



The Premium Experience: Neurological Engagement on Premium Websites

- INSIDE ↪
- Compared to NeuroFocus norms, “premium websites” such as Facebook, Yahoo, and the New York Times deliver substantially more engaging experiences than the average website.
 - Consumers do respond differently to premium websites oriented toward three different purposes: social networking, light news and entertainment, and hard news and commentary.
 - These differences are represented neurologically by different levels of attention, emotional engagement, and memory activation.
 - All of these differences appear to be related to the expectations people bring to these sites when they visit them, and these expectations, in turn, appear to impact how people respond to advertising on these sites.
 - A related study of advertising on three media contexts supports these results, showing superior attention emotional engagement for an ad presented in a social media online context vs. on TV or on a corporate web page.

AUTHORS ↳ DR. STEVE GENCO
JAWEED METZ
SOCIAL MEDIA AND ONLINE RESEARCH TEAMS
NeuroFocus, Inc.

SEAN BRUICH, Head of Measurement Research, Facebook, Inc.
MEASUREMENT RESEARCH TEAM
Facebook, Inc.

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ABOUT THIS REPORT ↳ As online advertising becomes a much larger part of advertisers' spend, a constant question is whether and to what extent the context of the ad matters – whether the digital online experience itself impacts the effectiveness of advertising, and whether that experience is best accompanied by a different advertising strategy and creative presentation than has worked in the past in traditional media such as TV.

The questions facing advertisers today are threefold:

- Do online consumers respond differently when experiencing premium websites with different mixes of personal engagement and relevance (informational, entertainment-oriented, social)?
- Do these differences have measurable impacts on how people respond neurologically to these sites?
- Should advertising be presented differently in these different online contexts? And if so, what is the best approach to optimize return on advertising spend across different types of premium sites?

In this study we provide the first quantitative answers to these key questions.

EXECUTIVE SUMMARY ↳ In this joint study by NeuroFocus and Facebook, we answer two key questions about online user engagement and resonance with website messaging:

- Do consumers respond differently to premium websites that engage their attention and interest in different ways, and if so, how?
- How can these different responses be leveraged by online marketers and advertisers to optimize their presence and improve their engagement with consumers on these premium sites?

We answer these questions by examining three very different kinds of online sites and experiences:

- A viewer looking at their own “News Feed” page on Facebook
- A viewer looking at the default home page of Yahoo!
- A viewer looking at the default home page of The New York Times

We also compare these findings to an earlier NeuroFocus study that examined responses to advertising in three different contexts:

- Within a traditional TV ad pod
- As a video presented on a corporate website
- As a video embedded in a Facebook product/service page

Some key conclusions and take-aways:

- All three web pages studied achieve significantly higher levels of attention and emotional engagement than “average” web pages, as measured by NeuroFocus norms. All three thus represent “premium website” experiences.
- Consumers do respond differently to premium websites oriented toward different purposes, in this case: social networking, light news and entertainment, and hard news and commentary.
- These differences are grounded neurologically in different levels of attention, emotional engagement, and memory activation, as measured by NeuroFocus metrics.
- The New York Times home page elicited high levels of attention and memory, but less emotional engagement than the other two pages.
- The Yahoo! home page elicited higher levels of emotional engagement than the New York Times home page, but less than the Facebook page, and less memory activation than either of the other two pages.
- People viewing their own “News Feed” page on Facebook exhibited high levels of activation on all three metrics: attention, emotional engagement, and memory. The Facebook page had statistically higher levels of emotional engagement than either of the other two pages tested.
- Some gender differences were observed: Men implicitly saw Facebook as resonating more with “for me” than women did, and women saw Yahoo! as resonating more with “connecting” and “advice” than men did, but otherwise the genders responded similarly.
- All of these differences appear to be related to the expectations people bring to these sites when they visit them, and these expectations, in turn, appear to impact how people respond to advertising on these sites.
- Sites that include social elements appear to benefit from the active cognitive engagement achieved by online experiences, but also create a degree of emotional engagement that rivals TV.
- To maximize user engagement, marketers and advertisers need to balance multiple considerations outlined in this paper when designing online ads, messaging, and interactive experiences for premium websites.

BACKGROUND ↪ We sought to determine quantitatively how consumers responded to premium websites, as well as how they responded to online ads embedded in those sites. To compare a spectrum of premium website experiences, three popular website home pages were tested: an individual’s Facebook “News Feed” page (representing a social online experience), the Yahoo! home page (representing a non-personalized

“light news and entertainment” experience), and The New York Times home page (representing an information-oriented “hard news and commentary” experience).

While participants were presented with the standard homepage experience across all three of these sites, the study was not designed to be an exhaustive or representative view of all of the pages and capabilities of any of the three sites.

All tests reported in this paper compared responses from a “general population” sample of 84 internet users in the United States: 50% men, 50% women, ages 21-54, with a minimum annual household income of \$30,000. All of our participants were screened to ensure that they had a Facebook account, but we did not explicitly include or exclude Yahoo! registered members or New York Times subscribers since a substantial portion of site traffic to those homepages are users who have not logged in.

These results were also compared to a previous study performed by NeuroFocus that measured responses to advertising across three similar contexts: a 30-second ad presented in a typical TV context, the same ad embedded in a corporate website, and the same ad presented on a Facebook product/service page.

NEUROFOCUS MEASURES AND METRICS

NeuroFocus measures focus on key conscious and subconscious elements of how consumers respond explicitly and implicitly to sensory experiences (like watching an ad or reading a webpage) along three core dimensions: Attention, Emotion, and Memory. These metrics capture direct subconscious brain activity while the experience is underway, rather than relying on respondents’ own after-the-fact estimates of how attentive they were, how emotionally engaged they were, or how likely they would be to remember the experience. Advertising cannot elicit attitude change without at least some change in these three critical neurological responses to the ad.

All these measures are based on well-established and recognized brainwave patterns that have been identified in academic scientific literature and adapted for use within advertising, marketing, and media stimuli by NeuroFocus scientists. The metrics are calculated as an average across the full duration of the experience and standardized on a 0-to-10 scale for comparison, with each score having a 95% confidence interval of +/- 0.2, so two scores can be judged significantly different from each other at $p < .05$ if their scores differ by 0.4 or more.

Across all types of product and marketing material tested by NeuroFocus (e.g. print ads, websites, product packaging, product concepts, brand messaging, etc.), the full spectrum of possible responses forms an approximately normal distribution on the standardized 0-to-10 scale with a median of 4.9-5.1 for each metric.

TABLE 1. ↳
NEUROFOCUS CORE
METRICS: DEFINITIONS

METRIC	DEFINITION	INTERPRETATION (RULES OF THUMB)
Attention	<ul style="list-style-type: none"> Measures sustained focus and shifts in focus over time. 	<p>0-to-2: very poor attention, discard and try again</p> <p>2-to-5: low to minimally acceptable attention, major modifications may be required</p> <p>5-to-8: good attention range for premium websites and online ads, higher is better, small changes can usually achieve improvements</p> <p>8-to-10: excellent attention, do not try to improve</p>
Emotional Engagement	<ul style="list-style-type: none"> Measures intensity of emotional response and automatic motivational classification of stimuli. Quantifies automatic (nonconscious) classification of sensory experiences as potentially rewarding (approach motivation) or potentially threatening (avoidance motivation). Often drives choices and behavior. 	<p>0-to-2: disengagement or aversive emotional response, discard and try again</p> <p>2-to-5: low to minimally acceptable emotional engagement, major modifications may be required</p> <p>5-to-8: good emotional engagement range for premium websites and online ads, higher is better, small changes can usually achieve improvements</p> <p>8-to-10: excellent emotional engagement, do not try to improve</p>
Memory Retention	<ul style="list-style-type: none"> Measures formation of connections and activation of personal relevance. Activated automatically for experiences that are personally meaningful and provide an opportunity for learning. Creates and reinforces connections that allow us to retrieve related information later on. 	<p>0-to-2: very poor memory retention, discard and try again</p> <p>2-to-5: low to minimally acceptable memory retention, major modifications may be required</p> <p>5-to-8: average memory retention range for premium websites and online ads, higher is better, small changes can usually achieve improvements</p> <p>8-to-10: excellent memory retention, do not try to improve</p>
Overall Neurological Effectiveness	<ul style="list-style-type: none"> A composite measure of the efficiency of cognitive processing – a weighted combination of attention, emotional engagement, and memory activation. 	<p>0-to-2: overall very poor effectiveness, discard and try again</p> <p>2-to-5: low to minimally acceptable effectiveness, major modifications may be required</p> <p>5-to-8: average effectiveness range for premium websites and online ads, higher is better, small changes can usually achieve improvements</p> <p>8-to-10: excellent effectiveness, do not try to improve</p>

In addition to measuring direct brain responses during an experience, NeuroFocus also measures the degree to which messages and conceptual associations are strengthened by an experience. This “Messaging Resonance” metric measures the extent to which the experience provided a subconscious “lift” to those associations.

Messaging Resonance results are reported on a six-level scale from “no resonance”, i.e. no lift (Level 0) to “good resonance” (Levels 1-2) to “exceptional resonance” (Levels 3-5). Across hundreds of Messaging Resonance tests NeuroFocus has conducted, about 65% of concepts score at Levels 1 or 2, 20% score at Level 3, and 10% score at Levels 4 or 5. For this study of premium websites, NeuroFocus measured resonance to three messaging words:

- CONNECTING
- ADVICE
- FOR-ME

These words were chosen because they represent some of the key concepts that advertisers would expect to be “activated” when visiting premium websites like the three studied here.

EXPERIMENTAL DESIGN ↳ The data collection was performed at the NeuroFocus lab in Berkeley, CA as part of two separate studies.

In the first study, all participants viewed three stimuli on-screen while their brainwaves were recorded: their own Facebook home page, a recent generic Yahoo! home page, and a recent generic New York Times home page. The pages were shown in randomized order to each participant.

In the second study, a different sample of participants were randomly assigned to one of three groups:

1. A group that viewed their personal Facebook “News Feed” home page
2. A group that viewed a recent generic Yahoo! home page
3. A group that viewed a recent generic New York Times home page

All these pages in the second study were modified to contain a simple online ad for a well-known soft drink beverage in a standard location where such ads typically appear on each page.

Participants in the second study experienced the following sequence as a movie: the home page appeared for a short time. The cursor traveled from the center of the page to the ad. From a visual and auditory perspective, the cursor “clicked” on the ad, and the link then transferred to a product landing page. For the Facebook group, the landing page was a Facebook “fan page” for the beverage, whereas for the Yahoo! and New York Times groups, the landing page was the corporate home page for the beverage company, as it appeared at that time. Brainwaves were measured throughout the experience and results were computed for each whole experience and separately for the home page and landing page sequences of each experience.

DEFINING “PREMIUM WEBSITES” NEUROLOGICALLY ↳ Brain responses at the level of basic attention, emotional engagement, and memory activation have the advantage of being universal across stimuli. Whether we are viewing a web page, watching an ad on TV, or walking along the aisles of a grocery store, attention to something in our environment “registers” in our brains in the same way, experiencing emotional attraction registers in the same way,

and activating memory registers in the same way. This is equally true for the brain of a Chinese shopper in Shanghai, a Facebook user in Kansas, or a TV viewer in France. All normal human brains express these basic cognitive states in the same way.

At NeuroFocus, we have leveraged this universality to build a cross-cultural, cross-category, cross-platform, and cross-modality database of neurological responses. We have built this database across hundreds of studies and thousands of stimuli over six years. We use it to standardize and calibrate our metrics, which are presented on a 10-point scale that represents the full range of responses we have observed.

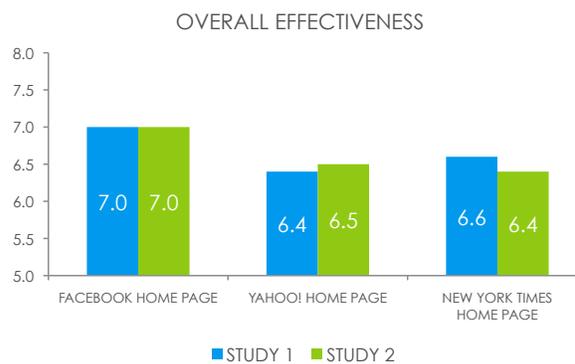
Neurological responses to websites and web pages, like any other stimuli that elicit attention, emotion, and memory responses from human brains, are distributed within this database in a roughly normal distribution, with a median of approximately 5.0. A very small number of the very best web pages we have tested score above 8 for overall effectiveness. We define “premium websites” as those that score above 6.0 on overall effectiveness. Empirical examination of sites that score in this range shows them usually to be either popular “destination” sites or portals with high traffic and millions of regular visitors, or the websites of extremely popular brands or companies. We believe these sites also tend to be the best advertising opportunities for online advertisers.

In contrast to premium websites, non-premium sites tend to be more generic corporate sites, transaction-oriented sites, or personal sites. They populate the lower half of our database distribution.

For this study, we have compared neurological responses within the premium website category. As the findings below reveal, all three web pages included in the study achieve neurological response scores that qualify them as premium sites.

Do neurological responses to these three pages – representing three very different types of premium website experiences – differ? And what implications do these differences hold for online advertisers desiring to optimize their online advertising spend?

KEY FINDINGS ↪



All three premium online sites elicited above-average responses from participants in terms of the key summary metric of overall effectiveness. Scores for each page were statistically identical across studies. These measures have been validated for statistical reliability across studies and across stimuli.

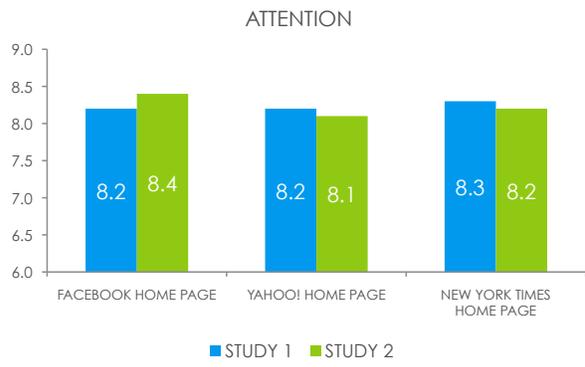
Overall effectiveness represents a composite score that combines Attention, Emotion, and Memory responses in a single composite measure of the overall cognitive impact of the website viewing experience.

The average score for participants viewing their own home pages on Facebook, (both with and without ad presented), was significantly higher than for either the Yahoo! or New York Times home pages.

Also of note, Study 1 did not contain the target ad on the three pages, whereas Study 2 did. Statistically identical scores for these two page views, derived from different samples of participants, provides evidence that participants responded similarly to their Facebook “News Feed” pages, the Yahoo! page, and the New York Times page, whether or not advertising was present on the page.

ATTENTION, EMOTION, AND MEMORY ON PREMIUM WEBSITES

Results demonstrate that premium website content pages attract much higher consumer attention than the average website tested by NeuroFocus.

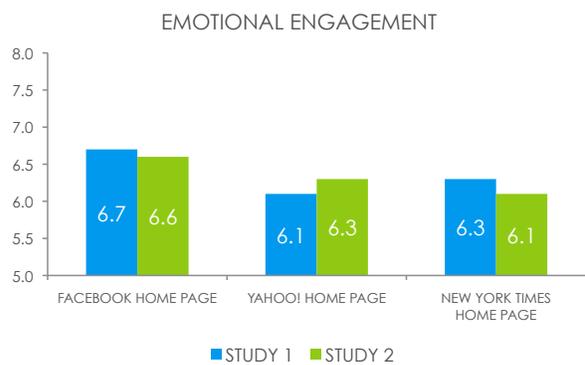


All three sites scored in the 8.0+ range for attention, signaling significant focus on the site while the pages were displayed in both the ad and non-ad studies. These scores were not significantly different across sites – all scored in the 8.1-8.4 range in both studies.

The presence of the beverage ad in Study 2 had neither a positive nor negative impact on the levels of attention attained.

The results for emotional engagement were somewhat more differentiated across sites. In Study 1, the Facebook page generated significantly higher emotional engagement than the other two pages, while in Study 2 it scored significantly higher than the New York Times page, but did not quite reach the 0.4 difference required for significance vs. the Yahoo! page.

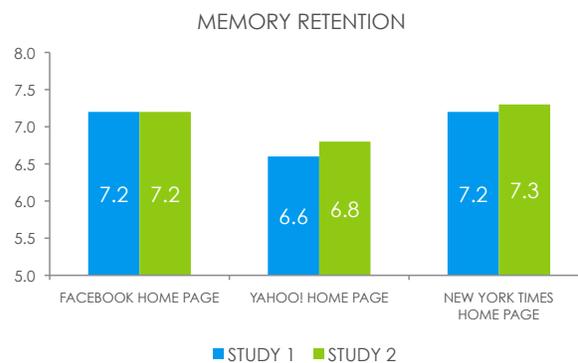
Overall, the emotional engagement scores are lower than the attention scores across all three premium sites. This difference is in line with other NeuroFocus findings. Compared to more passive media, online content commands more attentional resources because there are many elements competing for attention at any moment. This tends to produce higher levels of attention for websites vs. more passive media.



Emotional engagement, in contrast, often shows a slightly negative correlation with attention, thus contributing to the lower emotion scores on these sites. Emotional connections are more automatic and less susceptible to conscious monitoring than attentional cues. As a consequence, high levels of attention can have a diminishing impact on emotional engagement, which is what we see here.

What is most interesting in these results is that this diminishing of emotion in the context of high attention in the online context is significantly less for the Facebook page than for the other two pages. This is additional evidence that:

The emotional appeal of social media sites appears to compensate for some of the attentional bias demanded by less socially-oriented premium sites.



Finally, looking at memory retention while viewing these three premium websites, we see yet a different pattern. As noted in Table 1, memory scores tend to be higher when stimuli are personally meaningful and provide opportunities for learning.

Here we see in both studies that the Facebook and New York Times home pages elicit significantly more memory retention than the Yahoo! page. This is not a positive or negative reflection on any of these pages, but

simply validates and quantifies the common-sense observation that:

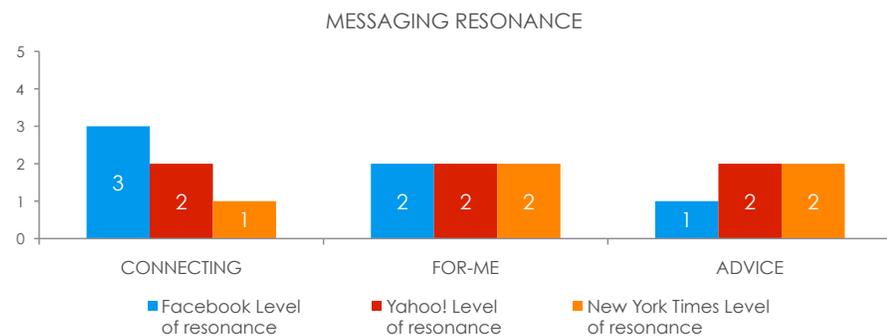
Viewing your own Facebook "News Feed" page triggers more memory processing due to the personal significance of the content on the page.

Viewing the New York Times home page triggers more memory processing because it provides new information and opportunities for learning.

Viewing the non-personalized Yahoo! home page triggers somewhat less memory processing because it is both less personally relevant and less informationally dense than the Facebook and New York Times pages, respectively.

COMMUNICATING
IMPLICIT MEANING
ASSOCIATIONS ON
PREMIUM WEBSITES

↳ The NeuroFocus “Messaging Resonance” methodology allows us to test the extent to which selected messages are associated with, and therefore reinforced by, different experiences, such as experiences viewing different premium websites. In Study 1, three messages were tested before and after each website viewing: CONNECTING, ADVICE, and FOR-ME.



After viewing one’s own Facebook page, CONNECTING showed a resonance lift of Level 3, vs. Level 2 after viewing the Yahoo! page, and Level 1 after viewing the New York Times page (Level scores represent significantly different magnitudes of lift, $p < .05$). This can be interpreted as meaning that, after viewing their Facebook page, participants were more receptive toward associations with “connecting” than they had been before viewing their Facebook page, and further, that this level of receptivity was significantly higher than for the same participants after viewing either the Yahoo! or New York Times home pages. Also, conversely, the Level 1 score for CONNECTING for the New York Times page implies that this page is significantly less likely to trigger associations with “connecting” than the other two sites.

These results validate and quantify the degree to which:

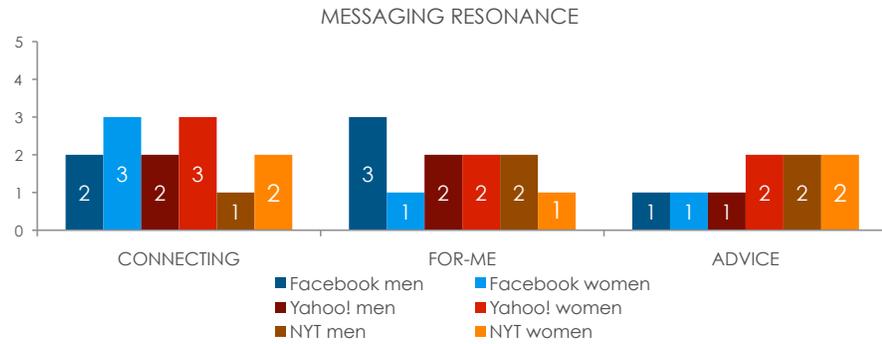
The Facebook experience was more about “connecting” than either the Yahoo! or New York Times online experiences.

Finally, we see that the Yahoo! and New York Times home pages both trigger significantly greater resonance with the message ADVICE than the Facebook home page. We interpret this to mean that:

The Yahoo! and New York Times experiences were both more about getting “advice” than was the Facebook experience. All three premium sites demonstrated good resonance with “for me”.

A few interesting differences emerge when we subdivide messaging resonance scores by gender.

For the most part, gender differences are no more than single-level differences, but it is interesting to note that (1) women associate both Facebook and Yahoo! with CONNECTING at Level 3, (2) men have much higher resonance with FOR-ME for Facebook than women do, and (3) Yahoo! achieves a Level 2 resonance for ADVICE for women, but only Level 1 for men. In short:



Men implicitly see Facebook as resonating more with “for me” than women do, and women see Yahoo! and Facebook as resonating more with “connecting” than men do, but otherwise the genders exhibit similar profiles of messaging resonance for each of these premium websites.

COMPARING ONLINE ADVERTISING TO TV ADVERTISING

An earlier study published by NeuroFocus in conjunction with the 2010 Winter Olympics provides some additional insights on an important related question. Our understanding of how different media are consumed is evolving in the following direction:

- TV is believed to be a more passive and immersive media, and therefore has historically been seen as better for emotional engagement.
- Traditional online properties are believed to be more cognitively engaging, but less emotionally engaging than TV, so therefore are seen as better for informational advertising.
- Sites that include social elements stand out as a particularly attractive advertising opportunity – benefiting from the active cognitive engagement achieved by online experiences, but also offering a degree of emotional engagement that rivals TV.

Is this model supported by the kind of neurological testing described in this paper?

In this earlier study, NeuroFocus analyzed a 30-second Visa ad called “Trip for Life” that offered Visa card holders an opportunity to win an all-expenses-paid trip to the upcoming 2010 Winter Olympics. Narrated by Morgan Freeman, the ad depicted great moments in Winter Olympics history and invited viewers to enter the contest and become a part of that history. The ad was well received and tested at above-average levels on NeuroFocus metrics.

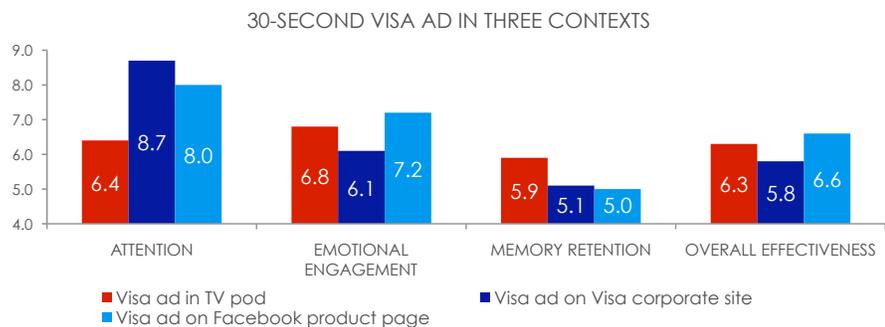
An ad presented in three media contexts



To test the impact of different media contexts on responses to this ad, NeuroFocus tested it in three contexts:

1. Within a traditional TV ad pod
2. As a video embedded in the Visa corporate website
3. As a video embedded in a Facebook product/service page

The results provided solid evidence in favor of the hypotheses that TV and online are different, and social networking sites are different from more conventional online sites. Here are the results for the three core metrics and effectiveness:



First, the results show significantly more attention when the ad is presented in the two online contexts than when presented on TV.

Second, the ad generated significantly more emotional engagement when presented in the social networking context than in either the corporate website or the TV context.

Third, the ad generated generally low levels of memory activation in all three contexts (all are below 6.0) but did better on TV than in either online context. Memory scores at these levels usually indicate that an ad will have weak persuasive capability. It may be that viewers implicitly recognized the low likelihood of winning the described contest, and discounted memory retention accordingly.

Finally, these measures translated into overall effectiveness scores that rank the Facebook experience slightly higher than the TV experience, and significantly higher than the online VISA website experience.

In conclusion:

Running an ad in Facebook produces a response profile that combines the strengths of the corporate site experience (high attention) and the TV experience (high emotion).

KEY RESULTS AND INSIGHTS

Neurological measurement of online experiences across premium websites delivers a variety of new insights that are invisible when using traditional self-reporting survey techniques. We have seen that website visitors' brains orient in different ways toward different websites. They scan the sites differently, get emotionally engaged differently, and engage memory differently.

All of these differences, we believe, are related to the expectations the brain brings to these sites, and these expectations, in turn, impact how people respond to advertising on these sites and on follow-on landing pages.

We have also seen consistency in these results across different samples and different depictions of the same websites (e.g., without the target ad in Study 1, with the target ad in Study 2).

Let us review the neurological profiles for each of the premium website pages we tested in these two studies:

Non-Personalized Yahoo! – lightly informational, entertainment-oriented

Note: This analysis was only measuring the Yahoo Homepage and not some of Yahoo's other pages using personalization (eg Yahoo Mail, Yahoo Sports, and My Yahoo).

Emotional engagement on the non-personalized Yahoo! home page was above average, comparable to the New York Times page, but lower than on the Facebook page. This lower emotional connection, we believe, is related to the less prominent social element on Yahoo! vs. Facebook, as reflected in its lower resonance with the CONNECTING messaging word.

Attention on the Yahoo! page was high and statistically equivalent to the other two sites.

Where Yahoo! was distinctive was in its lower levels of memory activation vs. the other two sites. We attribute this to the "lighter" informational expectations for Yahoo vs. Facebook (social information) and the New York Times (hard news information).

We also saw some interesting gender differences for the Yahoo! site. Women saw Yahoo! as resonating more with CONNECTING and ADVICE than men did. These associations may be related to the specific content of Yahoo!, represented by prominent display of links to topics of personal and lifestyle interest.

New York Times – heavily informational, but neither personal nor social

This site provided an excellent example of a “serious” news site. Unlike Yahoo!, there were no links to non-news topics on the New York Times home page. There were subtle links to topics such as Fashion and “Arts,” but the overall focus was on serious national and international news.

Participants brought a different set of expectations to this site, and generated different responses.

As with the other sites, attention for the New York Times home page was high. Emotional engagement was comparable to Yahoo!, but statistically lower than for Facebook. Memory retention was higher than for Yahoo!, and on par with Facebook.

Where this site stood out was in its much lower association with CONNECTING in the Messaging Resonance test, especially compared to Facebook, and its higher association with ADVICE for both men and women.

Facebook – social, personal, and informational

In all of our tests, Facebook elicited a higher level of emotional engagement compared to the other two sites. This effect was significant at $p < .05$ in three of four comparisons, and close to significant (difference of 0.3) in the fourth comparison.

In terms of attention, all three premium websites achieved high levels of attention. This appears to be a benefit that these three well-known, premium sites share as a consequence of their brand equity and visibility in the online world. People know what to expect, and they come to the page prepared to engage in the expected experience.

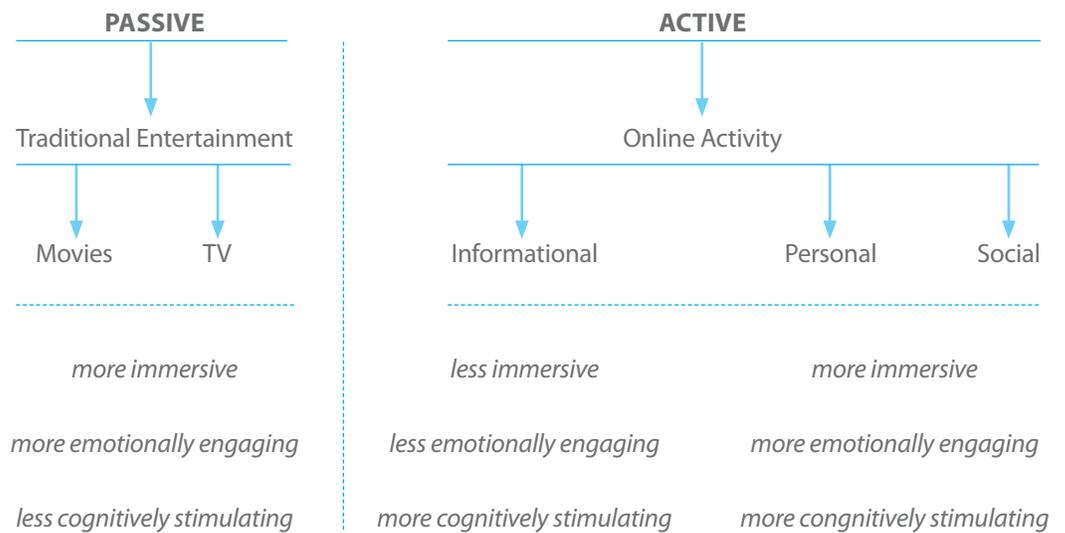
For memory activation, Facebook performs more like the New York Times page than the Yahoo! page. High attention and memory go together for Facebook, because it offers something new to learn – about friends and personally-relevant activities – every day.

The social element with Facebook was further validated by the stronger association with CONNECTING, identified in the Messaging Resonance test.

CONCLUSIONS ↪ Until the meteoric rise of social networking as a new and hugely popular form of consumer online experience, the difference between TV and online touchpoints as advertising media was largely formulated as a difference between the highly immersive but relatively passive and cognitively undemanding context of TV and the less immersive but highly interactive, information-rich and cognitively demanding context of online browsing and website navigation. In a nutshell, TV was seen as a passive and emotional medium, while online was seen as an active, less emotional, and more cognitive medium.

Today, the availability of highly personalized and highly social online experiences has changed this equation. As illustrated in the following chart, online sites now offer a much wider range of engagement experiences than simply cognitive and informational.

Media, personal engagement, and relevance



In this study, we have uncovered the following important findings:

- Online consumers do respond differently when experiencing premium websites with different mixes of personal engagement and relevance (informational, entertainment-oriented, and social).
- These differences have measurable impacts on how people respond neurologically to these sites in terms of immersion, cognitive stimulation, and emotional engagement.
- Advertising presented on these sites can leverage these different neurological profiles for increased effectiveness.

About NeuroFocus

The world's leading neuromarketing firm, NeuroFocus (www.neurofocus.com) brings advanced neuroscience knowledge and expertise to the worlds of branding, product development and packaging, in-store marketing, advertising, and entertainment. NeuroFocus clients include Fortune 100 companies across dozens of categories.

Headquartered in the U.S. and operating globally through offices and NeuroLabs in the UK and Europe, the Asia/Pacific region, Latin America, and the Middle East, the company leverages Nobel Prize caliber and Doctorate-level credentials in neuroscience and marketing from the University of California at Berkeley, MIT, Hebrew University, Harvard, Oxford, Columbia University, and other leading institutions, combined with executive business management and consulting expertise.

About Facebook

Founded in February 2004, Facebook's mission is to give people the power to share and make the world more open and connected. Anyone can sign up for Facebook and interact with the people they know in a trusted environment. Facebook is a privately held company and is headquartered in Palo Alto, Calif.

For more information, visit www.facebook.com