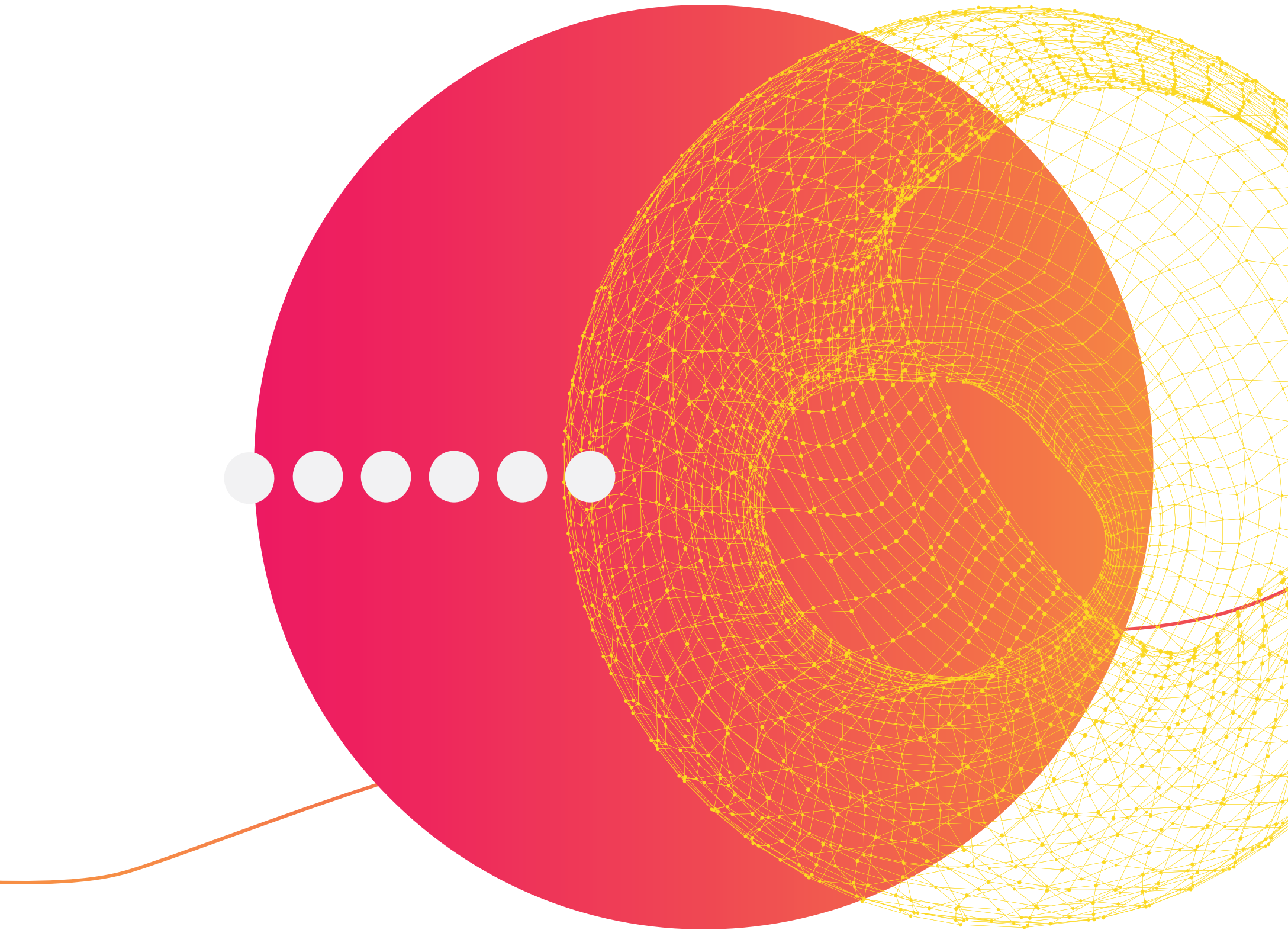
PLAYGROUND XYZ | AIP



Optimal Attention

Exploring the relationship between brand outcomes and Attention Time

Introduction

In the landscape of media and marketing the measurement of visual attention has a long history, due to the recognition that consumers need to pay attention to advertising for it to have an effect. Advances in eye tracking technology have permitted the rapid growth of an attention measurement ecosystem, but advertisers are still looking to understand how much attention is required to achieve a given outcome. To date, studies in this area have emphasised the impacts of media platforms, looking to provide guidance to media planners about where they can find scarce attention.

However, we have long observed that the advertising creative assets play a leading role in garnering consumer attention, and hence expected it to also exert a strong influence on campaign outcomes. This paper outlines research conducted by Playground xyz over the past 24 months to understand how different brands, and thus their unique objectives, require a more bespoke approach to their attention journey. This perspective suggests that not all brands require the same level of attention to achieve their desired outcomes and meet key performance indicators (KPIs). Our analysis assesses the behavioural data of approximately 20,000 participants, relating to 35 brands, and is further supported by an additional neuroscience study which consisted of over 150 lab sessions and 1,800 advertisements. Through this comprehensive examination, the aim of this whitepaper is to substantiate the notion that Optimal Attention, rather than maximal attention, is the key to unlocking the full potential of brand outcomes.

Our analysis assesses the behavioural data of approximately 20,000 participants, relating to 35 brands, and is further supported by an additional neuroscience study which consisted of over 150 lab sessions and 1,800 advertisements.

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Summary

This study investigates the role of visual attention in delivering brand outcomes with digital advertising. We use attention measurement on exposures to advertising, followed by a brand lift survey to understand how the amount of attention given to an advertising creative asset relates to lift in these brand metrics. **This study uses our core metric Attention Time; the length of time, in seconds, an ad is looked at, and introduces the concept of "Optimal Attention," which we define as the minimum threshold of Attention Time required on a given creative to drive an observable lift in the target metric.**

Key Findings

Attention Time exerts a strong influence over upper funnel outcomes, and lift is possible early in the viewing of an advertisement

Consumers who watch more of an ad (i.e. higher Attention Time), generally exhibit higher levels of awareness and recall for the ad. Duration based metrics of attention provide brands with a clear insight into how likely the consumer is to have remembered the contents of an advertisement. Increases in the majority of outcomes occur rapidly, with most outcomes seeing lift prior to 10% of the ad having been watched. This finding implies that brands should create content that clearly presents the brand early in the ad.

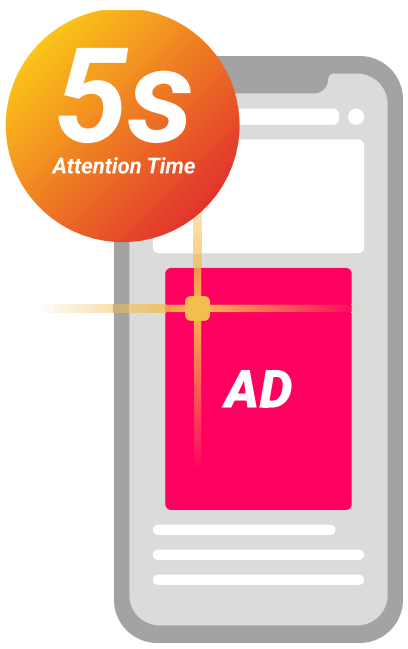
Optimal Attention is different for each brand outcome

The impact of an ad depends on cognitive processing and brand metrics measure outcomes with different levels of processing requirements. Whilst attention plays an integral role in moving consumers towards a purchase, the different stages of the funnel are not equal in their demands. Brands must acknowledge that the attention required to drive upper funnel metrics will generally differ from that which is required to drive lower funnel metrics. Brands should also not expect to achieve the same level of lift across each outcome.

Different brands and creatives require different attention for the same outcome

The creative plays a central role in delivering outcomes. It can leverage the strength of the brand's distinctive assets and depends on the market position and baseline for the brand outcome. These factors, combined with media platform and media context combine to support the creative, but ultimately the creative is the vessel that delivers the message and the way attention is paid to that specific creative is what determines lift. Whilst the platform in which an ad is placed determines the manner in which consumers engage with an ad (i.e. the Attention Time) and some upper and lower bounds of Attention Time received, it is the creative that is the main driver of outcomes. Brands should be aware that their ability to drive changes in consumer behaviour is directly related to how well their creative delivers their message.

Methodology



In this work we explore the correlation between Attention Time and a variety of brand outcomes across the purchase funnel. We use data from more than 20,000 participants gathered from forced exposure to ads for 35 global brands.

Participants were recruited via an external recruiter and incentivised for their participation. Once vetted, suitable participants were provided a link to the study. The link redirected participants to one of four social media environments (Instagram, Facebook, TikTok, & YouTube), where they were presented with content and video advertisements. Each participant was only presented with a single social media platform, and asked to use the platform as they usually would for a 3-5 minute period.

During the task, participants were presented with a single ad, belonging to a single brand. Throughout the task, participants' eyes were tracked, and the **Attention Time (the length of time, in seconds, an advertisement was actually looked at)** toward the ads was calculated.

In total, 55 video ads belonging to a variety of brands were selected for the present research. Each of the ads were presented to participants as a part of this study. Ads were of a standard format accepted within either Facebook, Instagram, TikTok or YouTube. Specifically, whilst both the dimensions and duration of the ads varied, those placed in Facebook and Instagram, were either feed videos or stories videos. Within TikTok, all ads were standard videos, whilst those placed within YouTube were either pre-roll skippable or pre-roll non-skippable. Following exposure to the ads throughout the session, participants were required to complete a short survey where they are asked questions about their session. Specifically, participants were asked questions relating to brand awareness, brand/ad recall, consideration, and purchase intent.

Attention Time Drives the Purchase Funnel

In our initial analysis we assessed whether a relationship existed between Attention Time and brand outcomes across the purchase funnel. To explore this question, we assessed whether greater attention on an ad resulted in higher levels of awareness, recall, consideration, and purchase intent.

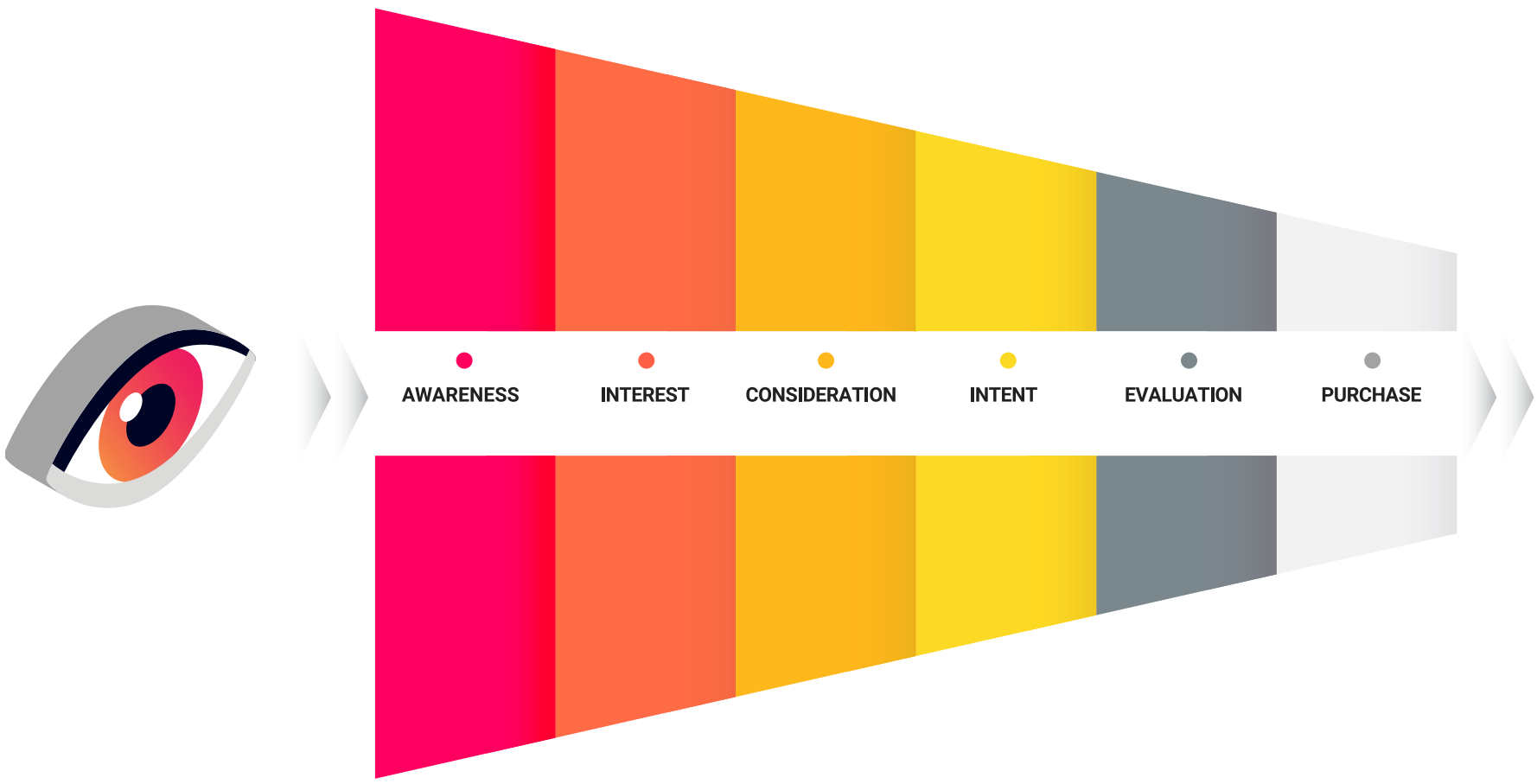


Table 1 shows the relationship between the proportion of the ad that was watched, and the percentage of participants who responded positively. The results clearly demonstrate that, for upper funnel metrics, consuming more of an ad results in a greater proportion of participants being aware of, or recalling, the brand or product.

On average, when more than > 50% of an ad is watched, the positive response rate for upper funnel metrics including awareness, recall, and consideration saw an increase of 30% above that achieved at baseline.

To explore this question, we assessed whether greater attention on an ad resulted in higher levels of awareness, recall, consideration, and purchase intent. The data suggests, with regards to upper funnel outcomes, that attention is likely the primary driver of increases. In contrast however, the data in Table 1 shows that although attention is an indicator of increasing purchase intent, it may not be the largest contributing factor influencing a customer's decision.

		Outcomes					
		AIDED AWARENESS	OFFER AWARENESS	AD AIDED RECALL	AD PROMPTED RECALL	CONSIDERATION (TOP 3)	PURCHASE INTENT (>70%)
Proportion of Ad with Attention	<10%	0%	0%	0%	0%	0%	0%
	10-20%	4%	4%	4%	8%	1%	2%
	20-30%	5%	10%	10%	23%	-2%	-1%
	30-40%	16%	29%	27%	34%	13%	15%
	40-50%	11%	29%	26%	31%	18%	9%
	50-60%	12%	32%	32%	36%	15%	11%
	60-70%	24%	29%	40%	16%	30%	7%
	70-80%	24%	46%	49%	21%	39%	21%
	80-90%	24%	47%	39%	37%	40%	5%
	90-100%	19%	48%	46%	25%	41%	-6%

Table 1. Proportion of affirmative responses for each metric - awareness, recall, consideration, and purchase intent for each 10% proportion of ad watched.

Brands must be aware that when making purchases, consumers rely on previous exposure (i.e. attention), but they also rely on additional factors inclusive of, but not limited to price, motivation, quality, needs, attitude, and reputation. Subsequent research will see additional resources allocated to better understanding the relationship between Attention Time and purchase intent.

Different Outcomes Require Different Optimal Attention Thresholds

As attention increases, so too do outcomes. However, effective media planning requires knowing how varying levels of Attention Time relate to specific brand outcomes. According to Sharp (2013), different outcomes are driven by different mental processes. The table presented in the previous section supports this idea. A campaign may exert a stronger influence on some mental processes, like basic awareness, compared to others, such as prompted recall. So while a creative may be capable of driving increases in multiple metrics, its effects may not translate across all outcomes equally.

To analyse how attention relates to outcomes we define **Optimal Attention as the threshold of attention required to see a lift in a brand outcome.** For each creative, participants were grouped according to how long, in seconds, they attended to the ad. Participants who gave zero seconds of attention (i.e. did not look at the ad) were assigned to a control group, the rest of the subjects were allocated to groups defined by the mean attention of all members. We apply a range of smoothing processes to determine the curve that relates attention to outcomes. This curve is then used to extract the **Optimal Attention for each brand metric**.

Figure 1 shows the median Optimal Attention threshold and the median lift for each brand outcome. The data supports the notion that different levels of attention yield different opportunities for brands. In the case of **brand awareness, 1.4 > seconds proves sufficient to drive a significant, 10%, lift in brand awareness**. Achieving deeper engagement, measured by metrics like prompted recall (remembering specific details about the ad) and consideration (placing your brand in the top choices), **necessitates a longer attention span, averaging around 3.9 and 1.6 seconds respectively.** These metrics also yield variations in the lift (20.6% and 6%), highlighting the trade-off between attention investment and desired outcome.

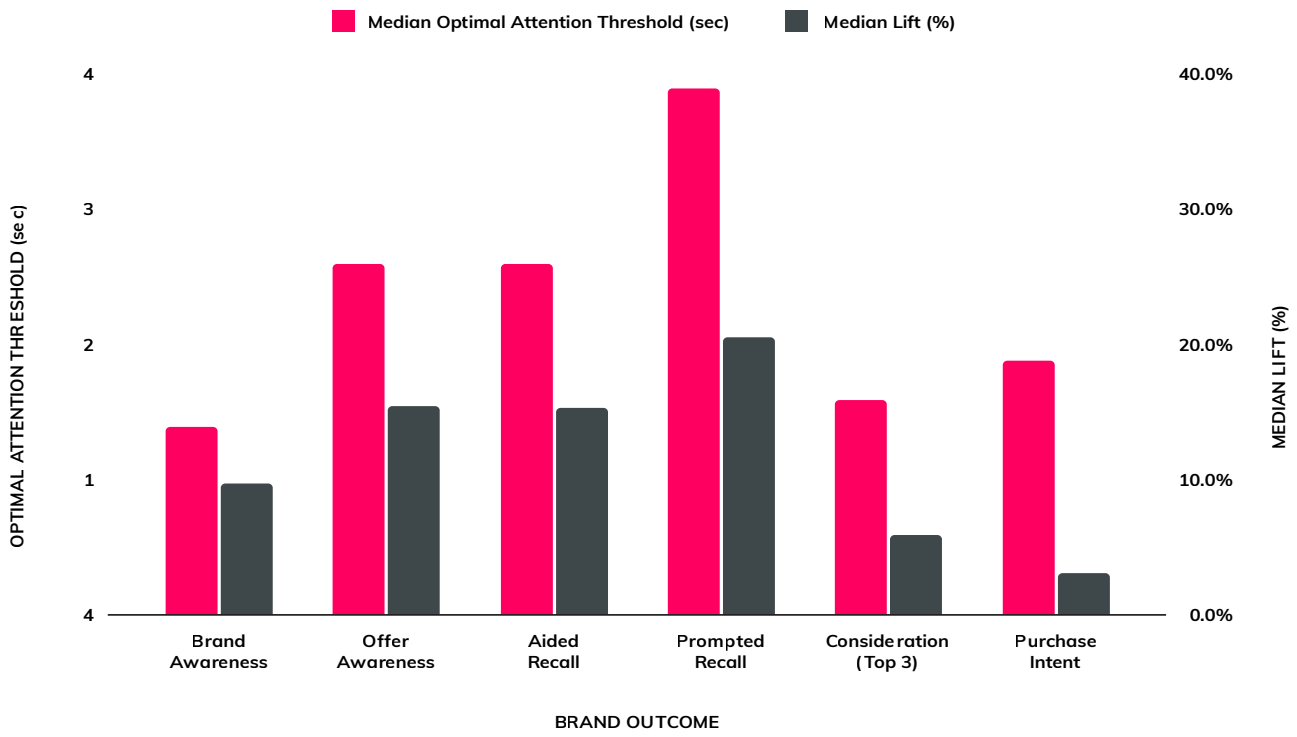


Figure 1. Figure depicting the median Optimal Attention threshold (in seconds) and the median lift achieved for each of the individual brand outcomes.

Creative - The Biggest Impact on Outcomes

Brands are increasingly pressured to achieve increased advertising performance under budget constraints, which has led them towards metric-driven media selection strategies. The success of these strategies relies on careful consideration being given to the environment in which the ad is placed, and the content of the ad itself. The previous sections established two key insights; Firstly, Attention Time positively correlates with different stages of the purchase funnel, and secondly, that different funnel stages necessitate varied Attention Times.

While these findings offer brands directional guidance on how strategies related to Attention Time should be implemented, because they represent average performance across different brands and creatives, they oversimplify the dynamic impact of creativity. The following section aims to move beyond broad generalisations to nuanced perspectives, and provide advertisers with insights into the complexities of attention demands. Specifically, this section looks to emphasise that averages related to Attention Time serve as heuristic tools for guidance rather than concrete frameworks and that attention is highly nuanced and variable, predicated on the interplay between your creative, context, and brand market positioning.

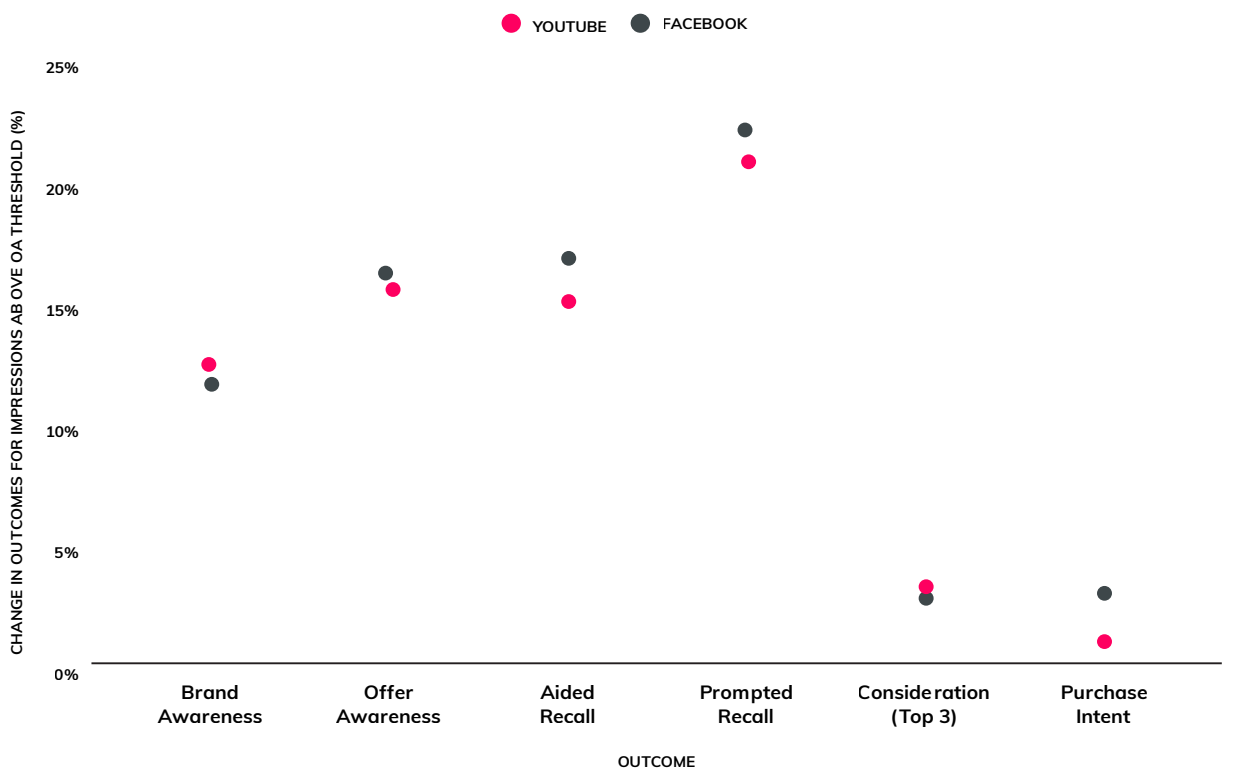


Figure 2. Graph depicting the change in brand outcomes across Facebook and Youtube when the same creative is presented across both platforms.

Figure 2. illustrates the outcomes associated with publishing identical creatives on different platforms when impressions achieve over the Optimal Attention thresholds. The largest differences in performance seen across all metrics was only +/- 2% (prompted recall & purchase intent), **demonstrating that the effects of the platform are small in this case**.

In contrast, an analysis that compared the performance of multiple creatives on a single platform revealed that each yielded different baselines, Optimal Attention thresholds, and outcomes. Figure 3 shows different 15” Skippable ads on YouTube where it **was revealed that in 94% of cases, the Optimal Attention thresholds were significantly different, highlighting the integral role that creative plays in driving outcomes**.

YouTube
15” Skippable Ads

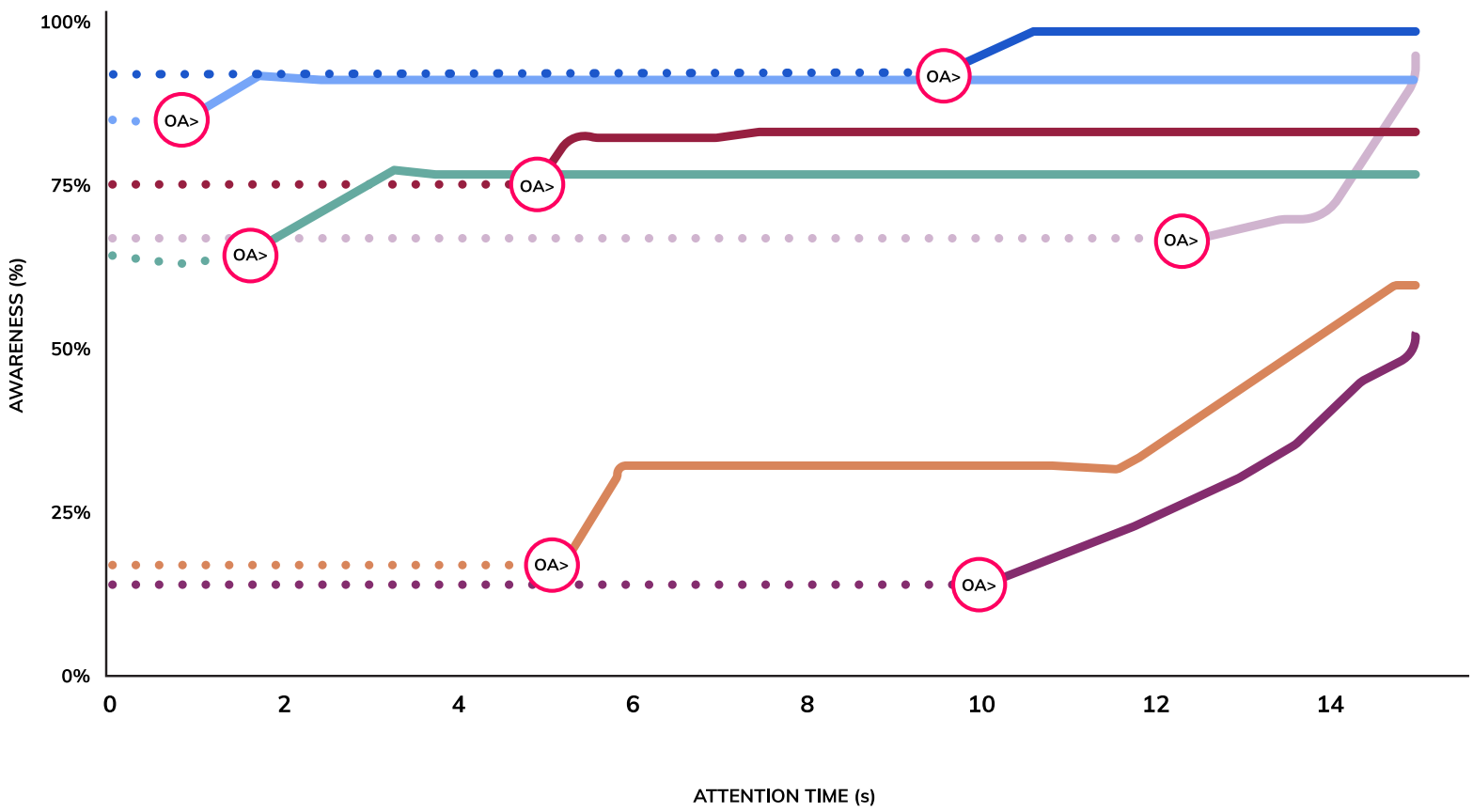


Figure 3. Optimal Attention curves. Each curve represents a different 15 second skippable creative placed on Youtube.
The dotted portion of the line references the baseline awareness for each brand.
The ‘OA’ label references the Optimal Attention threshold - the point at which sustained lift is detected.

In summary, Figure 2, shown previously, reveals that when the **Optimal Attention Threshold is achieved, there is minimal difference in the observed performance of that creative across platforms**. In contrast however, Figure 3. shows that different creatives on the same platform drive very different results, with one creative requiring as little as 1 second of Attention Time, and another requiring more than 12 seconds in order to see sustained uplift. However, it should be noted that the data presented above does not make mention of the proportion of media that achieves over the Optimal Attention threshold on each different platform, nor does it incorporate data relating to the price of the media. It is inherently the case that some platforms and ad formats will drive higher or lower ad retention rates and do so at higher or lower CPMs, both of which will affect outcomes.

Optimal Attention thresholds are largely driven by the creative. Thus, media placements should be chosen based on the cost to meet or exceed the Optimal Attention requirements; some platforms will be more cost efficient at delivering a required 1s of Attention Time and others more cost effective at delivering a required 5s.The key is for brands to understand what is required and plan and buy media accordingly.

Neuroscience Reinforces the Power of the Creative

To deepen our understanding of the interaction between ad creative, platform and outcomes, we leveraged the power of neuroscience research. Throughout this section, we draw upon similarities between attention and brand outcomes (mentioned in the previous section) and neuroscience metrics like engagement and memory encoding. In doing so, we reiterate the unique influence that platform and creative have on campaign performance. Unlike traditional methods, neuroimaging doesn't rely on conscious responses – it measures the brain's activity as consumers encounter advertising. This allowed us to directly gauge consumer's level of engagement towards the brand, product, or message, and memory encoding related to the ad.

Data was collected for approximately 1,800 advertisements across Facebook, Instagram, and TikTok. The average brain activity associated with engagement and memory encoding were generated for each ad. **Engagement or immersion refers to how focused a consumer is with the content to which they are presented, whilst memory encoding refers to the process by which resources are allocated to the storage of information into memory**.

Figure 4. demonstrates how consumers engage with advertising content across each platform. Interestingly, in the same way that the platform influences the Attention Time that consumers spend with an advertisement (i.e. typically referred to as platform elasticity; Amplified Intelligence, 2022), the platform also appears to regulate consumer engagement. **When assessing engagement across each of the 1800 ads,it is clear that there is little variance, and this draws a close parallel to the little variance seen for the recorded Attention Times within each of the platforms**. These findings reiterate the notion that the platform places constraints on how consumers interact with the content. This is unsurprising given the nature of the social media platforms, and the similarity between the content that is presented.

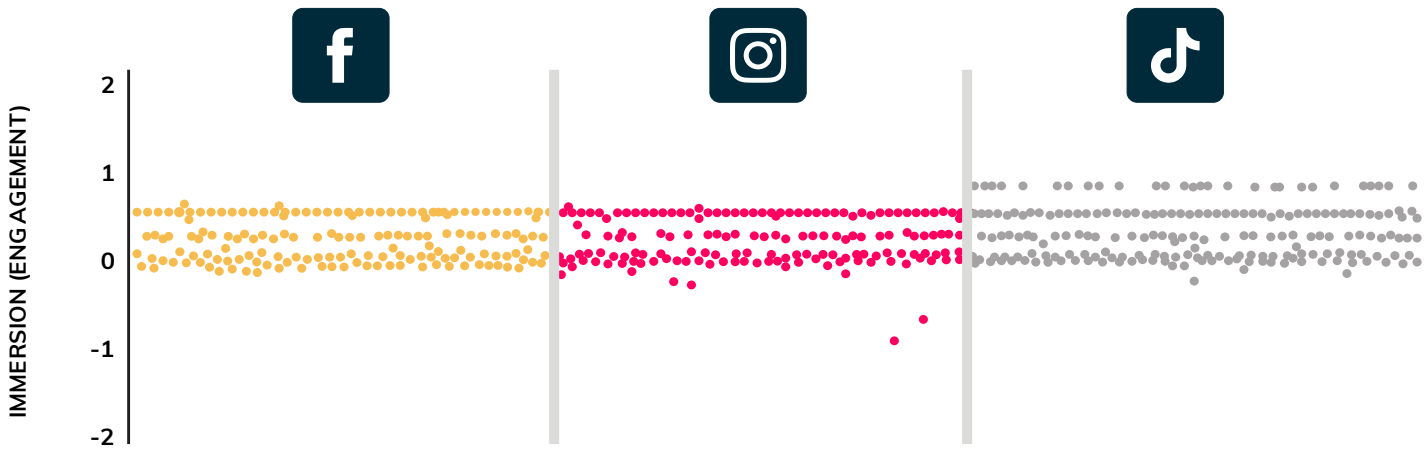


Figure 4. Scatterplot consisting of each of the 1,800 ads seen by participants on Facebook, Instagram, and TikTok, and the average activity related to Engagement/Immersion. The data shows very little variation, indicating these effects are likely driven by the platforms rather than the creative.

However when we investigate the neural activity related to memory encoding we see a different pattern. Existing research has established strong connections between each of these metrics and key marketing goals like brand loyalty, sales, and preference (Kühn et al., 2016; Ravaja et al., 2013; Ramsøy et al., 2018).

Figure 5 shows the average neural activity related to memory encoding for the same 1,800 ads. In a similar manner to reported brand outcomes, it is clear that differences arise as a result of something other than the platform. Despite the ads within each of the platforms being engaged with, in a similar manner, the amount of resources being allocated to remembering each is vastly different. These differences imply that there is a factor that is not consistent between each of the ads and is likely the ad itself.

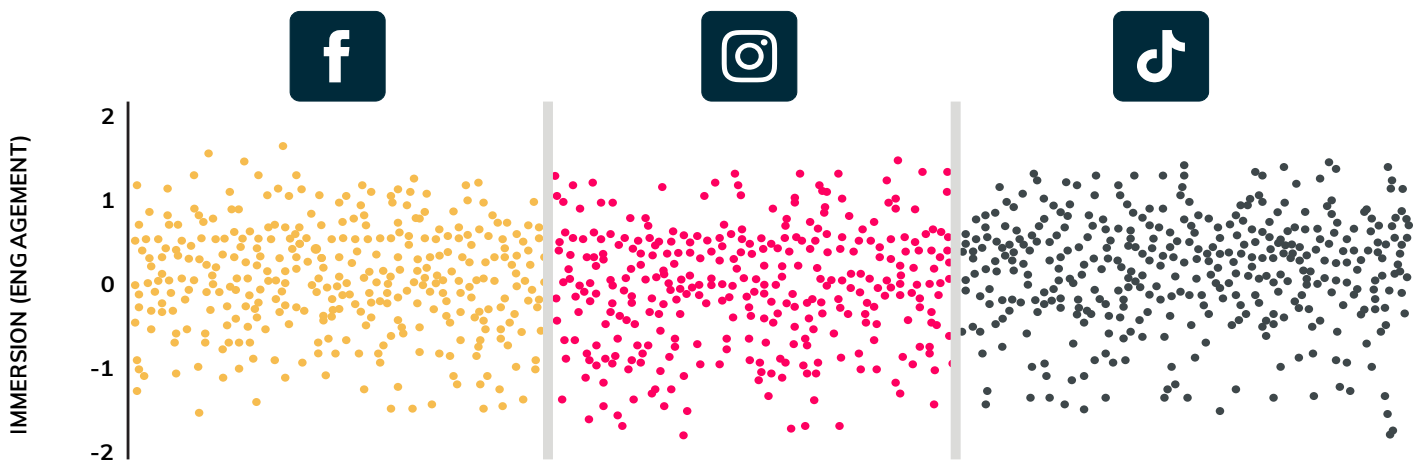


Figure 5. Scatterplot consisting of each of the 1,800 ads seen by participants on Facebook, Instagram, and TikTok, and the average activity related to Memory Encoding. The data shows large levels of variation, indicating the effects driven by the creative rather than the platform.

Firstly, the findings presented in Figure 4 and Figure 5 reinforce the concept of elasticity. Figure 4 highlights the crucial role that the platform plays in driving both Attention Time and Engagement metrics. When evaluating ad performance, it is evident that the low variability in potential Attention Times is predominantly dictated by the platform. Similarly, the low variability in the neural metric of Engagement is also notably shaped by platform dynamics.

Secondly, in addition to parallels being drawn between Attention Time and Engagement, parallels can also be drawn between stated outcomes and the neural metric, Memory Encoding. Both self-reported brand outcomes and Memory Encoding (Figure 5) saw similarly large levels of variation. This significant variability indicates that, unlike the previous two metrics, the elasticity in these outcomes is not solely influenced by the platform. Whether considering self-reported outcomes or Memory Encoding — both predictors of brand performance — it is evident that neither aspect is regulated by the platform but is, instead, contingent on the creative content.

Brand Market Share Influences Optimal Attention

We have long known that larger brands possess an inherent advantage in advertising, not the least of which is their ability to attract attribution from competitors advertising. Larger brands also enjoy advantages through their capacity to capture consumer attention (Alba et al., 1991; Campbell and Keller, 2003; Pieters & Wedel, 2004; Nelson-Field, 2023). This is of great importance given that consumers are presented with thousands of ads daily, and the rising instance of ad aversion (the process of consumers actively avoiding ads) is making it more difficult than ever for brands to break through.

Our research substantiates these ideas. Figure 6 indicates that larger brands, who typically exhibit higher initial (baseline) levels of awareness, require less attention to drive subsequent outcomes, and thus, lower Optimal Attention thresholds. Brands with baseline awareness above 75% are almost 1.5 times more likely to get lift with a threshold below 2 seconds, and almost twice as likely to have an optimal attention threshold below 1 second.

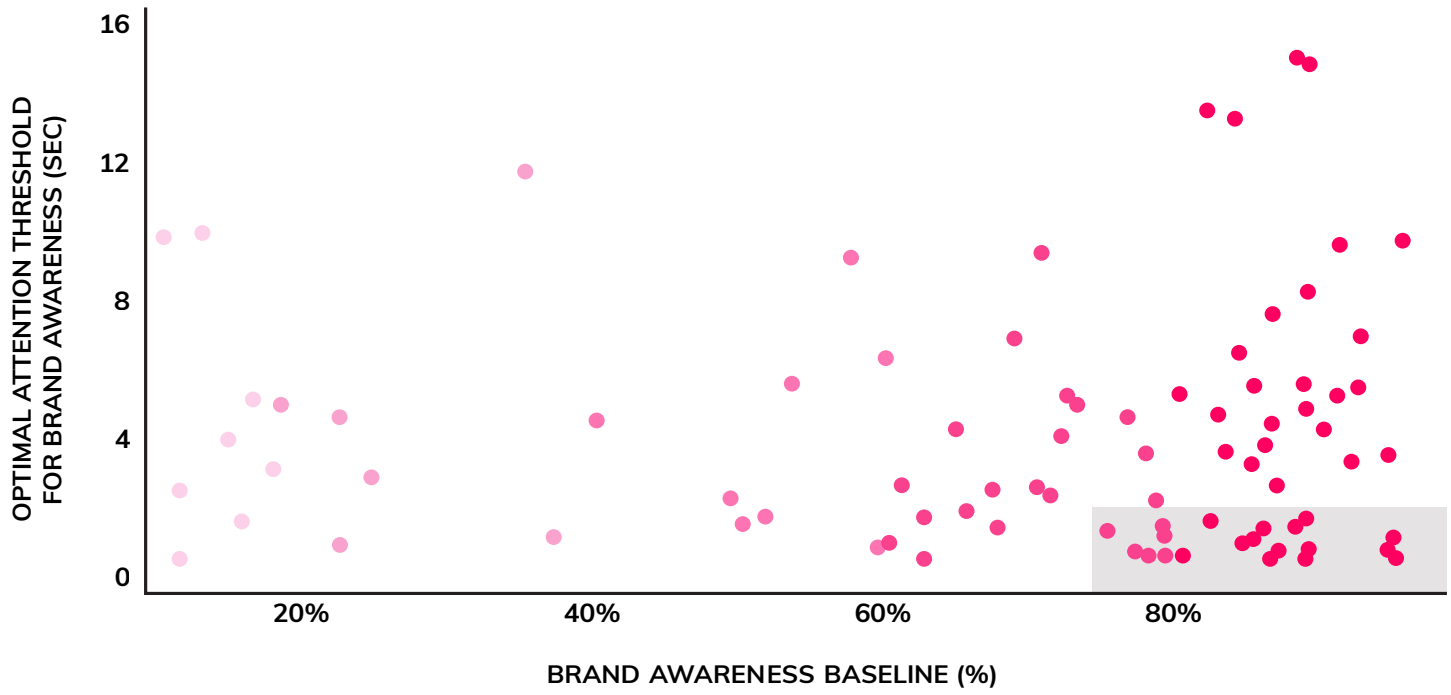


Figure 6. Scatterplot depicting the relationship between baseline outcome values and brand awareness.
The higher the initial brand awareness, the lower the Optimal Attention threshold for increases in brand awareness.

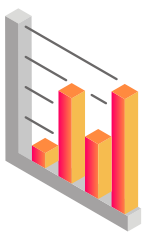
It is likely that this relationship is the consequence of larger, more well-established brands, possessing more distinctive assets, and having multiple previous exposures, and thus, requiring less attention to 'jog' the mind of the consumer. These assets can include strong visuals, unique colours, or audio in the form of jingles. The inclusion of these elements appears to trigger strong responses in the consumer despite them not necessarily having actively engaged with the ad.

Discussion & Key Takeaways

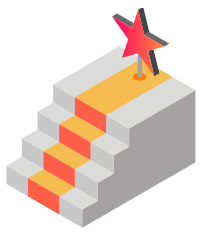
This research sheds light on the crucial role attention plays in driving brand outcomes across the purchase funnel, particularly in the upper and mid funnel stages. It reinforces existing literature that promotes the notion that without attention, brands can't grow. Specifically, our findings demonstrate that capturing consumer attention translates to significant lifts in brand awareness, recall, and consideration.

Key takeaways include:

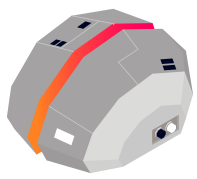
Attention drives upper and mid funnel outcomes: For all brands, developing a strong consumer base is reliant on awareness, recall, and consideration of the brand. Il of these metrics show strong correlation with Attention Time.



Attention thresholds vary by outcome: Different brand outcomes require different Attention Times. For brands, it is important to acknowledge that some outcomes occur more rapidly than others. For instance, achieving basic brand awareness requires less attention compared to driving prompted recall, consideration, or purchase intent.



Creative is the primary driver of outcomes: Whilst the platform places constraints on the upper and lower bounds of attention, the creative itself is the primary driver of brand outcomes. Investing in strong creative development can yield significant benefits compared to focusing solely on premium placements.



Neuroscience reinforces the power of the creative: Brain activity data supports the notion that creative content significantly influences memory encoding which is linked to key marketing goals like brand loyalty and sales.

Brand size matters: Larger brands with established presence require less attention to achieve positive outcomes due to pre-existing brand recognition and distinctive assets.

These findings deliver a strong call to arm for advertisers to move beyond a one size fits all appraoch to attention and adopt a strategy that is built on data that references the dynamic impact on the creative. By understanding the Optimal Attention thresholds required for individual brands, marketers can better match creative content to media buying decisions.By implementing this strategy, advertisers can reduce instances of purchasing inventory that generates either insufficient or excessive attention, thereby optimising their campaign delivery for maximal brand outcomes.

References

Alba, J. W., Hutchinson, W. J. & Lynch, J. G. (1991). Memory and Decision Making. In: T. Robertson & H. Kassarjian, eds. Handbook of Consumer Behavior. Englewood Cliffs, NJ: Prentice Hall, pp. 1- 49

Amplified intelligence. (2022). Attention Elasticity: The Attention Economy's chicken and egg question. Amplified Intelligence. Retrieved May 20, 2024 from https://www.amplifiedintelligence.com.au/article/attention-elasticity-explained/

Campbell, M. C., & Keller, K. L. (2003). Brand familiarity and advertising repetition effects. Journal of Consumer Research, 30(2), 292–304. https://doi.org/10.1086/376800

Kühn, S., Strelow, E., and Gallinat, J. (2016). Multiple "buy buttons" in the brain: forecasting chocolate sales at point-of-sale based on functional brain activation using fMRI. Neuroimage 136, 122–128. doi: 10.1016/j.neuroimage.2016.05.021

Nelson-Field, K. (2023, December 15). Attention applied: the nuance of size (and the attention/outcomes relationship). WARC. Retrieved April 18, 2024, from https://www.warc.com/newsandopinion/opinion/attention-applied-the-nuance-of-size-and-the-attention-outcomes-relationship/en-gb/6495

Pieters, R., & Wedel, M. (2004). Attention capture and transfer in advertising: Brand, Pictorial, and Text-Size effects. Journal of Marketing, 68(2), 36–50. https://doi.org/10.1509/jmkg.68.2.36.27794

Ramsøy, T. Z., Skov, M., Christensen, M. K., & Stahlhut, C. (2018). Frontal brain asymmetry and willingness to pay. Frontiers in Neuroscience, 12. https://doi.org/10.3389/fnins.2018.00138

Ravaja, N., Somervuori, O., & Salminen, M. (2013). Predicting purchase decision: The role of hemispheric asymmetry over the frontal cortex. Journal of Neuroscience, Psychology, and Economics, 6(1), 1–13. https://doi.org/10.1037/a0029949

Sharp, Byron, "What Do Marketing Executives Do?" in What Do Marketing Executives Do? (Oxford University Press, 2013)

About Playground xyz

Playground XYZ is on a mission to master the art and science of maximizing consumer attention. The company built the world's first technology stack that integrates visual attention measurement, analytics, and media optimization called the Attention Intelligence Platform. It powers a suite of leading products that help brands find and deliver their Optimal Attention. Headquartered in Australia, Playground XYZ has offices in Singapore, the United Kingdom, and the United States.

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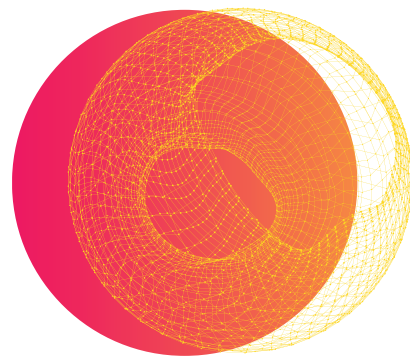

AIP Attention Intelligence Platform

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