

DESIGN LESSONS FROM USER GENERATED CONTENT:  
AN ANALYSIS OF USER GENERATED INTERNET VIDEO  
AND FLASH ANIMATIONS

---

jeffrey bardzell, ph.d. • shaowen bardzell, ph.d. • tyler pace

## EXECUTIVE SUMMARY ::

User generated content refers to any digital media created and uploaded to the Internet by nonmedia professionals. This new form of content is quickly becoming the dominant media form of the Internet. By 2011, over 50% of all Internet users in the United States will participate in user generated content both as creators and viewers. Additionally, our analysis suggests that over 60% of most successful viral content in the last year was user generated. Digital media designers must learn from the successes and failures of user generated content in order to remain competitive in the changing digital media market.

In this report, we present an analysis of successful user generated content from popular Internet video and Flash animation portals. Viewer engagement was measured with OTOinsight's Quantemo™ neuromarketing research system. Quantemo™ utilizes a multi-modal approach that combines self-report, physiological and neurological data to holistically and reliably measure user engagement with digital media. Analyzing the results from the Quantemo™ sources, we present a set of four insights concerning how successful user generated content appeals to viewers and what professional marketers can learn from the efforts of user generated content creators.

### INSIGHTS

1. Traditional evaluation methods are insufficient for explaining and interpreting emotional response to digital media.
2. Setting expectations prior to content viewership encourages positive ratings and engagement
3. Viewers encourage and respond positively to emotional content.
4. Empathy and appeal are key strategies for promoting positive emotional response and engagement.

## RECOMMENDATIONS

1. Measure for emotion and engagement during the media's development to help predict viewer response on release.
2. Carefully craft metadata to promote the media while also setting accurate expectations of its content and style.
3. Provide emotionally rich content but ensure emotionally satisfying conclusions are possible.
4. Empathize with viewer's personal histories or appeal to the interests and culture of their microcommunity to promote positive response and engagement.

## INTRODUCTION ::

### USER GENERATED CONTENT

User generated content, also known as user created content, consumer created content or consumer generated media, refers to any digital media created and uploaded to the Internet by non-media professionals (Interactive Advertising Bureau, 2008). Everything from ratings on Amazon.com to professional-quality video on YouTube or a student's Facebook profile is broadly considered part of the domain of user generated content. In 2007, conservative estimates suggest that at least 69 million Internet users in the United States, 33% of all Internet users in the US, participate in user generated content (Verna, 2007). By 2011, 101 million Internet users in the US, 50% of all Internet users in the US, are expected to participate in user generated content.

The expected growth and current popularity of user generated content is changing and informing the expectations of digital media on the web. To offer an example of the importance and dominance of user generated media forms, in March 2008 11.5 billion videos were watched on YouTube.com for an average of 42 videos per users [Comscore]. Our analysis of the top videos on YouTube.com suggests that at least 60% of those 11.5 billion monthly video views are for user generated content. As user generated content continues to grow as the preferred digital media form, it is important for digital media professionals to critically evaluate user generated media and learn from the successes and failures of the medium. This report presents insights aimed at helping digital media professionals learn from the media strategies employed by some of the most successful user generated content of the last two years.

## INTERNET VIDEO AND FLASH ANIMATIONS

Internet videos and Flash animations are among the most popular forms of user generated content on the Internet. Videos and animations achieve such levels of popularity that the concept of “viral content” was created to explain the lightning speed with which these media travel among viewers, in a decentralized process of friends recommending videos to their family and friends, who pass them along to their friends and family, and so on. An analysis of the most popular viral videos, as tracked by Unruly Media, over the last year (October 2007-October 2008) reveals that over half of the videos are user created [UNRULYMEDIA]. The user generated videos received between 4-35 million views each.

Flash animations, while less popular than Internet video in general, are another successful form on user generated content. Newgrounds.com, a premier site for Flash animations, hosts 100% user generated content. The top 10 content producers each receive over 30 millions views annually. Additionally, the top 10 animations each received between 17-42 million views at Newgrounds alone, with even higher numbers when re-postings at other portals are counted. Like most user generated content, media hosted at Newgrounds.com is often spread to other content sites. As an example, the animation “The Ultimate Showdown” was originally posted to Newgrounds.com and received 10 million views. A few months after its release on Newgrounds.com, “The Ultimate Showdown” was posted to YouTube under several names and received 3 million views across all its postings.

When combined, Internet videos and Flash animations arguably constitute the most popular duo of user generated content and a significant entertainment source for the majority of Internet users. Without question, these two media have great potential to shape and inform the expectations, standards and desires of all Internet viewers. Understanding how user generated content engages viewers is of immense value to professional digital media producers.

## STUDY

User generated content continues to grow in both its popularity and prominence throughout the Internet. As noted above, sites like Newgrounds and YouTube enable a broad base of Internet users to participate in the creation and propagation of user generated content. In many cases, user generated content competes with the traditional content model of the Internet. The wild success of user generated content has inspired marketers and digital media producers to learn from and mimic the most successful examples of user generated content. The results presented in this report include recommendations for producing digital media informed by an analysis of participant reactions to user generated Internet videos and Flash animations.

The study discussed in this report explores participant reactions to and reflection on their experience with a wide range of user generated Internet media. For this study, participants were asked to watch six Internet videos or animations of their choosing from a collection of 60 videos and Flash animations gathered from three popular user generated content sites (Table 1). Videos were divided into eight genres to assist participants in selecting media related to their preferences. Participants were allowed to watch their six media in any order and were not instructed to watch any particular items.

SITE	URL	MEDIA EMPHASIS
YouTube	<a href="http://www.youtube.com">www.youtube.com</a>	Video
Newgrounds	<a href="http://www.newgrounds.com">www.newgrounds.com</a>	Flash
Albino BlackSheep	<a href="http://www.albinoblacksheep.com">www.albinoblacksheep.com</a>	Flash

TABLE 1: User generated content site : used in this study.

21 participants have completed the study watching a total of 136 videos and animations. Participants were 52% male, 48% female with 80% between 18-29.

While watching their media, participants were connected to OTOinsight's Quantemo™ neuromarketing research system. Quantemo™ simultaneously records multiple biophysical signals (breath rate, galvanic skin response, heart rate, body temperature) in addition to eye and click tracking information. After recording the biophysical measures, Quantemo™ combines the measures into a single representative measure of physiological engagement. The Quantemo™ Physiological Index or QPI serves as a single point of reference of the overall level of physical engagement (or disengagement) exhibited by a research participant. Positive QPI scores represent stronger physiological engagement while negative QPI scores represent weaker physiological engagement.

In addition to using the Quantemo™ system, participants in this study were asked to complete the following activities after viewing each video.

1. RATING: Participants were asked to assign a 1- to 5-star rating for each video or animation, with 1 the lowest and 5 the highest.
2. REVIEW: Participants were asked to write a short review of each video or animation.
3. EMOTIONAL TAGGING: Participants were asked to select up to 3 of 36 possible emotional descriptors to describe the emotional dimensions of each video or animation.

The emotional tagging system used in the study is derived from the *Geneva Emotion Wheel* (Scherer, 2005) developed by the researchers at the Swiss National Research Center in Affective Sciences. The *Geneva Emotion Wheel* is designed to obtain self-report information on a wide-range of felt emotions elicited by a particular event (in the case of this study, viewing user generated Internet media). For this study, we simplified the wheel into a list of emotions and included the additional emotional descriptors recommended by Scherer which are not part of the *Geneva Emotion Wheel*. Expanding the list of emotional descriptors offers participants more opportunity to express their emotional state accurately. When selecting emotional descriptors, participants choose an emotion (which are predetermined by Scherer to be positively or negatively valenced) and an intensity level (emotional arousal) to reflect how strongly they feel the selected emotion. Both valence and intensity factor into our scoring of emotional descriptors.

QUANTEMO™ INDEX	COMPONENTS
Quantemo™ Physiological Index (QPI)	Breath Rate, Heart Rate, Body Temperature, Galvanic Skin Response
Quantemo™ Engagement Index (QEI)	QPI, Ratings, Emotion Scores

TABLE 2: Quantemo™ index types and component values.

The QPI, ratings and emotional descriptor scores are combined to form the Quantemo™ Engagement Index or QEI. Calculating the QEI produces a single, representative and holistic measure of user engagement which allows researchers to correlate the objective physiological data of the QPI with the subjective, self-report data of the ratings and emotion scores. Additionally, the written reviews offer insight into the reactions and thoughts of participants after they viewed each media. The insights presented in this report are based on analysis of the QPI, QEI and written reviews.

## INSIGHTS

### INSIGHT 1: Traditional Evaluation Methods are Insufficient for Explaining and Interpreting Emotional Response to Digital Media

The study discussed in this report generated a wealth of information regarding participant reactions to the two dominant forms of user generated content. An analysis of this data provided great insight into design goals of user generated content (discussed in later insights), but the same analysis also shed light on the surprising complexity of user reactions and the glaring insufficiency of the most common Internet metrics to accurately and holistically measure user reaction to Internet media. While simple rating systems (1-5 stars) and traffic metrics (page views) offer post-facto predictive power regarding the success or failure of Internet media, they lack the early interpretive power to provide feedback on the design of the media prior to release.

COMMON METRICS	QUANTEMO™ METRICS
Ratings, Traffic	Physiology, Neurology, Emotion Self-Report, Behavioral, Ratings

TABLE 3: Common vs. Quantemo™ Evaluation Metrics

The diversity and depth of the measures collected by the Quantemo™ system represent a major step forward in identifying and interpreting complex user reactions to digital media. As an example of the complexity of user ratings, emotional scores derived from the emotion self-report activities used in this study are both strongly correlated to ratings (75%,  $p < .001$ ) and predict the overall (1-5) ratings of media used in the study 64% of the time (Figure 1,  $p < .001$ ). A strong association between ratings and emotion scores suggest that ratings are complex measures that represent more than abstract, cognitive judgments about digital media delivered in an instant of time after viewing the media. Instead, users attempt to incorporate a diverse and complex range of emotional reactions into a simple 1-5 score. However, due to a limited amount of available information rating scores fail to capture the diversity and intensity of emotional reactions by offering such a limited amount of information.

## SCATTERPLOT OF PREDICTED AND EXPECTED VALUES FOR RATING

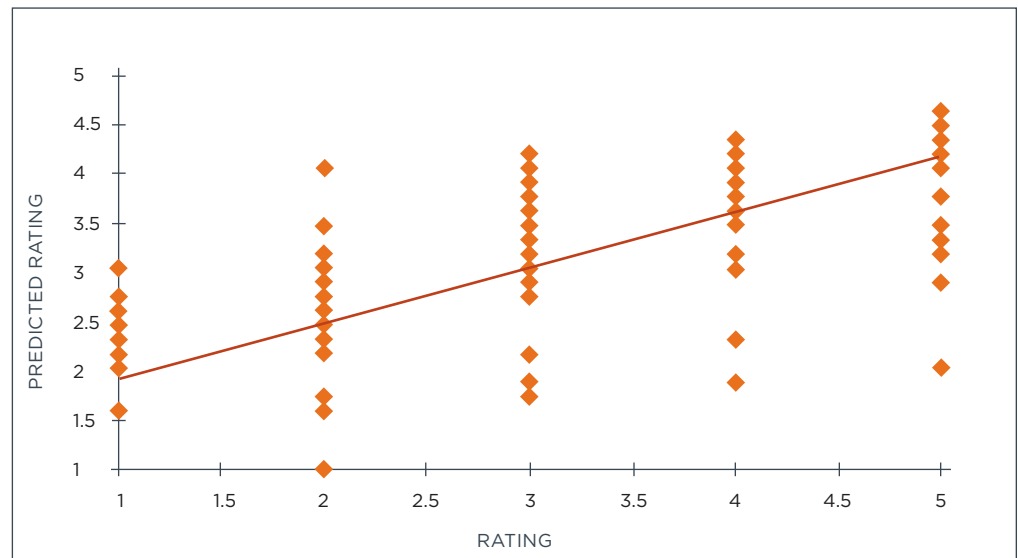


FIGURE 1: Ratings predicted by emotional tag scores.

The simple metrics used by the popular user generated content sites are not without merit. As we discovered in our previous report on Internet video (**Emotion, Engagement and Internet Video**), ratings play a critical role in the success of a video because high ratings encourage users to watch a video. Once a video is released, ratings are a low-effort way for users to share their reaction to a video with their peers. However, these ratings offer little in determining the specific qualities of the media that contribute to its success or a failure, thereby offering little assistance in the design of future digital media campaigns. Advanced measurement systems like Quantemo™ offer new levels of information for conducting media postmortems (on successes or failures) or for enhancing the media design process itself by offering deep, meaningful feedback regarding user engagement, expectations and experience.

## RECOMMENDATIONS

Measuring for emotion and engagement, especially during the design stages of a digital media campaign, is as essential for predicting the long-term viability and success of digital media efforts as traditional ratings and traffic metrics. Combining and comparing myriad measures covering the foundations of engagement (emotion, behavior, experience) offers deep insights into the specific qualities of media items that appeal to or turn off your intended audience.

## INSIGHT 2: Setting Expectations Prior to Content Viewership Encourages Positive Ratings and Engagement

The information provided by the quantitative measures of Quantemo™ (physiology, emotion scores) offer great insight into the emotional content associated with a particular video or animation at a the time of viewing, but they do not explain the stage upon which the measured emotional reactions were built. Viewers are not emotional vacuums devoid of emotional expectations and experiences prior to engaging with Internet media. In fact, the written reviews strongly suggest that the opposite is true and that users mediate their interpretation of a video largely based upon both their preexisting emotional state as well as their expectations for the video (Figure 2).

**“From the description, I expected the movie to be more positive.”**

“I had expected to see a nice video with Beatles music.”

“I didn’t find the video funny as **I was supposed to**. The ending was violent and surprised me.”

“The name of the video clip “Secrets of MySpace” is **I think used to just lure the viewers into thinking something else**. There was just one mention of the social networking website and that’s it.”

FIGURE 2: Participants express their disappointment when media fail to meet expectations.

Our prior research on **Emotion, Engagement and Internet Video** highlighted the fact that 57% of Internet video viewers intentionally watch Internet videos to change their current emotional state. Analysis of the written reviews used in this study strongly corroborates the findings of our earlier study. Viewers of user generated content are engaging in a series of calculated emotional build up and release to develop a rewarding digital media experience. Viewers use the information offered through genre type, media title and description to select the right media to match their emotional desires. Failing to deliver on the emotional content expectations (as outlined by the genre, title and description) is the most frequently cited reason for giving a low rating to a video. Supporting viewers in the creation of the right expectations for your digital media may be more important than simply getting them to watch your material.



FIGURE 3: Metadata used by viewers to establish media expectations.

Figure 3 identifies four key areas for influencing user expectations of digital media. Media title, description, genre and poster frames are all important pointers that offer information to the viewer about what your media offers them. The video in Figure 4, One to One Interactive’s 2007 Title Description Genre Poster Frame MITX award video, offers an example of how to set expectations via metadata. A breakdown of the metadata used in Figure 4 is provided below.

- **TITLE:** “OTO Gorillaz” is a short title which offers contextual information for potential viewers. OTO is an acronym for One to One interactive and Gorillaz is the name of a popular alternative rock/electronica music group, known for their postmodern urban chic and distinctive visual style in their music videos.
- **DESCRIPTION:** The description provides a history (“2007 MITX Award Video”) and context (“re: If your agency was a rock star who would it be?”) for potential viewers. Combining the title and descriptions suggests that the video is about One to One interactive and the Gorillaz and was either a recent award winner or submitted as part of an award program (implying a quality video).
- **GENRE:** The genre clearly defines the video as a “Music” video and reinforces the established association between the content of the video and the Gorillaz band.
- **POSTER FRAME:** The poster frame highlighted in Figure 2 is not about the “OTO Gorillaz” video, but it offers a window into the video it represents. Gorillaz music videos are associated with a unique animation style which is depicted in the video’s poster frame, strongly suggesting that the video itself contains or relates to the Gorillaz and their animation style.

Managing expectations is an essential part of marketing, but may be amplified by the nature of digital content and distribution. The sheer amounts of available content puts great pressure on metadata to serve as the primary means for viewers to sift through all content to that which they want. Regardless of the quality of your digital media, providing inaccurate or insufficient metadata will likely lead to mismatched expectations and a negative reaction to and rating of your content.

## RECOMMENDATIONS

The metadata describing digital media are as important as the media themselves. Given the limited amount of metadata associated with most digital media, finding a balance between enticing users to watch your media while simultaneously setting the right expectations for the media is a challenging task. Poster frames are particularly effective for relaying information about visual content in videos and animations.

### INSIGHT 3: Viewers Encourage And Respond Positively to Emotional Content

Participants in this study were extremely adept at identifying emotional content on two levels. First, participants are able to identify a wide range of discrete emotions in the media. Anger, hate, love, fear, lust, humor, shock, empathy and many other emotions were identified by participants, often in surprisingly diverse combinations within a single video or animation (Figure 4). Second, in part due to the predilection for identifying emotional content, participants distinctly identify the emotional context of the media's protagonist as well as their own emotional contexts. The relationship between the protagonist's emotional environment and that of the viewers (usually recalling a past environment similar to that of the protagonists) is the primary means by which participants interpreted and responded to the emotional content embedded in videos and animations.

“Shii [the protagonist] was feeling **sadness, longing, needing, loneliness**.... The strange cat ... caused me to feel **confusion**.... I was sad that Shii lived on the streets in a box, but the flowers were pretty and made the box and street feel **homey** and **warm**, which made me feel warm. I fully **empathized** with Shii....”

FIGURE 4: Participants are adept at identifying individual emotions.

Participants interpret emotional content in digital media by creating relationships between the emotion in the media and their own emotional state (Figure 5). The importance participants place on connecting emotional states suggests that interpreting and responding to digital media is not a simple matter of stimulus and response. Digital media designers should not always expect emotional content A to always produce emotional response B. Instead, a mediating factor of the viewer's prior emotional experience influences the interpretation of and reaction to the projected emotional content. Put another way, emotions can change quickly and dynamically over time, and effective videos integrate themselves into pleasing emotional arcs.

"It was cute and endearing how the character was doing his best to put into words how much he loved his girlfriend, and of course all he could think of are cheesy lines....  
**His frustration made me feel amused because he was trying so hard I couldn't help but chuckle.** When he was excited and sang ... that was just flat out hysterical.  
Overall it made me feel warm and fuzzy inside."

FIGURE 5: Participants emotions are negotiated with those present in the media.

Even though participants identify and contrast the projected emotional content of digital media with their emotional experiences, they still expect the media itself to help them reach a satisfying emotional conclusion by the end of their media experience. The highest rated and most engaging (in terms of QEI) videos also offered the most complex emotional content and rewarding emotional resolution. Mid to low rated and disengaging videos still offered complex emotional content but almost always failed to produce an emotional resolution in the viewers. Resolving emotional content in a manner readily apparent to the viewer facilitates high ratings and positive reactions to the media.

## RECOMMENDATIONS

Viewers anticipate and appreciate rich emotional content in digital media; however, they also expect to reach a satisfying emotional conclusion. Emotionally rich media are more likely to produce positive ratings and experience (in fact, it might be the only way to produce those results) but the emotional conclusion in the media must be clear to viewers lest they end their experience unfulfilled, ultimately reflected by poor ratings.

#### INSIGHT 4: Empathy and Appeal are Key Strategies for Promoting Positive Emotional Response and Engagement

The two most powerful motivators of positive emotional response and ratings of a video identified in this study are empathy and appeal. In terms of user generated content, expressions of empathy are statements or scenarios embedded in the media that enable and encourage viewers to personally relate the media to their own lives in a significant way. Related to empathy, appeal is the process of incorporating the inside jokes and private visual languages of microcommunities in your digital media.

“The graphics do nothing for me. I do not really like animated music videos. However, not only do I like the Beatles, but the song reminded me about how I feel about my fiancé. I feel fine with him being that I am happy but I also feel safe.... **I am likely to share this song with my partner.**”

FIGURE 6: Empathy is a powerful motivator of positive engagement.

Figure 6 displays a quote from a participant who watched a user generated music video for a popular Beatles song. The participant clearly notes that the visual style of the video was not pleasant, but the choice of music reminder her in a meaningful way of his/her fiancé. Most importantly, the empathetic connection inspired the participant to share the video with their partner. Video and animations which inspired moments of significant empathy in participants were among the highest rated and most engaging in the study. Insight 2 claims that participants engage with emotional content and few things are more emotionally powerful than recalling from and relating to our own unique and personal experiences.

Microcommunity appeal in user generated content facilitates interest and acceptance among a group of potential viewers who share similar interests, tastes, sense of humor, cultural milestones, etc. Appeal can come in many forms, including the form (media type, production characteristics, etc.) as well as the content (cultural references, humor, etc). A recent successful example of professional digital media producers both emulating user generated content and appealing to a broad base microcommunity comes from a Toyota promotion via the online game World of Warcraft.



FIGURE 7: Example ad which both emulates user generated content and appeals to the World of Warcraft community.

In 2007, Toyota partnered with World of Warcraft to create an advertisement that borrows from the popular user generated content approach of video game machinima (digital media created using video game graphics). Leveraging the dominant format of user generated content for World of Warcraft players offers the ad instant credibility among the Warcraft community. In addition to leveraging the media format, the ad contains a number of popular cultural references from the World of Warcraft community. The ad even offers self-referential humor by asserting that “trucks don’t belong in World of Warcraft.” A high level of appeal (via format and content) made the ad an instant success among World of Warcraft players. As Warcraft viewers flocked to the video and gave it positive ratings, its popularity among the broader public improved as they were encouraged to view the video (regardless of the expected content) due to the high ratings and number of views.

## RECOMMENDATIONS

The fundamental draw of user generated content is its ability to empathize and appeal to its audience in significant and personal ways. Empathy is established by connecting events and emotions in the content to that of the viewers own experiences. Appeal can occur both through the media format and by creating content rich with the inside jokes and cultural references of the microcommunity of a targeted audience. 'Cracking' the cultural code of a microcommunity requires an additional investment of resources to understand the popular vernacular and references inside the community, but when executed properly the payoff in terms of community appeal is worth the effort.

## CONCLUSION

The findings in this report offer a few design strategies and goals learned from our analysis of successful user generated content from Internet video and Flash animation portals. User generated content continue to grow in popularity and, in turn, shapes and informs viewer expectations of digital media in general. Professional digital media producers and marketers should continue to critically evaluate and measure user generated content to both inspire and inform their own work in creating digital content.

The insights outlined in this report suggest a fruitful direction for digital media marketing in the realm of emulating the practices of user generated content. Successful emulation of user generated content includes the following.

- Properly setting and exceeding viewer expectations of digital media. Failing to deliver on the conventions of the genre and inferences of the title, description and poster frames of digital content results in disengage viewers and negative ratings.
- Viewers of user generated content are both open to and demanding of rich emotional content. Emotional richness must be balanced against offering a satisfying emotional conclusion. Unresolved emotional scenarios leave viewers disappointed and unfulfilled.
- Empathy and microcommunity appeal are two common strategies for engaging viewers in user generated content. Enabling viewers to connect the emotional content and scenarios of the media with their own personal experiences promotes engaging and empathetic responses. Appealing to a communities inside jokes, vernacular and cultural references attracts them to your media and can provide the initial viewership to promote the content to a viral position.

One important difference in professional and user generated content is the ability to robustly measure and evaluate media prior to release. As demonstrated in this study, simple metrics (traffic data, 1-5 ratings, etc) are insufficient for understanding emotional response to and engagement with digital media. Professional media marketers have access to advanced evaluation techniques and systems, like OTOinsights Quantemo™ neuromarketing research lab, for performing in-depth analysis of media prior to release. Conducting media research during the creative development stages enables us to both interpret and predict responses to the media before it is released. As evaluation techniques advance, our ability to predict successful campaigns becomes more and more certain.

## REFERENCES

Comscore. (2008). Number of Online Videos Viewed in the U.S. Jumps 13 Percent in March to 11.5 Billion. <http://www.comscore.com/press/release.asp?press=2223>

Interactive Advertising Bureau. (2008). IAB Platform Status Report: User Generated Content, Social Media and Advertising – An Overview. [http://www.iab.net/media/file/2008\\_ugc\\_platform.pdf](http://www.iab.net/media/file/2008_ugc_platform.pdf)

Scherer, K. (2005). What are emotions? And how can they be measured? Social Science Information. London: SAGE Publications. Vol. 44(4), pp. 695-729.

Unruly Media. (2008). Viral Video Charts: Top 20 Viral Videos. <http://www.viralvideochart.com/?interval=year>

Verna, P. (2007). User-Generated Content: Will Web 2.0 Pay Its Way? eMarketer.

## AMPLIFYING USER ENGAGEMENT

New knowledge about human behavior brought to light by social and neuroscience has fundamentally called into question the old mental models of how advertising and marketing work. Gone is the notion that consumers make decisions in a linear think-feel-do way and behavior is guided by rational-only principles. Instead, memories, emotions, associations, and thoughts play a primary role in how individuals relate and ultimately engage with brands.

OTOinsights is a primary research offering that is breaking new ground in neuro-marketing to offer clients advanced and scientific levels of insights into how their consumers engage with them across the landscape of new media channels.

**To learn more about OTOinsights, visit [www.otoinsights.com](http://www.otoinsights.com)**



## COMPLETE ONE-TO-ONE SOLUTIONS FOR BRANDS, AGENCIES, AND PUBLISHERS

OTOinsights is a One to One Interactive company. Established in 1997, One to One Interactive is the first enterprise to assemble a complete solution for brands, agencies, and publishers executing one-to-one marketing strategies. By bringing together one of the nation's leading digital marketing agencies, the world's most comprehensive portfolio of permission marketing platforms, unique performance-based social media networks, and cutting-edge neuromarketing research techniques, the companies of One to One Interactive build informed and creative customer/constituent strategies on the belief that digital media's ability to enable engaging one-to-one dialogues is the future of marketing.

**To learn more about One to One Interactive, visit [www.onetooneinteractive.com](http://www.onetooneinteractive.com)**

OTOinsights

529 Main Street, Charlestown, MA 02129

617.425.7300

[www.otoinsights.com](http://www.otoinsights.com)

[info@otoinsights.com](mailto:info@otoinsights.com)