up services rather than pre-record them or dig out

the DVD from their collections, because it is "just as easy" to do.

The researchers have made several suggestions to help reduce the energy demand and [environmental impact](#) brought about by the revolution in viewing.

These include academics and software designers working closely with network engineers to design functions, or prompts, that nudge viewers to consider less demanding forms of watching. These collaborations could also help pre-empt network load from new, data-intensive service designs- such as when Facebook introduced auto-playing of video, which significantly increased data demand on Internet networks.

The researchers also call on [policy makers](#) to give greater consideration to the energy and [environmental costs](#) associated with the Internet when pushing for faster infrastructure.

"Internet policies driving superfast access may only be fuelling more demand, as infrastructural capacity growth leads to increased demand", said Dr. Oliver Bates, Senior Researcher at Lancaster University and study co-author. "It is clear that policy-makers have not made the connection between all-you-can-eat marketing, by Internet service providers, and data demand and there is little discussion on the energy impact of the Internet within public policy.

"We urgently need to confront 'all you can eat' and 'binge' watching more broadly as the shift to Internet-based services has an increasing impact on people, society and the planet. Ultimately if bingeing is bad for our health why are service providers allowed to promote data gorging?"

The academics also suggest imposing limits on Internet traffic to cut data demand. Though they acknowledge that traffic limits run against ideas

of 'net neutrality' in which all Internet traffic is treated equally.

"We fully support the social justice and civic participation aims of net neutrality, but we should also consider traffic limits for reasons of greater good—environmental sustainability", said Dr. Mike Hazas, Reader at Lancaster University.

"As a result, if video entertainment traffic should cost more to reflect its environmental cost, or be otherwise limited in some way, this policy would have to be applied to all video content providers: Netflix, YouTube and the rest."

"It is time that we, as a society, work together to redefine our watching futures and begin dealing head-on with the unsustainable trajectory of this data demand," said Kelly Widdicks.

Provided by Lancaster University

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