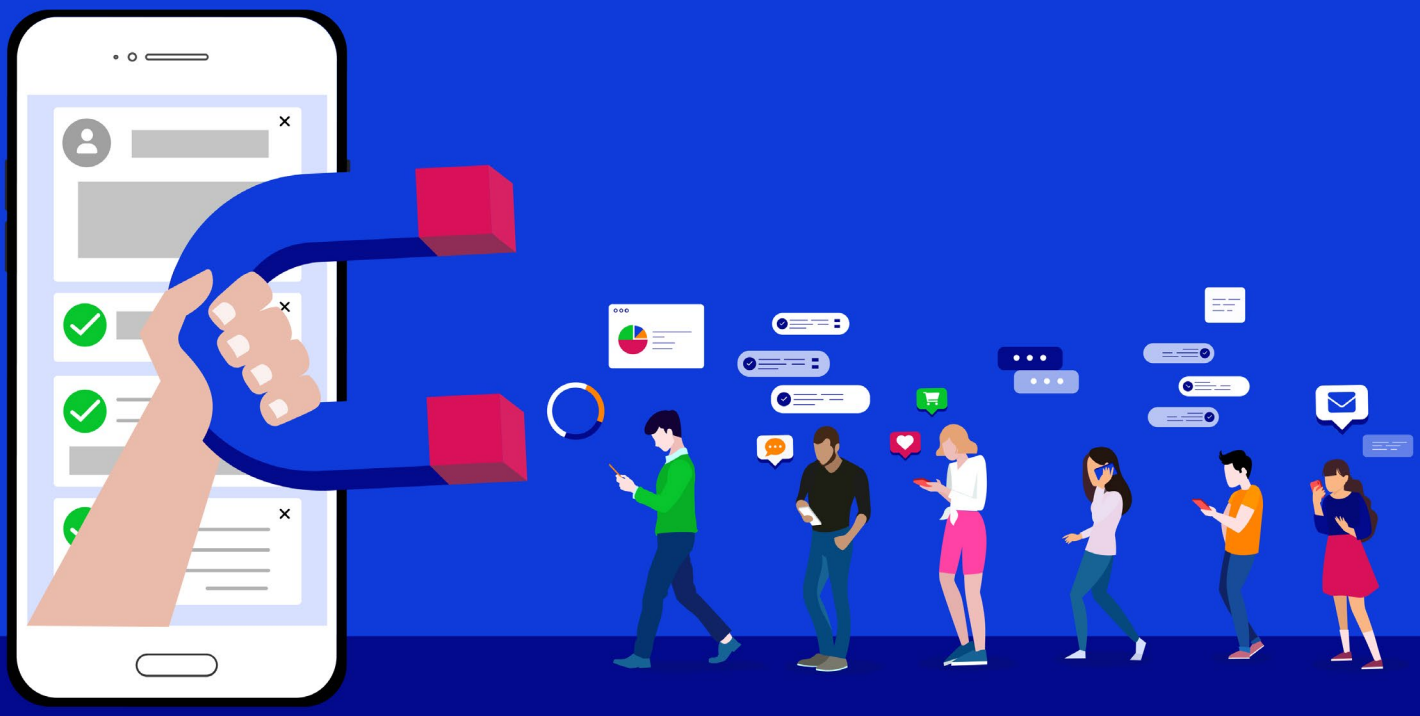
SMARTFRAME

The SmartFrame Guide to the Attention Economy



Contents

Browsing the digital version of this guide?
Simply click on the section you would like to visit.

1.

Introduction

Information used to be scarce and only available to the privileged few, but today the opposite is true. Learning to be selective is what helps us navigate our way through this; we absorb only what we consider to be most useful and discard everything else. Modern life, however, means this works better in theory than it does in practice.

Most of us use the internet on a daily basis, both for work and personal use, through desktop and mobile devices. We use these to browse the news, social media channels, and websites, and rely on a variety of apps to navigate daily life, watch streaming videos, and listen to podcasts. On top of all this, we now have rolling news coverage and a vast assortment of digital channels to keep us entertained. All of these things compete for our attention, of course, but their other commonality is that they are typically supported by advertising.

In 1970, it was estimated that the average person would see around 500 ads per day.[1] Today, some estimates put this figure closer to 5,000[2] and some even as high as 10,000.[3] Measuring this isn't easy and we should expect there to be significant variations between individuals. But as the number of avenues through which consumers can be targeted with advertising continues to grow, such lofty figures only become more believable.

This all means that knowing exactly how brands, marketers, and advertisers can make their messages salient enough to cut through the noise has never been more important. But how do we know whether the metrics that have traditionally been used to determine ad performance are reliable today? Do changes in consumer habits and technological progress make a good case for the introduction of new ones? And if so, what should these be?

This is where the idea of measuring attention comes in. In this guide, we examine the reasons for the shift in focus to measuring attention over the past few years, together with the various ways in which this is measured and what recent studies have shown. We conclude by looking at what the future may hold for the attention economy.

2.

What is the attention economy?

In order to define the attention economy, we must first understand attention. Cambridge Dictionary defines this as "the act of directing the mind to listen, see, or understand [or] notice."[4] Britannica states that it's "the concentration of awareness on some phenomenon to the exclusion of other stimuli."[5]

The attention economy is built on the idea that attention is a scarce resource. Economist Herbert A. Simon, who coined the term in the 1970s, pointed out that "in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes."[6]

Many of our online experiences have either been designed to retain our attention or have evolved over time to achieve the same aim. Perhaps the most obvious of these is the never-ending social media feed, which augments posts from our connections with suggested articles, images, and ads based on information we may have in some way volunteered. Similarly, the music we are listening to finishes streaming and something similar follows automatically. It helps to keep the experience fresh, but the real purpose, of course, is to keep us engaged.

The ultimate goal for marketers and advertisers is the same – to attract and hold someone's attention. Without this, marketing activity can have no real impact. Therefore, for the full potential of any campaign to be realized, knowing what makes a difference here is vital.

Why are we talking about this now?

The concept of the attention economy predates the internet, at least the internet in its current form. But a number of factors have combined to make it particularly relevant today.

The most obvious is the amount of information available to us today, and the ever-increasing ways in which it travels to us. The news, for example, used to reach us through a handful of newspapers, magazines, television stations, and the radio, and through conversations with others. Today, however, on top of the above, we have an exhaustive range of online news sites, digital television channels, and radio stations, together with 24-hour rolling news that's now the norm in many corporate and public spaces. With social media, RSS feeds, and mobile alerts, we needn't even make an effort to reach for one of these services to know what is going on in the world.

Much of this also applies to music, film, and other things that compete for our attention, and these things are monetized by either a subscription-based model or through advertising. In the case of the latter, this still appears in many of the same forms as it always has, although today this is joined by many relatively modern forms of advertising, such as pre-, mid-, and post-roll ads within podcasts and online videos; as static ads when a video on a streaming platform is paused; via social media influencers; and within images (in-image advertising).

The new era

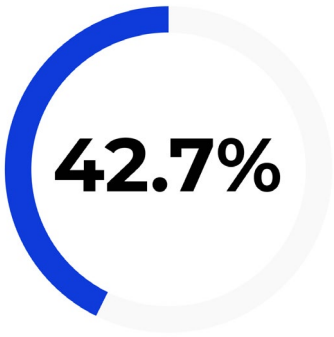
We are in something of a new era of advertising. This has been shaped by the introduction of various privacy regulations, together with technological advancements and ad-blocking measures that have come as a response to the abundance of advertising we experience today.

Regulations such as the ePrivacy Directive (UK), GDPR (UK and EU), and CCPA (US) have meant that advertisers will soon no longer be able to rely on third-party tracking cookies for audience targeting, which has led to a greater focus on cookie-free, privacy-compliant options. For these options to be embraced by the industry, their efficacy needs to be understood, which partly explains the current scrutiny of existing metrics, and the question of whether these ought to be considered alongside newer ones – such as those concerning attention measurement.

The current state of the global economy, which is still adjusting to the effects of the COVID-19 pandemic and Russia's invasion of Ukraine among other things, has also had a considerable effect on business models. For instance, the recent announcement by streaming giant Netflix that it was to introduce an ad-supported subscription plan at a lower price point than existing options[7] was notable considering the company's historic resistance to having an ad-supported product. If nothing else, such a move underlines just the value of advertising when the appeal of a paid-for subscription model wanes.

Attempts to serve the interests of both advertisers and consumers has also led to a tug of war of sorts between the two, and this has given rise to the proliferation of ad-blocking technology. Not only is this now routinely used by many online users, but it's even included as standard with certain web browsers, such as Brave and Opera. While ad-blocker use varies considerably between countries,[8] it has been claimed that 42.7% of internet users between the ages of 16-64 use some sort of ad blocking technology, with the most common reason for doing so being the number of ads and their annoyance or irrelevance.[9] A number of publishers are now responding to this by requesting that users disable this when they notice this being used.

Many online users will have noticed several ways in which advertising today has become more prominent within the platforms they use on a



Percentage of worldwide internet users between the ages of 16-64 who use ad blocking technology.

daily basis. Needing to wait a certain length of time before being able to skip or close an advert, for example, is something most people are used to, but advertisers are increasingly looking at ways to push this to their advantage. YouTube, for example, used to display a single pre-roll advert before monetized videos, but in 2017 it began to remove one mid-roll ad – that is, one that would have been played during the video – and opt for an additional pre-roll ad to make two.[10] In 2020, it began to show pre-roll ads for videos that had not been monetized by their owners.[11]

Other companies, meanwhile, use information provided by browsers to understand when ads are actually being viewed and pause them when the viewer's attention is elsewhere. UK streaming service All 4, for example, pauses adverts that play before and during streamed shows whenever it notices the user has a different tab active, and only resumes them once they reopen the tab.

Whether a user is likely to be receptive to ads they have been forced to watch, rather than those that may be more relevant and that they have some agency in minimizing, is the obvious question that needs to be asked when more intrusive ways of displaying advertising are employed. The prevalence of ad-blocking technology explains why some are resorting to more aggressive moves, although the result of all this is a system in which neither the consumer nor the advertiser appear to be satisfied.

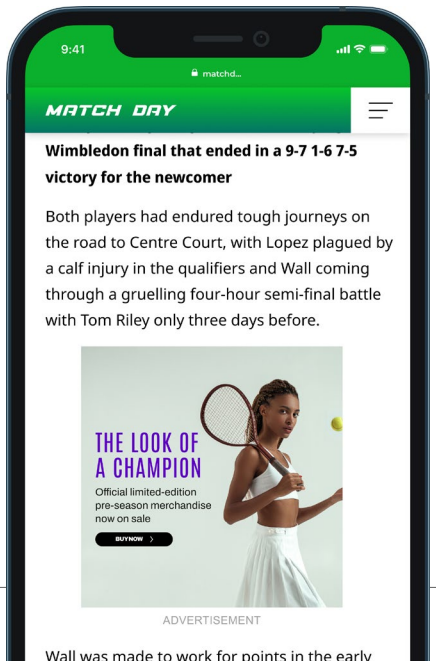
Mobile matters

Another reason that attention warrants discussion today is the use of mobile devices for an increasingly broad range of online activities – and the way in which responsive design adapts content to suit the display and its orientation.

The goal of responsive design is to ensure that the user experience is not compromised between different devices, although we don't necessarily expect the experience to be the same across them. One reason for this is display size; a desktop site may be littered with advertising around the body of the page, and this may be easily ignored if the viewer is focused on the content itself, but we don't expect to see the same number or style of ads on a mobile-optimized site as we do on a desktop version. Not only is there not enough space, but ads are unlikely to be legible when presented in the same way across the two.

Another reason for the different user experience concerns the way in which webpages, emails, and social media feeds are browsed on each type of device. The smaller display area of mobile devices necessitates more scrolling through content, which makes advertisements easy to scroll past (or simply miss), even if they are sized to occupy a significant proportion of the display. Conversely, the larger display of desktop devices means that the user is likely to be viewing the same page for a longer period of time, although if the ad only occupies so much of the page, it too could be missed. This also highlights the single biggest issue with viewability, in that an ad known to be viewable may not have actually been viewed.

This is why serving certain types of ads on one type of device is more practical than on the other. A pop-up ad on a desktop site, for example, may not necessarily occupy much of the display, so it may not interfere too greatly with content (and may be quickly and easily closed by the user if desired). On a mobile device, however, this kind of ad is likely to dominate the screen, partly so that it can be seen and partly to make its closure practical. So while it may succeed in getting the user's attention, the more intrusive nature of this ad display can frustrate the user and cause them to navigate away from the site, and potentially have a detrimental effect on the impression of the brand being advertised.



3.

How is attention measured?

Understanding the importance of attention paid to online ads is one thing. But knowing how it ought to be measured, and what to do with this information for it to have any value, is another.

Herbert A. Simon proposed 'attention units' as a metric, which he defined as "the amount of time an average business executive spends focused on something."[12] This sounds entirely sensible, although it does require clarity over exactly constitutes 'focus'.

Some methods that have been used in the past include questionnaires, head-movement tracking, skin conductance, EEG scans, and MRI scans.[13] Thanks to a combination of efficacy, accuracy, and practicality, however, most recent studies have made use of eye-tracking to determine the extent to which a user is paying attention to something they are shown.

Eye-tracking has been used for a broad range of applications, from packaging design[14] and product placement in retail environments[15] to usability and user experience testing for websites.[16] Its use across many areas explains the wide range of tools that have been developed to measure this, from screen-based trackers that sit alongside a computer and record eye-tracking details to cameras inside mobile phones and even special pairs of glasses.

What's actually being measured?

For digital advertising, the logic is that if it's possible to measure how long a user is looking directly at an ad they are shown, it can be concluded whether some kinds of advertising are more effective at gaining – and keeping – attention than others. But many current eye-tracking measurement systems go beyond simply noticing the extent to which someone looked at an advertisement.

The movement of the eyes itself, for example, can be broken down into gaze points,[17] which shows where the viewer is looking, as well as fixations, which are defined as a cluster of gazes in a single location.[18] This can then be used to determine additional metrics, such as the time it took an observer to notice a particular area, the extent to which they revisited it, and the order in which they looked at different areas or elements.

Combining this information with other variables can provide a better idea of what specifically makes a difference. While eye tracking alone can explain what's attracting attention, in real-world environments, the size of the ad, its position on the page, its viewability, additional elements served alongside that are also competing for attention, and device orientation can all determine whether an ad is noticed.

A growing number of companies are currently involved in this space, and many have now augmented basic eye tracking with some of the above. Additional tools, such as AI technologies designed to measure emotional response through facial coding, are also being used by some providers.[19, 20, 21]

Because of this variation in measurement across different companies – and as this is all still in an early, experimental stage – we shouldn't be surprised by the emergence of a number of proprietary metrics relating to attention. These include the IAB's attention per thousand impressions,[22] which is calculated as the percentage of people looking at ads multiplied by the average time spent looking at ads multiplied by 1,000, as well as Attention Units (AU) from US company Adelaide, which shows the potential for an ad to deliver an attentive impression.[23]

With no consensus on a universal standard as of yet, it may be that some systems end up proving to be more useful and accurate than others, meaning that others are abandoned. In the short term, however, the obvious drawback to this is that comparisons between providers and the results of different studies become difficult.

How does this differ from existing metrics?

The most significant difference between established performance metrics – clicks, viewable impressions, click-through rate, and so on – and attention concerns the way in which these are measured.

The former group can be easily recorded in real-world conditions. Clicks are the most basic of these, and as long as it is known how long a certain percentage of an ad has been in view on a display, a viewable impression can also be determined. Click-through rate, meanwhile, is calculated simply by dividing clicks by impressions.

But measuring attention is more convoluted. Eye-tracking, of course, requires a camera to notice and record eye movement, and to correlate this with ads being displayed to understand what is getting attention. Furthermore, as many studies are carried out in controlled conditions, this data will typically be used to predict how well an advertisement is likely to perform when shown in a real-world environment, as opposed to showing the performance of real, live ads, as existing metrics do. The missing link, therefore, is an understanding of what kind of effect attention has on the KPIs that ultimately matter the most.

Does it address issues associated with existing performance metrics?

The shortcomings of metrics that have traditionally been used to determine ad performance can explain some of the shift in focus toward measuring attention.

Viewable impressions is one example. Current MRC guidelines state that an ad impression is deemed viewable when at least 50% of the ad unit's pixels are in view for at least a second[24] (and for video, as of 2019, the ad must be 100% in view for 2 seconds or more).[25] This is useful to a degree, but it fails to provide any indication of what the user was doing at that moment, or how much of the ad they noticed. Similarly, IAB UK has stated that click-through rates are "a misleading metric for success" that can "encourage excessive focus on the short-term".[26] The organization even has an annual Anti-Click-Through Day to discourage the use of click-through rates as a way of measuring performance.[27]

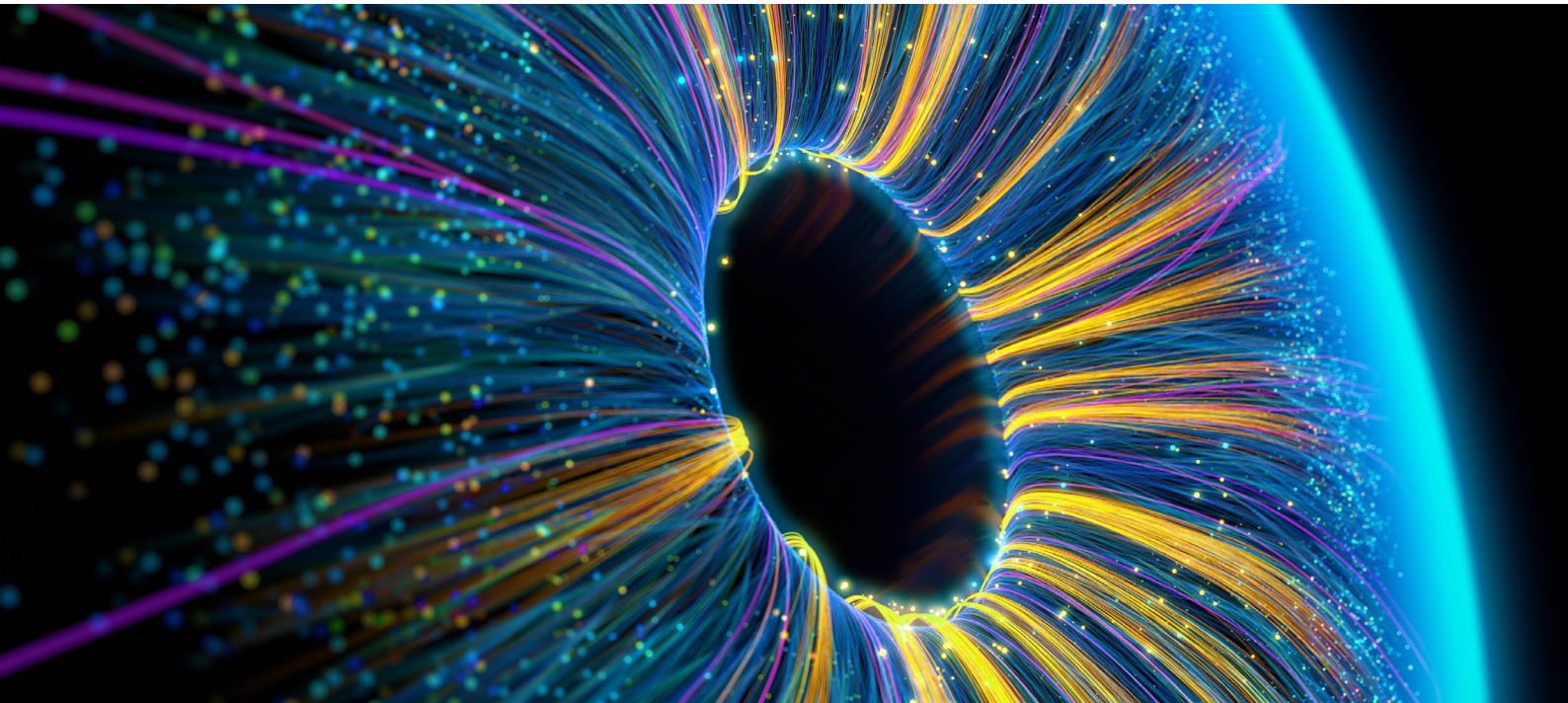
Longstanding concerns over how easily such metrics can be gamed have also been behind efforts to look at alternatives. The practice of using bots, or even people, to engage in click fraud is widely known, as is using the former to visit a website to make it appear as though a human has landed on the page (in turn, inflating viewability figures). Particularly aggressive advertising methods, such as programming an ad to follow a user around a page as they scroll, can also give a skewed impression of viewability – especially if the end result is annoyance on the part of the website visitor.

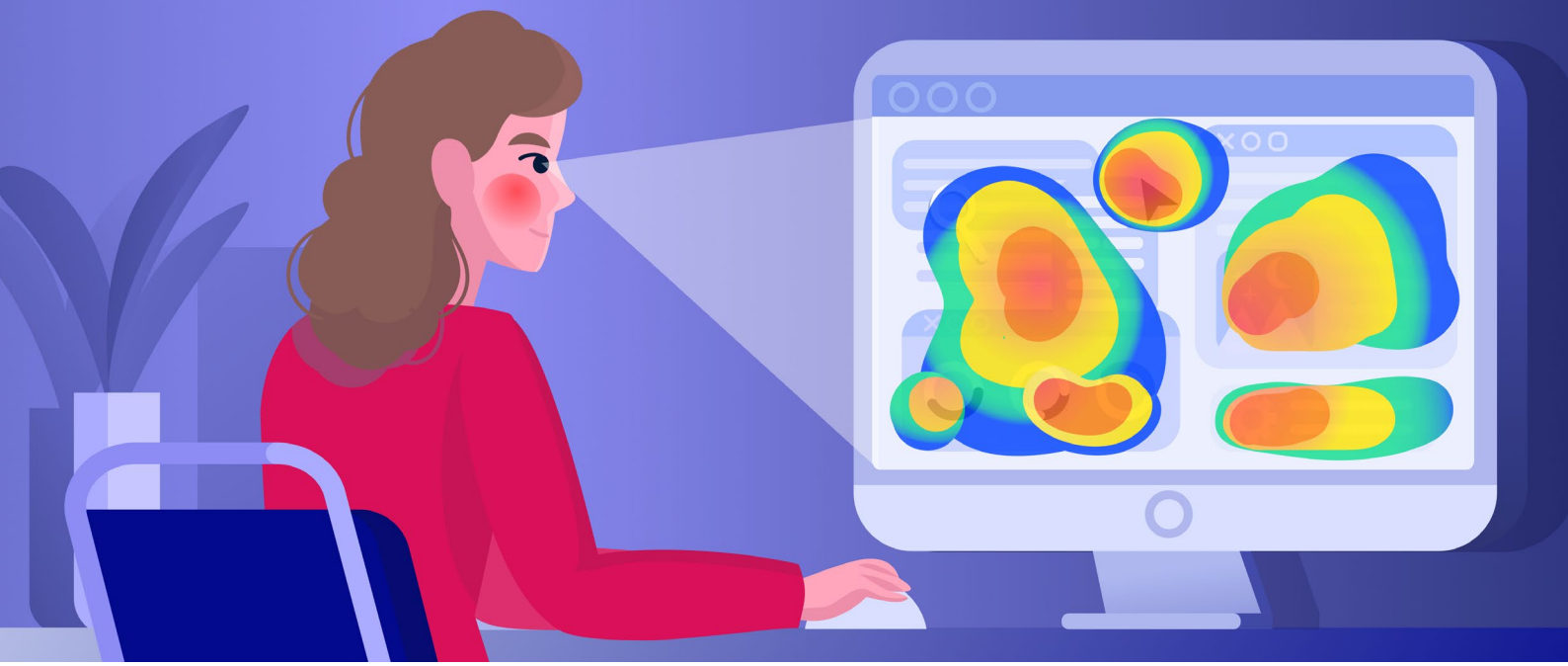
It's easy to appreciate that these issues are unlikely to be the same concerns that one might have with measuring attention. Arguably more of a focus here would be the ease with which results from different studies could be compared, and the possibility that less rigorous setups may result in distorted findings. On top of this, measuring attention brings many of its own challenges that need to be addressed.

What are the challenges?

Metrics that rely on eye-tracking present a different set of challenges to more conventional ones. For example, while attention may be easy to monitor and record in controlled conditions, quite how accurately these results would be reflected in real-world environments is another matter. If, for example, one was to use the front-facing cameras inside a computer or mobile phone to do this, variations between the technical capabilities of these camera devices and ambient lighting conditions among other things would likely affect the ease and consistency of measurement.

In such a scenario, a user would also need to grant a researcher access to this camera. Studies carried out to date have tended to make use of user-downloadable software and apps and





hardware designed specifically for the purpose, which means a user would be conscious their behavior was being monitored (which, in turn, could affect behavior itself). But when it comes to real ads displayed in real environments, heightened consciousness over privacy and tighter regulations around personally identifiable information make access less straightforward. These issues, it could be argued, make the concept of a hybrid metric that blends lab-based findings around attention with data from ads displayed in real-world environments more attractive.

Another concern is just how accurately such systems can measure whether someone is actually looking at an ad or just in its general area, and whether all variables that can affect performance in a real-world environment will have been accounted for. An ad may show a good level of engagement or attention in controlled conditions, but when placement on pages, competing ads, creative decisions, geolocations in which ads are displayed, and all other variables are factored in, the results might vary.

It's quite possible that some kind of technology that is fed data on how well an ad is likely to perform (based on the results of measuring attention in controlled conditions) may be used to monitor how and where an ad is being displayed in a real-world environment, and make adjustments accordingly to help boost its performance (such as by adjusting creatives). While we're still in the early stages of such developments, if we assume such systems can be effective while relying solely on non-personally identifiable information, it's conceivable they could end up being widely used.

What have studies shown so far?

While the measurement of attention may be a useful way to plug some of the gaps left behind by traditional metrics, for it to be of any use to marketers and advertisers, the relationship between attention and tangible KPIs – sales, ROI and so on – needs to be understood. So what do studies carried out so far tell us?

A number of studies have indeed found a correlation between attention and brand recall, as well as between attention and sales. One study, carried out by the Dentsu Aegis Network, found a correlation between dwell time and brand uplift, concluded that the longer an ad was viewed, the greater the impact on brand choice.[28]

A similar correlation was found between dwell time and ad recall, although one interesting point highlighted in the research was that a "significant number of respondents correctly recalled the target brand even if there was no associated eye-tracking data." The authors of the study believed this to be the result of guessing and identification through peripheral vision.[29]

Perhaps as we would expect, the same research found that an ad's viewability was not necessarily consistent with whether it was actually viewed.

Interestingly, while the research found that in some cases, ads that are technically viewable did not get noticed, it also highlighted that in other cases, more ads were viewed than were technically viewable, a quirk that was attributed to the "arbitrary nature of viewability standards."[30]

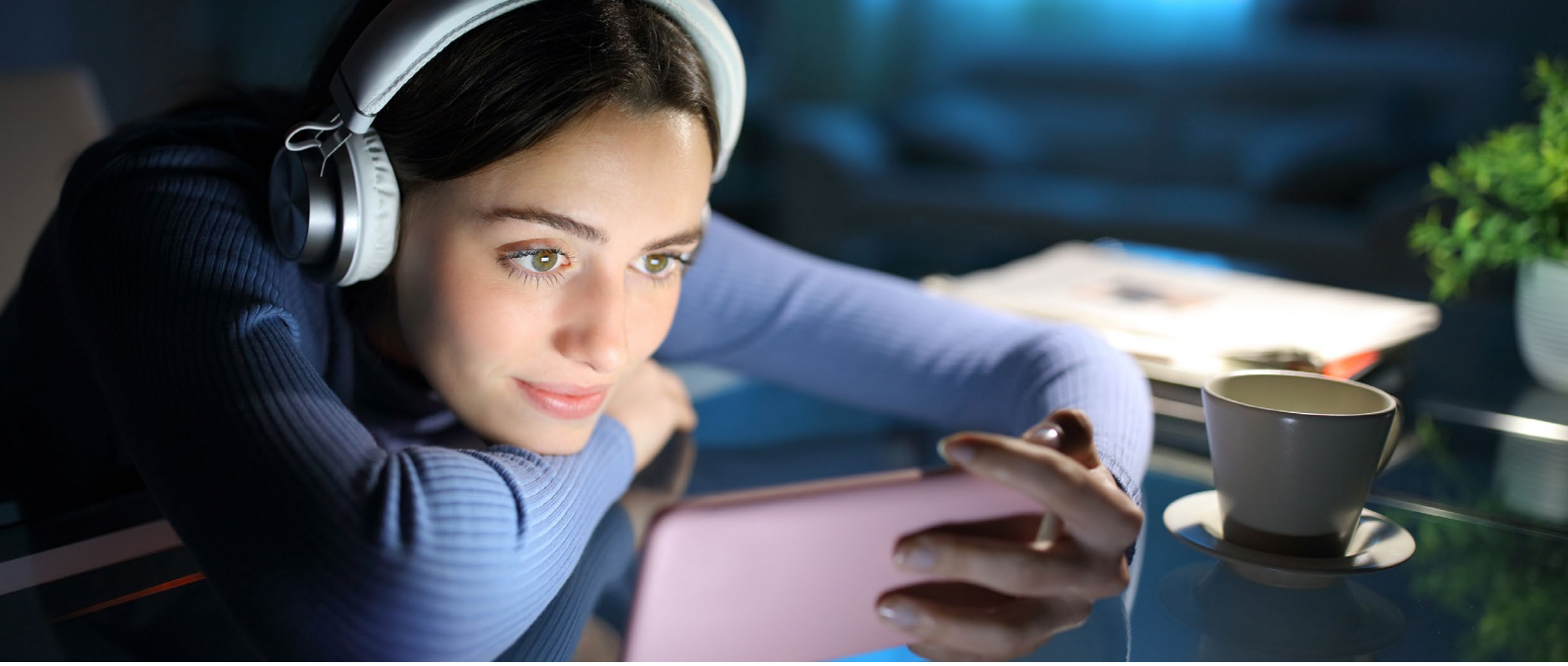
While many such studies have confirmed widely held views around effectiveness, a number have also highlighted surprising, or less appreciated, factors with respect to what makes a difference and the degree to which it has an impact.

A study carried out by IAB UK in 2019 is one example. The aim of the study was to understand key factors in ads gaining attention, from ad position and clutter to targeting and other things. So what were the findings? As expected, ads were indeed shown to attract more attention when served in more prominent positions, with less clutter, and when they were better targeted toward their audience.[31] But the study also discovered a marked difference in attention when an ad was served in different environments. Online ads served in so-called 'task' environments – such as a train ticket booking site, a weather service, and a property site – fared considerably worse than when served in 'content' environments, whose examples include the likes of Reddit, Mashable, and BoredPanda. Ads placed inside 'premium content' sites, meanwhile, a category that largely comprised IPSO-regulated newspapers and magazines, were shown to attract the most attention overall.[32] Interestingly, this insight also appeared to help counter suboptimal placement; the study noted that "ads below the fold can generate high levels of attention when interest in the content is high".[33]

A further finding of the IAB UK study, that ads optimized for, and shown on, mobile devices performed better than non-optimized ads served in the same environment, was expected. But the degree to which this made a difference to attention was a surprising 89%.[34]

Some of these findings echoed those from a previous study, which was carried out by Lumen on behalf of British Gas. It found that viewable impressions on newsbrand sites were not only more likely to be seen than on other sites, but that dwell times here were also longer.[35]

The shift in focus from third-party-cookie-based tracking to contextual targeting makes this factor particularly important today; while much is made of ads appearing in relevant environments,



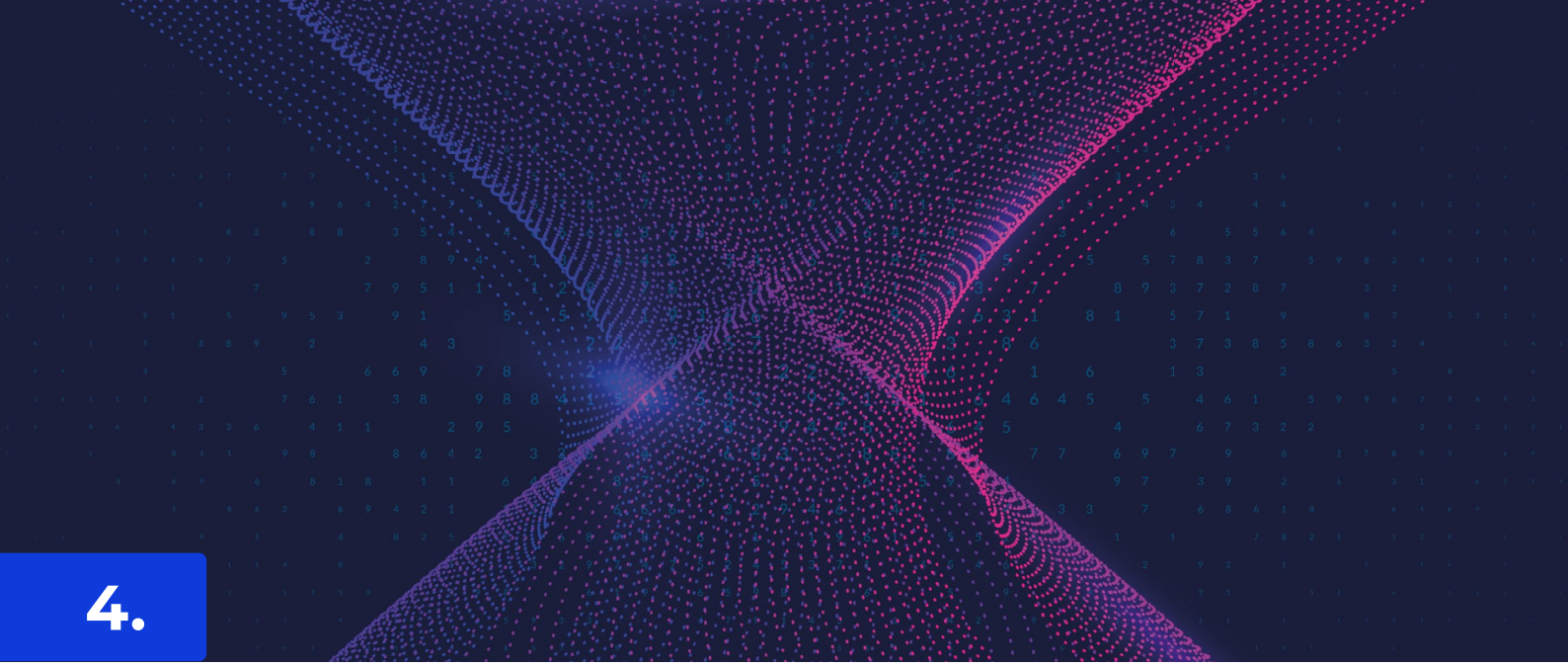
less is heard about the impact that the nature and quality of these environments have on ad performance. If we consider that those visiting task websites have a specific goal, and those visiting content environments have less defined intentions, these results perhaps shouldn't be too surprising. But at the very least, they should encourage marketers and brands to consider that even if two sites have the same kind of traffic and are interacted with in a similar way, their different nature may have a profound effect on how readily their ads are seen and recalled.

Is all attention equal?

Whether we see 5,000 or 10,000 ads per day, it's almost certain that very few of these will have our complete attention. Many of them will have not been seen at all, while some may be registered in some way, without us being able to state that we had paid attention to them to any meaningful extent. But for the marketer, is even just a modicum of attention better than nothing?

The previously mentioned Dentsu study gives us some idea. The eye-tracking technology used in this study was said to have recorded the participants' gaze in three different states: on the ad, on the screen but not on the ad, and off the screen completely. Interestingly, the research found that "ads that received full gaze only increased sales slightly more than ads viewed peripherally," peripherally being defined as 'eyes on screen but not on ad' on mobile devices, and 'person in the room but not looking directly at the set' in TV ads. It concludes that the bigger win for marketers over looking or walking away from an ad is to reduce full avoidance.[36]

Another factor that can skew attention and brand recall is audio – specifically, whether video ads are watched with or without their audio. In 2017, Google examined data from over 1,000 YouTube video ads and found that ad recall was 1.4x higher among those who had seen and heard a video ad versus those who had only seen the video ad without sound, and 2.7x higher among those who had been exposed to both audio and visuals over those who had only heard the ad.[37] The differences were even starker where brand awareness was concerned. Here, those exposed to ads with both audio and visuals showed a 3.8x increase in brand awareness over those who had only listened to them, and a 1.6x increase in brand awareness over those who had watched ads without audio.[38]



4.

Looking forward

The measurement of attention is not a new concept. But as it gains importance among marketers and brands, the ways in which it will be measured, understood, and implemented should evolve, and our understanding of what KPIs we should be focusing on should adjust accordingly.

This in turn should help to answer some existing questions with respect to the efficacy of different formats, the value to brands of opting for one over the other, and also how this all works within a contextually targeted setup, where the audience is more likely to be in a receptive frame of mind to such advertising.

As in so many areas where it's employed, the use of AI technology in eye-tracking technologies – and attention measurement in general – will mature and play a growing role in these kinds of systems too. Questions on the ethics of its use will no doubt persist, and will make the working of these systems harder to understand. But assuming they can be used responsibly and show a benefit, it seems very likely that more ad tech providers will come to rely on AI to some degree.

So what happens now? Perhaps the arrival of a raft of new attention metrics will further confuse people as to which they should focus on and which they should ignore? Future studies – and exactly what they are designed to examine – will have plenty of influence here. While existing studies appear to confirm the importance of certain much-discussed variables – placement, device optimization, and so on – some of their more surprising findings highlight the need for further investigation if we're to fully understand what makes a difference to capturing attention and holding it for long enough to make a difference to the metrics that matter the most.

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SMARTFRAME

About us

Founded in 2015, SmartFrame Technologies is a London-based software provider that's redefining the digital image standard. Its SmartFrame platform allows content owners and brands to protect their assets and present them in the best possible way, while also allowing publishers to source and embed high-quality images, and for everyone involved to generate new revenue streams by way of in-image advertising.

Contact us

To find out more about contextual targeting, get in touch with us today.

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