



A (Biometric) Day in the Life

A Cross-Generational Comparison of Media Platforms

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AUTHORS

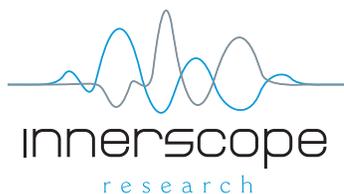
BETSY FRANK
Chief Research and Insights Officer
Time Inc.

BARRY MARTIN
Executive Director
Time Inc.

CARL D. MARCI, M.D.
CEO & Chief Science Officer
Innerscope Research, Inc.

RANDALL RULE, PH.D.
Senior Scientist/Director of Research
Innerscope Research, Inc.

EMILY HARDY WILLIAMS
Account Director
Innerscope Research, Inc.



Time Inc.

EXECUTIVE SUMMARY

With the proliferation of cross-platform media consumption, it has become increasingly difficult to know how to best reach key consumer segments.

Time Inc. and Innerscope Research, Inc. used a first-of-its-kind biometric ethnographic study to identify media usage trends and best practices for the industry's content creators. The focus was on two consumer segments: Digital Natives (consumers in their 20s who have only known a digital world during their adult lives), and Digital Immigrants (consumers in their 30s, 40s, and 50s who have adapted to the digital world during their adult lives).

The objective was to understand differences in how people from these generational groups emotionally engage with various media platforms: how much time they are spending, how their attention shifts, and their overall levels of emotional response as well as the emotional consequences of multiplatform viewing.

The results provide valuable insights about the differences in the patterns and consequences of media consumption of Digital Natives and Digital Immigrants, and give an indication of how the habits of future generations may trend over time.

The results of this study also help generate important best practices that can enable editors, content creators and advertisers to maximize communication opportunities and deliver messages when and where modern consumers are most receptive. Examples include fulfilling the need for instant gratification by immediately informing or entertaining, as well as using easy to consume, bite-sized nuggets of information. In a world where there is increasing competition for the hearts and minds of consumers, it is essential to provide emotional experiences that are deserving of their time or money.

BACKGROUND

We live in a rapidly changing world where self-identity and emotional experiences are increasingly shaped by technology. Multiplatform media use continues to increase, so marketers need to understand how to engage consumers who have more choices and more control than ever about what, when and how they consume media.

Despite these changes, quality storytelling and the emotional connections that a company's customers have with its brands and products remain very important. However,

“As a multiplatform media company, we are constantly looking at how technology affects the way our audiences consume media. Using biometrics, we were able to drill down even deeper to the emotional experience and subconscious behavior of these audiences.”

Betsy Frank
Chief Research & Insights Officer
Time Inc.

it can be a challenge to understand how today's consumers are accessing and engaging with media and brands. It is difficult for marketers to fully comprehend consumers' media usage in a natural way that is free from the biases and limitations typically associated with traditional ethnographic observation and surveys.

This study used a combination of neuroscience-based and traditional approaches, informed by biometrics as a measure of emotional response, to identify how consumers engage with each media platform in order to build best practices for content creators and advertisers. This approach allowed for a naturalistic research protocol and experience for participants.

The use of biometrics in this study is important. Many research insights are generated solely from traditional research methods that rely on participants to accurately recall their thoughts, feelings, and behaviors after the fact in order to derive meaning for a larger population. However, there are known biases to self report, memories decay quickly and conscious awareness represents only a fraction of the whole picture.

When a response is generated in the emotional centers of our brain it triggers automatic neurophysiologic responses that are not accessible to our conscious awareness. These nonconscious emotional responses are important because they define what is relevant to us with a high degree of

accuracy, without relying on conscious recall or stated responses. They tell us which information engages and which is ignored.

Innerscope's Biometric Monitoring System™ is able to measure and analyze these unstated, nonconscious emotional responses. These emotional responses direct attention, enhance memory and learning, and influence consumer behaviors.

Time Inc. and Innerscope Research, Inc. conducted a first-of-its-kind biometric ethnographic study to identify themes, trends, and best practices for navigating the modern media landscape. The goals of the study were to generate new insights in order to help content creators and advertisers maximize communication opportunities for today's consumers, with an eye toward future generations. This pilot research begins to provide a deeper understanding of both the unstated emotional and stated rational mind of the two generations of media consumers.

METHODOLOGY

Time Inc. collaborated with Innerscope Research to perform a biometric ethnographic study, monitoring the nonconscious responses of participants during nonworking hours as they naturally engaged with:

Digital Media Platforms (computers, tablets, and smartphones)

Non-Digital Media Platforms (TV, radio, magazines and newspapers)

The study was conducted in the Boston metro area and compared two consumer segments: Digital Natives and Digital Immigrants. The Natives were consumers in their 20s who have lived in the digital world throughout their adult lives, while the Immigrants were consumers in their 30s, 40s, and 50s who have adapted to the digital world during adulthood.

The analyses of the study were organized to understand changes in the time, attention and emotional responses across media platforms for these two study populations. Key questions included: How are they spending their media time? What media platforms hold their attention? Which media platforms elicit a strong emotional response? What are the emotional patterns when experiencing multiple platforms simultaneously?

The study combined three phases of data collection:

- Biometric monitoring and point-of-view (POV) glasses
- Biometrically-informed, individual, in-depth interviews
- Traditional self-report through a quantitative survey

PHASE 1: BIOMETRIC MONITORING AND POV GLASSES

Innerscope's measures are based on over five decades of well-established neuroscience research. The Innerscope Biometric Monitoring System™ uses a biometric belt to measure moment-to-moment changes in biologic indicators of emotional response including changes in heart rate, breathing patterns, skin conductance, and motion.

In addition to the biometric belt, the participants wore POV glasses (eyeglasses with a small camera embedded at the temple) that recorded what the participants were seeing. The POV glasses allowed researchers to observe the participants' behaviors after the data was collected, for a more natural, uninterrupted experience.

The biometric monitoring phase of the study included 30 participants (15 Natives/15 Immigrants). Each participant was instructed on how to use the equipment on their own. They were also given a small backpack with a notebook computer that wirelessly captured the biometric information.

The study monitored, and ultimately reported on, media platform usage during two particular parts of the day: a morning component before going to work and an evening component after leaving the workplace. A subset of the population also wore the biometric equipment for a few hours on the weekend. After the monitoring experience, all participants completed a brief questionnaire.

Approximately 300 hours of biometric data were collected. This data was time-locked to the corresponding behavioral data from the POV video footage to produce a visual timeline of participants' media activity and emotional response as they went about a normal day's activities.

Trained analysts coded the participant experience in five second increments, identifying and classifying which media platforms were used by category (i.e., digital or non-digital), and specifically what type of media platform was being used (i.e., computer, tablet, smartphone, TV, radio, magazine, or newspaper). Additionally, behavior coding captured whether media platforms were being used individually or together. Results from Phase 1 were used to inform Phase 2 and Phase 3.

PHASE 2: BIOMETRICALLY-INFORMED, INDIVIDUAL, IN-DEPTH INTERVIEWS

Participants returned a week after Phase 1 for the second phase of research — an in-depth, one-on-one, biometrically-informed interview. Innerscope utilized the individual biometric responses, behavioral coding, and participant responses from the Phase 1 brief questionnaire to identify key moments that were explored further during these interviews. Specific moments of very high emotional engagement related to media consumption were used as a stimulus for discussion to help generate qualitative insights.

PHASE 3: TRADITIONAL SELF-REPORT THROUGH A QUANTITATIVE SURVEY

The results from the biometric monitoring, behavioral coding, and one-on-one interviews were then aggregated to create insights to inform Phase 3 — a quantitative survey on attitudes, self-perceptions and media usage, administered online to a national sample of 1,790 consumers with a similar demographic and psychographic profile.

RESULTS

Over 200,000 bins of data and over one billion biometric data points were analyzed. The data analyses were divided into three categories for the purpose of understanding the differences between the two target populations and how they consume media across platforms:

- Time spent experiencing media platforms
- Attention shifts between media platforms
- Emotional response to media platforms

TIME EXPERIENCING MEDIA PLATFORMS

The behavioral data revealed new realities for media platform use.

Total Population

67% of non-work time was spent involved with some type of media platform.

Natives vs. Immigrants

Natives spent slightly more time with media platforms (71%) than Immigrants (64%).

Digital vs. Non-Digital

Natives spent significantly more time with digital platforms (49%) compared with Immigrants (22%).

The quantitative survey, informed by the biometric results, probed these findings further. Results revealed additional differences between Natives and Immigrants.

Q: *“I feel that I am just naturally drawn to digital devices.”*
More Natives agreed with this statement than Immigrants (66% vs. 48%).

Q: *“I carry my phone from room to room with me when I’m home.”*
More Natives agreed with this statement than Immigrants (65% vs. 41%).

Q: *“I prefer texting people, rather than talking to them.”*
Natives were almost twice as likely to agree with this statement as Immigrants (54% vs. 28%).

The following tables provide the daily media use results from the quantitative survey. *Notable differences between the Natives and Immigrants are highlighted in [blue](#).*

Q: Daily Breakdown of Media Use

	NATIVES %	IMMIGRANTS %
First thing when I wake up	79	75
Take when I leave home	77	59
Use every chance during the day	79	71
Have close at hand when at home	88	79
Last thing before bed	86	81
If I wake up, middle of the night	40	28

In all instances, the Natives media use exceeded the Immigrants.

Q: First thing I reach for...

	NATIVES	IMMIGRANTS
First thing when I wake up	Smartphone	TV
Take when I leave home	Smartphone	Smartphone
Use every chance during the day	Laptop	Desktop
Have close at hand when at home	Smartphone	Laptop
Last thing before bed	TV	TV
If I wake up, middle of the night	Smartphone	TV

The Natives were much more likely to first reach for their cell phone, versus the Immigrants who were most likely to first reach for the TV.

Q: Yesterday's Activities — did at least once...

	NATIVES %	IMMIGRANTS %
Checked personal email	98	96
Went online to check news or weather	81	82
Made or received calls using mobile phone	85	71
Sent or received text messages	85	52
Checked Facebook	80	57
Checked Twitter	26	14
Turned on TV to check news or weather	55	78
Made or received calls using home phone	31	57

The Natives used mobile phones and social media much more than the Immigrants; while the Immigrants' use of non-digital media (TV and home phone) greatly exceeded the Natives.

ATTENTION SHIFTS BETWEEN MEDIA PLATFORMS

Based on the behavioral analyses, Natives averaged 27 platform switches per nonworking hour, compared to only 17 switches for Immigrants. This represents a significant 35% increase in attention shifting for Natives compared with Immigrants.

In the quantitative survey, Natives self-reported being more easily bored (47% vs. 36%), easily distracted (43% vs. 34%) and easily nervous (47% vs. 33%) than Immigrants. Consistent with the behavioral data, Natives reported that they were also less likely to give their undivided attention to any single media platform.

Q: "Gets my undivided attention..."

	NATIVES (%)	IMMIGRANTS (%)
Magazine	40	41
Smartphone	38	46
Facebook	35	45
Tablet	25	33
Laptop	24	35
TV	24	27

In all instances, Immigrants were more likely to give their undivided attention.

Behavioral coding shows that Natives switch platforms 35% more often than Immigrants, suggesting a significantly shorter attention span with that population.

EMOTIONAL RESPONSE TO MEDIA PLATFORMS

Participants were biometrically monitored during their nonworking hours. The analyses of the biometric response focused on when they engaged with each media platform. In most cases, after integration with the comprehensive behavioral coding, their emotional responses were used to calculate percentile scores, revealing how responses to individual media platforms ranked relative to the emotional response to media platforms overall. When comparing single vs. multiple platform response, aggregated T-scores were used for the analyses.

Individual Media Platforms (percentile ranked)

MEDIA PLATFORM	TOTAL POPULATION	NATIVES	IMMIGRANTS
Magazine	64th	42nd	83rd
Smartphone	56th	57th	56th
Radio	55th	54th	56th
Computer	51st	52nd	50th
TV	51st	49th	53rd
Newspaper	42nd	No Usage	42nd
iPad/Tablet	39th	55th	24th

The greatest differences between the Natives' and Immigrants were seen with print (newspaper/magazine), and the iPad/Tablet.

Digital vs. Non-Digital (percentile ranked)

Natives were more emotionally engaged with digital platforms than non-digital platforms, while Immigrants showed the reverse response and were more emotionally engaged with non-digital than digital platforms.

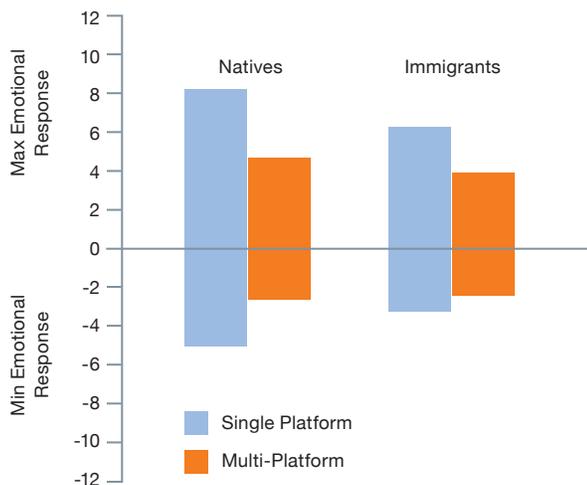
MEDIA	NATIVES	IMMIGRANTS
Digital	55th	43rd
Non-Digital	48th	60th

Single vs. Multi-Platform Use

Single platform use enhances emotional response, while multiplatform use limits the range of emotional response. The lows are not as low, but the highs are not as high either.

The analyses of single platform use (blue) compared with multiple platform use (orange) suggest that for both populations, the range of emotional responses are significantly constrained when switching between two or more platforms relative to experiencing a single platform.

AVERAGE MAXIMUM & MINIMUM BY MEDIA USE



CONCLUSIONS

This pilot study has several strengths and limitations. The strengths include the use of behavioral coding and biometric emotional response in a non-invasive, in-home monitoring of non-work media consumption across two important generations. The limitations include sample size and a lack of geographic representation to other media markets. Future studies are needed to replicate the findings. However, several interesting conclusions, recommendations and implications are put forward below.

TIME

Participants spent a lot of time with media platforms, with Natives spending slightly more time than Immigrants. Importantly, Natives spent significantly more time with digital media platforms compared to Immigrants. This appears to be driven by increased emotional response to digital platforms for the Natives. The survey results indicate that they are naturally drawn to digital platforms, likely as a result of the increased familiarity and social connectivity they offer.

ATTENTION

The behavioral coding shows that Natives switch platforms 35% more often than Immigrants, suggesting a significantly shorter attention span with that population. The survey results also suggest that Digital Natives are significantly more easily bored, distracted, and nervous than Immigrants. Compared with Immigrants, Natives also rarely concentrate on one thing at a time. No one particular media platform warrants their full attention as their switching behavior is not only more frequent, but also more fluid. Media platforms are seen as one interconnected media consumption experience, not platform versus platform.

This indicates that while Immigrants may intuitively prefer linear storytelling (clear beginning, middle, and end), Natives are more comfortable with nonlinear story experiences. More research is needed to explore this phenomenon.

EMOTION

Multiplatform use constrains emotional responses - as platform switching increases, attention and emotional response decrease. This suggests that while switching platforms may limit the number of low moments of emotional engagement, it also limits the emotional payoffs by constraining the number of high moments of emotion as well.

The results suggest that Natives appear to use media to regulate their mood more so than Immigrants. At the first sign of boredom, Natives switch their attention to another platform. The frequent switching results in low attention that limits their emotional response. Lows are not as low, but the highs are not as high. Likewise, increased attention results in increased emotional response as evidenced by the higher range and overall higher levels of emotional response when either population is focused on a single platform. Thus, Natives are capable of sustaining their attention and emotionally experiencing a single platform, they are just less likely to engage in this way. The implications of this finding are broad and suggest that the bar is high for capturing and engaging digital Natives. Once engaged, the payoff for brands has the potential to be significant. For example, according to a January 2012 comScore report, Millennials are as receptive to a powerful and differentiating “reason to buy” as other generations. Thus, when brands do capture the undivided attention of Natives, there is a potential for making a sale or creating a brand impression.

BEST PRACTICES FOR ENGAGING DIGITAL NATIVES

INSTANT GRATIFICATION

- Get to the point quickly
- Start informing or entertaining immediately
- Separate “need to knows” from “might want to knows”
- Include a clear call to action or “utility” message

MAKE COMMUNICATIONS REALLY EASY TO CONSUME

- Think frequent snacking versus sit down meals
- Bite-sized nuggets of information that allow consumers to “eat and run”, particularly visual callouts like bulleted lists and pictures with captions
- “Clear” over “clever” stories engage, because clever takes time
- Subtleties and nuance are rarely a good idea because they also take time
- Multiple access points encourage the nonlinear consumer to participate

EMOTIONAL INTENSITY FROM THE START

- Use gripping photos, other visuals, music, drama, and surprise to emotionally engage
- Without some emotionally intense attention grabber, brands will not even be given the chance to delight

KEEP THEM EMOTIONALLY ENGAGED

- Use strong creative, as the creative bar is very high, so emotional highs need to aim higher and touch deeper
- Provide something they can share with others; they like to influence and are influenced by their friends
- Be inclusive so they feel ownership of the brands they care about; give a way to share in the dialogue with the brand itself and others

PROVIDE VALUE THAT DESERVES THEIR TIME OR MONEY

- Provide value; go beyond fluff
- Justify the purchase they are considering
- Offer a service or utility element that clearly conveys what is in it for them — a new thing or information they can use, or another means of expanding beyond the initial experience

IMPLICATIONS FOR THE FUTURE

This unique study suggests differences in media engagement between two generations of Americans never seen before. This transformation is in the amount of time spent, patterns of attention and emotional consequences of modern media consumption. We are just beginning to understand the consequences of this shift in media consumption patterns in Digital Natives relative to Digital Immigrants. What is clear is that change is likely the new constant. While the results are too preliminary to predict evolutionary changes in the brains of future generations, the findings create intriguing hypotheses about the impact on the fundamental wiring of the brains of subsequent generations, born and raised in an increasingly complex technological and media rich world. The implications of these findings and these changes are broad. We will need ever more sophisticated models, informed by ever more sophisticated measurement tools and science, to continue to stay abreast of how media is consumed across platforms in America.

AUTHORS

BETSY FRANK

Chief Research and Insights Officer, Time Inc.

Betsy Frank joined Time Inc. as chief research and insights officer in April 2006. In this role, Frank oversees all of Time Inc.'s research efforts, integrating its consumer and marketing research organizations. Before Time Inc., Frank was executive vice president of research and planning for MTV Networks, a division of Viacom, where she supported the creative and business goals of the cable and film divisions by creating original consumer research strategies. Prior to MTV Networks, Frank served as executive vice president and director of strategic media resources for Zenith Media Services, the media specialist arm of Saatchi & Saatchi.

BARRY MARTIN

Executive Director, Time Inc.

Barry Martin oversees all primary research initiatives for Time Inc.'s Style and Entertainment Network, which includes People, Entertainment Weekly, StyleWatch, InStyle, Essence and People en Español. He works across both the editing and publishing sides of the business and is responsible for each brand's print and digital properties. In addition, Martin has been involved in a number of corporate research initiatives for Time Inc. that have served to define today's media experience as it relates to magazines, multi-platform storytelling and the new and evolving definition of entertainment. Prior to joining Time Inc., Martin was executive vice president of consumer insights for MediaCom where he was responsible for integrating consumer insights into the media planning and buying process. Prior to MediaCom, Martin served as vice president, research and planning at Grey Worldwide where he led their research efforts on behalf of Procter & Gamble, Kraft and Mitsubishi Motors. He was also executive vice president, director of account planning and research for two different creative boutiques where he developed research plans and advertising strategies for both existing and new business.

CARL D. MARCI, M.D.

*CEO & Chief Science Officer,
Innerscope Research, Inc.*

Dr. Carl Marci is co-founder, CEO and chief science officer of Innerscope Research. Dr. Marci is the former director of social neuroscience at the Massachusetts General Hospital, and former visiting lecturer at the Massachusetts Institute of Technology Program in Media Arts & Sciences. He received his B.A. with honors at Columbia University, his M.A. in psychology and philosophy at Oxford University as a Rhodes Scholar and then completed his M.D.

with honors at Harvard Medical School. Dr. Marci is on the faculty of Harvard Medical School and has extensive training in psychophysiology and neuroscience through two National Institutes of Health research fellowships. He has published numerous articles in peer-reviewed science journals, gives lectures nationally and internationally, and is a leader in the new fields of social neuroscience and neuromarketing.

RANDALL RULE, PH.D.

*Senior Scientist/Director of Research,
Innerscope Research, Inc.*

Dr. Randall Rule is a cognitive neuroscientist with extensive experience in the field of higher cognitive functions including memory, attention and emotional response. Prior to joining Innerscope Research, Dr. Rule spent five years with Posit Science in research and development, product validation and market development. He created brain-plasticity-based training programs and worked closely with the Clinical Trials group to rigorously test and validate products using neuropsychology, neuroimaging and electrophysiology. Dr. Rule also served as an assistant professor in the School of Medicine at UCSF where he conducted research at the Center for Imaging Neurodegenerative Diseases, using MRI and EEG to investigate the causes of disease-related cognitive decline. Dr. Rule received his Ph.D. in Cognitive Neuroscience from the University of California, Berkeley.

EMILY HARDY WILLIAMS

Account Director, Innerscope Research, Inc.

Emily Hardy Williams studied psychology and communications at Boston College, where she graduated Magna Cum Laude and a member of the Phi Beta Kappa honor society. Williams worked as a lab assistant under the direction of Dr. Lisa Feldman Barrett, a leading researcher in emotional experience and the structure of affect. She gained valuable media experience working in the on air promotions department for NBC Universal. Williams has worked with Innerscope Research since June 2008, during which time she has served as an integral part in the success of several client projects.

CONTACT INFORMATION

Innerscope Research
98 North Washington Street, 2nd Floor
Boston, MA 02114
(P) 617.904.0555
(F) 617.812.4695

www.innerscope.com