

USA TOUCHPOINTS – THE WHO, WHAT, WHEN, WHERE AND HOW OF CROSS-PLATFORM MEDIA MEASUREMENT

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Abstract

In August of 2010 the Coalition for Innovative Media Measurement (CIMM) selected the Media Behavior Institute (MBI) as its partner to develop an innovative, cross-media measurement study – USA TouchPoints. Founded on the Institute of Practitioners in Advertising (IPA) TouchPoints in the U.K., USA TouchPoints is designed to measure cross-channel media consumption (television, print, radio, internet, word-of-mouth, etc.), simultaneous non-media daily life activities, the social and physical environment in which media use and life activities occur, and the panelist's mood and attitude. Additionally, USA TouchPoints is designed to facilitate the integration of multiple audience measurement currencies (e.g. television, print, internet, etc.), and as such to step beyond simple channel planning into more detailed and precise media analysis, planning and buying.

Introduction

In August of 2010 the Coalition for Innovative Media Measurement (CIMM) selected the Media Behavior Institute (MBI) as its partner to develop an innovative, cross-media measurement study – USA TouchPoints. In part modeled on the U.K.'s IPA TouchPoints study, USA TouchPoints has three primary ambitions:

- 1) Understand cross-media consumption behaviors
- 2) Understand the social and psychological contexts in which such behaviors occur
- 3) Provide a foundation for the integration of a variety of primary audience ratings currencies to enhance both channel and media planning and buying

Given the broad ambitions of this initiative, the employment of relatively new technology to gather media behavior and life context information and the extent of the integration of audience and related currencies, 2010/2011 was very much a development and evaluation period. Nevertheless, the USA TouchPoints data is proving to be a useful and informative media measurement resource.

USA TouchPoints – Core Design and Methodology

The USA TouchPoints' panel of approximately 1,000 was selected from GfK MRI's Fall 2009 nationally representative (48 contiguous states) sample of 26,568 persons aged eighteen years or older. Because USA TouchPoints relies on an iPhone-based electronic diary for much of its data collection the USA TouchPoints panel was limited to GfK MRI respondents who were 1) 18-64 years of age, 2) English language capable and 3) had completed both GfK MRI's personal interview and the consumer questionnaire. As this 2010/2011 initiative was designed as a test and evaluation the panel size of ~1,000 was deemed adequate. Assuming the success of this test initiative, over the longer term a GfK MRI based USA TouchPoints panel of 5,000 is envisioned.

While differing in a number of details from the IPA TouchPoints sample design, USA TouchPoints broadly adopts the same sample principle – base its sample on a larger media measurement related sample. For USA TouchPoints this design affords:

- 1) The convenient use of a high quality nationally projectable area probability sample
- 2) A respondent pool with an existing relationship to an audience measurement service, (potentially) enhancing response and cooperation rates

- 3) Existing consumer behavior and attitude measures useful for targeting and related analyses
- 4) Existing magazine audience ratings

At the core of USA TouchPoints' data collection method is a 10-day iPhone-based electronic media and life context diary. The iPhone-based diary software was designed for ease of use by the panelist with extensive use of visual response options and navigation prompts. Moreover, the iPhone-based system was convenient for the panelist to carry, prompted the panelist to make timely entries and provided an essentially real-time facility to monitor panelist cooperation (Figure #1). As a result, the compliance rates were very high.

Figure #1 – iPhone Electronic Diary



As the electronic diary imposed a modest burden on the panelist a relatively extensive array of media and life context measures were able to be captured:

- 1) 14 Locations (e.g. Home, Work, Automobile, etc.)
- 2) 9 Social Settings (e.g. Alone, With Friends, etc.)
- 3) 19 Life Activities (e.g. Working, Eating, etc.)
- 4) 54 Broadcast and Cable Television Networks
- 5) 11 Television Program Genre
- 6) 11 Radio Program Formats
- 7) 16 Magazine Genre
- 8) 8 Local and National Newspapers
- 9) 15 Internet Activity Types and Site Genre
- 10) 13 Emotional States

As the USA TouchPoints panel included only 1,000 of the GfK MRI Fall 2009 respondent base and so as to preserve the native incidence levels for GfK MRI consumer and related measures, a critical element of the methodology was the ascription of the USA TouchPoints data to the comparable GfK MRI Fall 2009 respondent base. (While not strictly the same procedure as adopted in the IPA TouchPoints methodology wherein the TouchPoints data is ascribed onto the BARB (U.K. Broadcaster’s Audience Research Board) Establishment Survey, the goals are broadly similar, i.e. to have a adequately sized sample on which to fuse media currency data and to attempt to preserve core incidence levels.)

Of the approximately 1,000 GfK MRI USA TouchPoints panelists 961 had complete diary data for at least each of the seven days of the week although not necessarily for seven consecutive days out of the full ten day diary period. These 961 panelists served as the source of the TouchPoints particular data for the primary USA TouchPoints database (the full ~1,000 TouchPoints panelists could independently serve as the foundation for some ad hoc analyses). Hence, the first step of creating the USA TouchPoints database was the ascription of the data from the base 961 to the full GfK MRI sample. As the USA TouchPoints panel was by design only Age 18-64 and English language capable the corresponding GfK MRI Fall 2009 sample included only 21,064 of the total 26,567 respondents. So as to insure that the original GfK MRI incidence levels were preserved both GfK MRI panelists who completed the GfK MRI’s consumer questionnaire and those who did not and thus had their consumer data otherwise ascribed as a standard part of GfK MRI’s processing were included.

Given that the ascription donor/recipient rates were inevitably high and given the range of different measures (media and non-media) which would reside in the final USA TouchPoints database an extensive array of demographic and media-related measures were considered for the ascription. Further, their relative import was critical insofar as most of the matching would be incomplete, i.e., on only some of the common measures. Finally, while all GfK MRI Fall 2009 respondents, both TouchPoints panelists (donor) and the balance (recipients) have common demographic measures on which to match, only the TouchPoints panelists have TouchPoints media and related measures.

To identify the critical ascription matching demographic variables a multi-stage analysis was performed. At the core was a series of step-wise regressions:

- 1) Develop a set of 12 media-specific measures based on the volume of consumption of each medium, e.g., Television, Radio, Print, Internet, etc. These aggregate measures serve as the dependent variables in the regressions.
- 2) Identify a variety of demographics (25 in total) to serve as the independent variables in the regressions (e.g, Age, Household Income, Presence of Children, Education, etc.).
- 3) Separately for Males and Females execute a step-wise regression for each of the 12 media-specific dependent variables with the 25 demographics as the independent ones.
- 4) Select the most discriminating demographics from the step-wise regressions for use as matching variables in the ascription.

The relative import of these demographic variables is contained in Table #1.

Table #1 – Relative Import of Demographic Matching Variables

| Demographic | Relative Import |
|--------------------|------------------------|
| Age | 10 |
| Education | 9 |
| Employment Status | 8 |
| DVD | 7 |
| Household Size | 6 |
| Access Internet | 5 |
| Own a Car | 5 |
| Principal Shopper | 5 |
| Household Income | 4 |
| Own a Dog | 4 |
| Number of TV Sets | 4 |
| Own Video Game | 4 |
| Have Cable TV | 3 |
| Own DVR | 3 |
| Married | 3 |
| Own a Computer | 3 |

As noted above (and to restate the obvious), while all GfK MRI Fall 2009 respondents (TouchPoints and non-TouchPoints) have common demographics, only the USA TouchPoints panelists have the TouchPoints specific media measures. Hence, a more extensive analysis of the relationship between TouchPoints media measures and potentially comparable media measures available for all (TouchPoints and non-TouchPoints) MRI Fall 2009 respondents was required as the first step in developing a set of media matching variables to supplement the demographic measures in the ascription process.

Albeit in different ways, both USA TouchPoints and GfK MRI measure television viewing and radio listening by dayparts, television viewing by network and radio, magazine and internet by genre. With that said, these measures differ with respect to a variety of temporal and other factors. Hence, an analysis was performed on the USA TouchPoints panelists relating their TouchPoints media measures to their broadly comparable GfK MRI Fall 2009 native media measures.

Table #2 lists some summary correlations for a sample of these broadly comparable media measures.

Table #2 – USA TouchPoints / GfK MRI Fall 2009 Media Correlations

| Media | Correlation (r-square) |
|--|-------------------------------|
| Total Radio Listening | 0.38 |
| Morning Drive Radio Listening | 0.45 |
| Average Among 15 Radio Genre | 0.25 |
| Total Television Viewing | 0.48 |
| Prime Time Television Viewing | 0.33 |
| Average Among 43 Television Networks | 0.25 |
| Average Among 13 Magazine Genre | 0.11 |
| Average Among Parenting Titles | 0.19 |
| Average Among News Titles | 0.06 |
| Average Among Shelter Titles | 0.06 |
| Average Among Internet Site Categories | 0.25 |
| E-Mail | 0.50 |
| Music Sites | 0.14 |
| Sports Sites | 0.14 |

That these correlations are neither uniform nor uniformly high is not unexpected given some of the fundamental measurement differences as summarized in Table #3

Table #3 – USA TouchPoints / GfK MRI Fall 2009 Media Measurement Differences

| Media | USA TouchPoints | GfK MRI Fall 2009 |
|--------------|---|--|
| Television | Network by Half Hour for 7 (10) days | Cable Networks Last 7 Days and Last 30 Days |
| Television | Half Hour by Half Hour for 7 (10) days | Half-Hours by Daypart for Yesterday, Last Saturday and Last Sunday |
| Radio | Format by Half Hour for 7 (10) Days | Station (recoded to format) by Daypart for Yesterday, Last Saturday and Last Sunday |
| Magazine | Magazine Genre by Half Hour for 7 (10) Days | Magazine Titles for Six Month Screen and Read in Last Issue Interval |
| Magazine | Magazine Genre by Half Hour for 7 (10) Days | Frequency of Reading for Last Six Month Period |
| Internet | Internet Site Genre | ~50 Internet Activities and ~60 Individual Internet Sites for Yesterday and Last 30 Days |

While the relationships between the native GfK MRI media measures (common to all GfK MRI respondents) and the USA TouchPoints ones were not singularly strong they 1) were positive and 2) in the case of any sort of data imputation to produce a media related database the use of media related matching variables is critical. Hence, the question was not of whether or not to employ the native GfK MRI media measures in the ascription process, but rather which ones and at what strength. Stated more precisely, the challenge is one of, given the enormous number of potential media related matching variables available in the GfK MRI Fall 2009 database and the desirability of matching on a fairly broad range of these media measures, given the limited number (961) of USA TouchPoints panelists as donors to the ~20,000 non-TouchPoints GfK MRI Fall 2009 respondents what media measures should be employed?

To address this challenge a factor analysis was performed on the GfK MRI Fall 2009 media data (television, print, radio, internet, etc.). Factor analysis is particularly well suited to this task as it 1) identifies the strong underlying (latent) variables among a diverse set of manifest measures, 2) offers measures allowing for the identification and use of a tractable number of variables and 3) offers metrics with respect to the explanatory power of this reduced set of latent variables.

Chart #1 and Table #4 show the Eigenvalues and interpretations of the first twenty factors.

Chart #1 - Initial Media Factor Summary

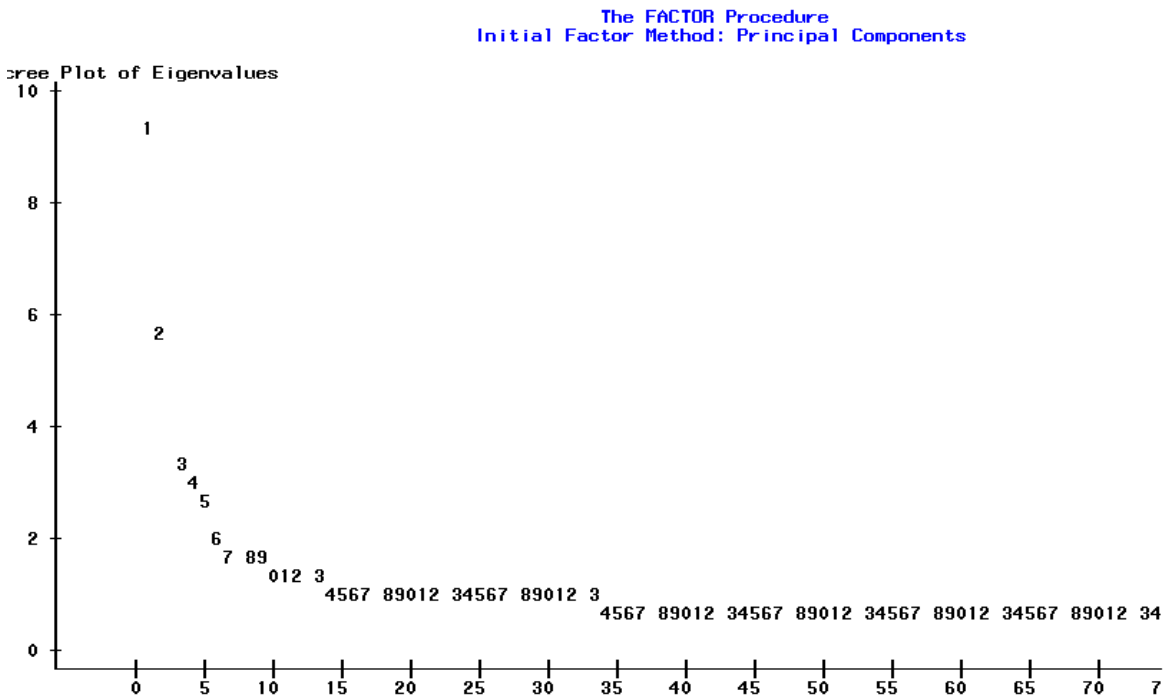
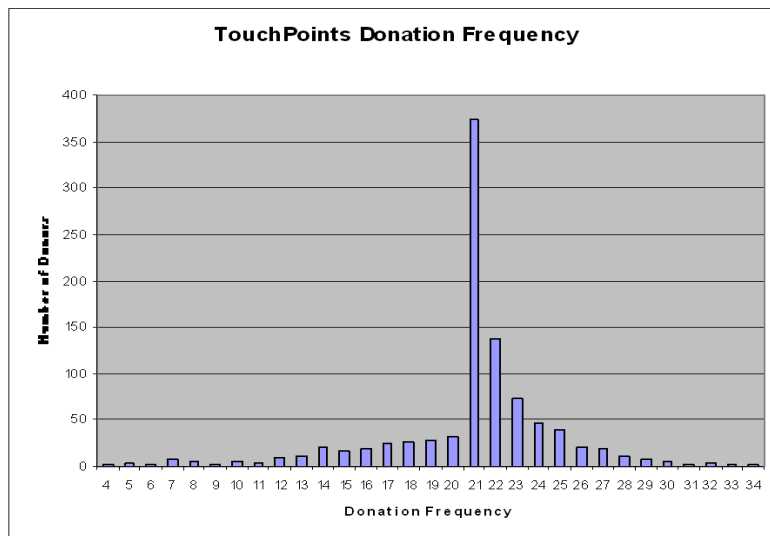


Table #4 – Top Twenty Media Factors

| Factor | Eigenvalue | Manifest Variables |
|---------------------------------|------------|--|
| Internet Use | 9.26 | Heavy Internet Quintile, Wide Variety of Internet Use |
| Television - Movie | 5.68 | AMC, FX, TBS, TNT, USA, etc. Networks |
| Home/Food/Fashion | 3.28 | Food, Fashion, Health and Home Magazines |
| Television - Kids | 3.04 | Disney, Cartoon Network, Nick, etc. |
| Television - News | 2.57 | CNBC, CNN, Fox, HLN, MSNBC |
| Television - Learning | 1.98 | Animal Planet, Discovery, History |
| Television - Womens | 1.79 | Hallmark, Lifetime, Oxygen |
| Sports | 1.74 | ESPN, ESPN2, Sports Magazines and Radio |
| Television - Entertainment | 1.67 | E, MTV, VH1, |
| Radio - News & Talk | 1.45 | Radio Genre News and Talk |
| Internet Entertainment | 1.30 | Internet Games, Music & Radio, TV and Video, Messaging |
| Magazines - Male Interests | 1.27 | Auto, Business, Computer, Mens |
| Television - Homework | 1.22 | HGTV, Food |
| African American Oriented Media | 1.13 | BET, Urban Radio |
| Country | 1.12 | CMT, Country Radio |
| Radio - Contemporary | 1.09 | Adult Contemporary, Alternative Rock, Hit, Rock |
| Radio - Public & Classical | 1.07 | Public and Classical Music |
| Radio - Oldies | 1.04 | Oldies |
| Radio - Latin | 1.02 | Latin and Other |
| Radio - Religious | 1.00 | Religious |

The ascription matching process controlled explicitly for Sex and employed a weighted Euclidian distance measure based on the identified demographic and media factor variables. Moreover, so as to insure a relatively proportional donation of USA TouchPoints data to non-TouchPoints GfK MRI Fall 2009 respondents an additional penalty weight was assigned accounting for donation rate. Chart #2 is a histogram summarizing the donation rates.

Chart #2 – Donation Rates of USA TouchPoints to non-TouchPoints GfK MRI Respondents



As is evident from Chart #2 excessive rates of donation were minimized and the mean was as expected given 961 TouchPoints donors and 20103 non-TouchPoints recipientsw:

- 1) Maximum donation rate – 34
- 2) Minimum donation rate – 4
- 3) Mean and median donation rates – 21

As expected the distributions of the USA TouchPoints data once fully ascribed into the full GfK MRI Fall 2009 dataset were nicely preserved. Table #5 shows some of these distributions.

Table #5 – Native TouchPoints and Fully Ascribed TouchPoints Media Measures

| | Min | 1st-Q | Median | Mean | 3rd-Q | Max |
|---|-----|-------|--------|-------|-------|-----|
| Television Half Hours | | | | | | |
| TouchPoints | 0 | 21 | 41 | 47.95 | 66 | 231 |
| Total | 0 | 21 | 41 | 48.43 | 67 | 231 |
| Radio Half Hours | | | | | | |
| TouchPoints | 0 | 5 | 15 | 22.75 | 30 | 178 |
| Total | 0 | 5 | 15 | 22.95 | 30 | 178 |
| Internet Half Hours | | | | | | |
| TouchPoints | 0 | 3 | 13 | 22.12 | 32 | 140 |
| Total | 0 | 3 | 12 | 21.83 | 31 | 140 |
| Audio Half Hours | | | | | | |
| TouchPoints | 0 | 0 | 2 | 8.673 | 10 | 119 |
| Total | 0 | 0 | 2 | 8.514 | 10 | 119 |
| Computer Applications Half Hours | | | | | | |
| TouchPoints | 0 | 0 | 4 | 18.18 | 30 | 135 |
| Total | 0 | 0 | 3 | 18.01 | 30 | 135 |
| Communicating Half Hours | | | | | | |
| TouchPoints | 0 | 61 | 111 | 105.9 | 153 | 219 |
| Total | 0 | 59 | 109 | 104.9 | 152 | 219 |
| DVD Half Hours | | | | | | |
| TouchPoints | 0 | 0 | 1 | 5.086 | 6 | 108 |
| Total | 0 | 0 | 1 | 5.04 | 6 | 108 |
| DVR Half Hours | | | | | | |
| TouchPoints | 0 | 0 | 0 | 4.917 | 5 | 121 |
| Total | 0 | 0 | 0 | 4.725 | 4 | 121 |
| GAME Half Hours | | | | | | |
| TouchPoints | 0 | 0 | 0 | 2.61 | 1 | 95 |
| Total | 0 | 0 | 0 | 2.545 | 1 | 95 |
| Mobile App's Half Hours | | | | | | |
| TouchPoints | 0 | 0 | 1 | 4.719 | 3 | 110 |
| Total | 0 | 0 | 1 | 4.64 | 3 | 110 |
| Reading Half Hours | | | | | | |
| TouchPoints | 0 | 0 | 2 | 6.182 | 7 | 165 |
| Total | 0 | 0 | 2 | 6.15 | 7 | 165 |
| VOD Half Hours | | | | | | |
| TouchPoints | 0 | 0 | 0 | 1.177 | 1 | 36 |
| Total | 0 | 0 | 0 | 1.135 | 1 | 36 |

Integrating Media Currencies - Overview

The fully ascribed USA TouchPoints database has substantial value with respect to channel planning, cross media allocation, messaging and targeting. Anecdotally from conversations with IPA TouchPoints sponsors and users in the U.K. much of the use and value of the initial two releases of that database were derived from the analysis of the base IPA TouchPoints measures. With that said, in both the U.K. and the U.S. the value of having audience currency data incorporated with TouchPoints-specific measures is of substantial import. Integrating TouchPoints with audience currency data for various media more fully integrates TouchPoints analysis into the entire media planning and buying processes thereby realizing greater value from all of these various research investments.

In the U.K. a wide variety of additional media audience measurement has been incorporated into their TouchPoints database (e.g., television, radio, magazines and national and regional newspapers, outdoor, cinema, etc.). As the initial USA TouchPoints product is developmental and as magazines and national newspaper data from GfK MRI Fall 2009 are intrinsic to USA TouchPoints, the scope of the initial media audience databases to be integrated is comparatively limited. The two initial

media audience databases are Nielsen Online’s NetView (internet) and Nielsen’s National PeopleMeter (national television), with some additional “word of mouth”/influential measures from the Keller-Fay Group’s TalkTrack product also being integrated. (At the time of this writing (August, 2011) some preliminary discussions are being held between CIMM/MBI and Arbitron (radio) and separately Rentrak (digital set-top box television).)

Additionally it is important to note that the nature of the integration of the media currencies into USA TouchPoints is somewhat different than that of the U.K. TouchPoints offering. Generally, the U.K. initiative has integrated media currency data by calibrating using probabilities the native TouchPoints half hour by half hour levels to those of the currency. The CIMM/MBI USA TouchPoints coordinating committee considered this approach but ultimately chose one yielding more detailed and specific integrated currency measures. In particular, internet sites from Nielsen Online NetView and television program level data from Nielsen National PeopleMeter were chosen for integration. Three general reasons were offered for adopting this strategy:

- 1) There are already existing fusion-based products in the marketplace offering integrated television program and internet site level data with extensive consumer behavior and print measures (e.g., Net/MRI from Nielsen Online and GfK MRI and NPM/MRI from Nielsen and GfK MRI). For USA TouchPoints to offer only adjusted half hour data would thus, it was felt, place it at a relative disadvantage.
- 2) As stated above, as program and site level data are extensively used in the media planning and buying processes incorporating such measures into USA TouchPoints more thoroughly integrates this service with these important processes.
- 3) Certain audience measurement databases are not designed to yield half-hour by half-hour levels (i.e., Nielsen Online’s NetView offers monthly unique visitor, page view and duration as its intrinsic metrics) and are thus not suitable for half-hour by half-hour calibration. Moreover, even if reconfiguring such data sources was possible the resulting half-hour by half-hour metric in USA TouchPoints would be incomparable with similar measures used in the planning and buying processes.

Integrating Media Currencies – Nielsen Online NetView

Nielsen Online’s NetView internet audience service is available through a variety of different data access and analysis systems and offers a variety of site (and aggregated site) metrics on a monthly (and for some larger sites also weekly) basis. The particular dataset chosen for integration with USA TouchPoints was for November 2010 as the CIMM/MBI USA TouchPoints coordinating committee felt that of the five months (October 2010 – February 2011) over which the TouchPoints diary was fielded it was the most typical month with respect to media consumption.

The November 2010 NetView database contains duration and page view data for approximately 30,000 sites and aggregated internet entities and from them can be derived unique visitor levels. For the integration of NetView into USA TouchPoints only the largest approximately 5,000 sites and aggregations were included. The NetView panel includes persons age 2 and over, but for the purposes of the USA TouchPoints integration only NetView panelists age 18 through 64 (~95,000 panelists representing a combined home and work internet universe of ~140,000,000) were employed.

The fusion of data from ~95,000 NetView panelists with the ~18,000 fully ascribed USA TouchPoints panelists who had internet behavior for their seven (7) day diary period posed several practical and theoretical challenges. While the projected internet universes for NetView and USA TouchPoints were not exactly the same (~140,000,000 and ~150,000,000 respectively), they were roughly comparable and given the dissimilarity of methodologies really quite close. In such a case the use of split-weight fusion whereby datasets are matched so as to account for individual projection weights would handily deal with this circumstance. However, split-weight fusion generates a set of new records possessing roughly the total number of records from the two contributing data sources and having fractional projection weights. Because the TouchPoints end-user analysis systems were not designed to deal with this circumstance, split-weight fusion was impractical.

The remaining fusion alternatives generally involved one-to-one matching, i.e., a single TouchPoints panelist being matched with a single NetView panelist. Hence, under such a scheme only some NetView panelists (~18,000) are able to be matched and as the distributions for internet metrics, demographics, etc are not identical between the two data sources a choice must be made:

Attempt to preserve as much as possible the NetView distributions in the final integrated dataset or match NetView with TouchPoints such as to minimize the difference on the match measures?

Considered from the users’ perspective the question becomes:

“When you analyze fused NetView data in Touchpoints do you want to see levels and relationships which more resemble NetView’s or TouchPoints’?”

The decision was to fuse NetView into TouchPoints using the best match while recognizing that the intrinsic NetView levels would not necessarily be preserved. Broadly the rationale was that this approach would best preserve the TouchPoints cross-media and internet to life context relationships with the enhanced NetView site measures.

The fusion of NetView into USA TouchPoints employed a set of demographic and internet centric matching measures. The matching was explicitly controlled within 18 mutually exclusive and exhaustive demographic groups jointly defined by Sex (Male/Female), Age (18-30, 31-50 and 51-64) and tercile ranking of a factor derived from Education and Household Income. Within each of these demographic categories NetView and USA TouchPoints panelists were matched using a weighted distance metric on the variables defined in Table #6.

Table #6 – NetView and TouchPoints Matching Variables and Weights

| Matching Measure | Distance Weight |
|--|-----------------|
| Employment Status – Employed/Not Employed | 2 |
| Age in Years | 0.2 |
| Hispanic / Not Hispanic | 2 |
| African American / Not African American | 2 |
| Four Census Regions | 1 |
| Projection Weights (Projection Weight difference / 5000) | NA |
| 17 Standardized Internet Categories | 1 |

Additionally, so as to control the donation rates a substantial penalty added to the distance measure for those NetView panelists who had previously been matched with USA TouchPoints panelists.

The 17 standardized internet category measures were created by standardizing (mean of 0, standard deviation of 1) the number of individual half-hours over the seven days of the USA TouchPoints diary period and doing a similar standardization of the NetView category data. Because a few individual USA TouchPoints internet categories related to more than a single NetView category the number of internet categories for matching was larger than the intrinsic USA TouchPoints number.

Using the projection weights from NetView and USA TouchPoints as part of the matching process served to control somewhat the integrated NetView site incidence levels. Additionally the NetView projection weights within the 18 demographic control groups were scaled up by a factor of approximately 6 so as to equalize the proportionality of the individual projection weight with those of USA TouchPoints.

Table #7 lists the correlations for the internet matching variables from the final fusion matching. Some of the variables with the lower correlation, e.g. E-Mail and Instant Messaging, most likely result from NetView reporting of only home and/or work computer use whereas TouchPoints also includes mobile device use, etc. Also, TouchPoints panelists may be reluctant for security-related reasons to report banking and finance related activities in the diary, whereas NetView passively meters this behavior.

Table #7 – Correlation for Internet Matching Variable from the Fusion

| Internet Sub-Category | NetView |
|--------------------------------|----------------|
| E-Mail | 0.2265 |
| Search | 0.4200 |
| Employment/Business | 0.5749 |
| Instant Messaging | 0.3663 |
| Portals | 0.7509 |
| Shopping | 0.6111 |
| News and Current Events | 0.7202 |
| Weather | 0.6807 |
| Sports | 0.7251 |
| Travel | 0.7909 |
| Mass Merchandizer | 0.7449 |
| Banking and Finance | 0.2249 |
| Music | 0.6954 |
| Television | 0.6545 |
| Video and Movies | 0.7233 |
| Online Gaming | 0.7696 |
| Special Interest News | 0.5617 |

Integrating Media Currencies – Nielsen National PeopleMeter

The Nielsen Company's National PeopleMeter television ratings service offers a variety of television audience viewing measures. For the integration into USA TouchPoints Nation PeopleMeter data for November 2010 (calendar month) at the individual program level using Live +7 (viewing to the program from the time of the original broadcast through the next seven days) viewing minutes projected using the panelists' average daily weight across the month was employed.

As noted previously the USA TouchPoints diary captures half-hour by half-hour viewing for 54 broadcast and cable networks over a seven day period. For the purposes of the fusion match Nielsen provided a database for November 2010 in a comparable format, i.e., network by day of week by half-hour. Providing over 18,000 (54 networks * 7 days * 48 half-hours) possible television measures a primary challenge was identifying a tractable but nevertheless significant set of television metrics on which to match USA TouchPoints and National PeopleMeter panelists. Moreover, the National PeopleMeter database measured viewing minutes within the half-hour while USA TouchPoints simply captured viewing as a dichotomous measure (Yes/No).

So as to 1) reconcile the viewing measures and 2) create a tractable number of common variables for use in the fusion matching the following steps were employed:

- 1) Create a set of twelve (12) day-of-week and time related dayparts similar to but more aggregated than the conventional set of 34 dayparts routinely employed in television measurement and analysis in the U.S..
- 2) Separately for USA TouchPoints and National PeopleMeter on a individual network basis sum the half-hour by day viewing into these dayparts thus creating 648 (54 networks * 12 dayparts) aggregated common viewing variables. This somewhat reduced the number of potential television matching variables.
- 3) As the aggregation of viewing minutes for Nation PeopleMeter and number of half-hours with viewing for USA TouchPoints yielded different scales for each of these sets of matching variables each was standardized to a mean of 0 and a standard deviation of 1. Further, to preserve consistency with the Nielsen Online NetView fusion this standardization was performed within each of the eighteen mutually exclusive and exhaustive Age/Sex/HHI-Education groups.
- 4) Now standardized, the two datasets (National PeopleMeter and USA TouchPoints) each with 648 network dayparts were merged and this combined dataset was factor analyzed. As with the standardization the factor analysis was performed separately for each of the eighteen Age/Sex/HHI-Education groups. The top fifty (50) factors were retained and the dataset separated into a donor (National PeopleMeter) and recipient (USA TouchPoints) datasets for employment in the matching.

The result of this process were USA TouchPoints and National PeopleMeter datasets with 1) a tractable number of matching variables, 2) common metrics on which to perform the matching, i.e., the factor loadings, and 3) measures of the relative import of each of these factor analysis derived variables, i.e., the factors' eigenvalues. (Although different in detail, the integration of a number of the media currencies into the U.K. TouchPoints involves a similar factor analytic approach for many of the same reasons as stated above.)

In addition to the television factor variables a set of demographic and geographic variables were also used in the matching process. This set included: Race and Ethnicity, English/Spanish Language Preference, Census Division and Region, Occupation and Employment Status, Presence of Children by Age and Household Size, Own a Cat/Dog, Number of Television Sets, Own a Computer and Internet Access, Cable Service, etc. As with the USA TouchPoints and Nielsen OnLine NetView fusion the projection weights were also included in the matching scheme. While extensive, these demographic/geographic matching variables have historically proven to be important when integrating television-related datasets and particularly television datasets also including consumer measures, etc.

Table #8 lists the correlations for the television matching variables between the National PeopleMeter donors and the U.S. TouchPoints recipients for the final matched donor/recipient database for both all TouchPoints panelists and one of the Age/Sex/HHI-Education control groups.

Table #8 – Correlations on Television Factor Matching Variables

| Factor | Total TouchPoints | Women / 31-50 /Highest HHI-Education Group |
|---------------|--------------------------|---|
| 1 | 0.202 | 0.220 |
| 2 | 0.237 | 0.449 |
| 3 | 0.236 | 0.158 |
| 4 | 0.254 | 0.107 |
| 5 | 0.348 | 0.368 |
| 6 | 0.188 | 0.537 |
| 7 | 0.265 | 0.490 |
| 8 | 0.243 | 0.304 |
| 9 | 0.288 | 0.107 |

| | | |
|----|-------|-------|
| 10 | 0.231 | 0.479 |
| 11 | 0.341 | 0.129 |
| 12 | 0.354 | 0.400 |
| 13 | 0.302 | 0.357 |
| 14 | 0.311 | 0.424 |
| 15 | 0.299 | 0.473 |
| 16 | 0.347 | 0.318 |
| 17 | 0.297 | 0.305 |
| 18 | 0.303 | 0.362 |
| 19 | 0.296 | 0.394 |
| 20 | 0.289 | 0.317 |
| 21 | 0.279 | 0.428 |
| 22 | 0.220 | 0.588 |
| 23 | 0.339 | 0.312 |
| 24 | 0.272 | 0.130 |
| 25 | 0.283 | 0.509 |
| 26 | 0.296 | 0.346 |
| 27 | 0.243 | 0.112 |
| 28 | 0.283 | 0.371 |
| 29 | 0.219 | 0.080 |
| 30 | 0.222 | 0.385 |
| 31 | 0.225 | 0.278 |
| 32 | 0.234 | 0.277 |
| 33 | 0.198 | 0.357 |
| 34 | 0.215 | 0.434 |
| 35 | 0.244 | 0.182 |
| 36 | 0.222 | 0.446 |
| 37 | 0.257 | 0.148 |
| 38 | 0.244 | 0.361 |
| 39 | 0.189 | 0.076 |
| 40 | 0.212 | 0.296 |
| 41 | 0.237 | 0.146 |
| 42 | 0.244 | 0.185 |
| 43 | 0.246 | 0.306 |
| 44 | 0.202 | 0.336 |
| 45 | 0.245 | 0.049 |
| 46 | 0.268 | 0.374 |
| 47 | 0.260 | 0.397 |
| 48 | 0.239 | 0.269 |
| 49 | 0.304 | 0.304 |
| 50 | 0.329 | 0.349 |

While the correlation coefficients might appear to be low in some cases these levels are not surprising insofar as:

- 1) There are a large number of television variables on which to match.
- 2) In addition to these television variables there are a substantial number of demographic/geographic variables on which to match as well as the projection weights.
- 3) For USA TouchPoints there were really only 961 different patterns of television viewing derived from the original panelists. This is further reduced by controlling for the eighteen Age/Sex/HHI-Education control groups. Thus, in combination with the control for the number of times an individual National PeopleMeter panelist could be matched, the matching on the television measures, while at times strong could not be uniformly so.

USA TouchPoints In Action – Dimensionalizing The Daily Life of Metro Moms

USA TouchPoints is a rich, multi-dimensional research study of American consumers' daily lives. The promise of USA TouchPoints is that creative messages can be fine-tuned to relevant, precise situations and integrated marketing communications plans can be designed to reach consumers in the right place at the right time and when they're in the right frame of mind.

Let's see USA TouchPoints in action. Let's say we were interested in knowing how to reach moms, but not all moms, only those moms who live in urban centers of the US. USA TouchPoints provides very unique insights into her behavior throughout the day and across the course of a week. Yes, advertisers can get this kind of information through standard ethnography, which is expensive and typically done among small samples. But we believe USA TouchPoints can offer the same level of detailed on a more quantifiable, projectable and reliable basis.

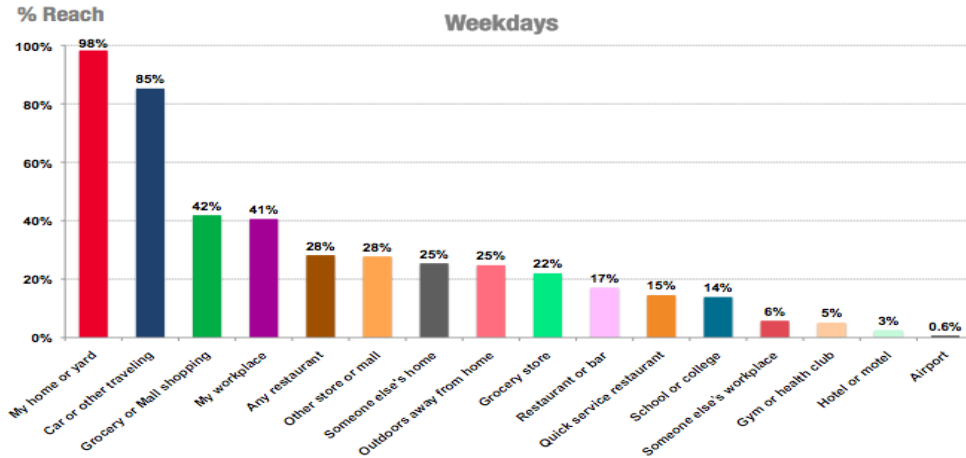
Here is a week in the life of a Metro Mom – this is actual data drawn from her eDiary entries. She's busy picking up the kids, working, meeting up with friends, leading a very full, active life. TouchPoints will allow us to get this level of understanding about the entire group of Metro Moms instead of just this one.



Location

Using USA TouchPoint’s contextual data, we can identify where metro moms are most likely to be on any given weekday. It’s a basic analysis – where do people spend their time? We see in the chart below, that metro moms can be found at home, unsurprisingly, and in the car. In fact, Twice as many metro moms can be found in the car than at work or shopping. It’s one aspect of American life we tend to forget.

Where Do Metro Moms Spend Most Of Their Time?

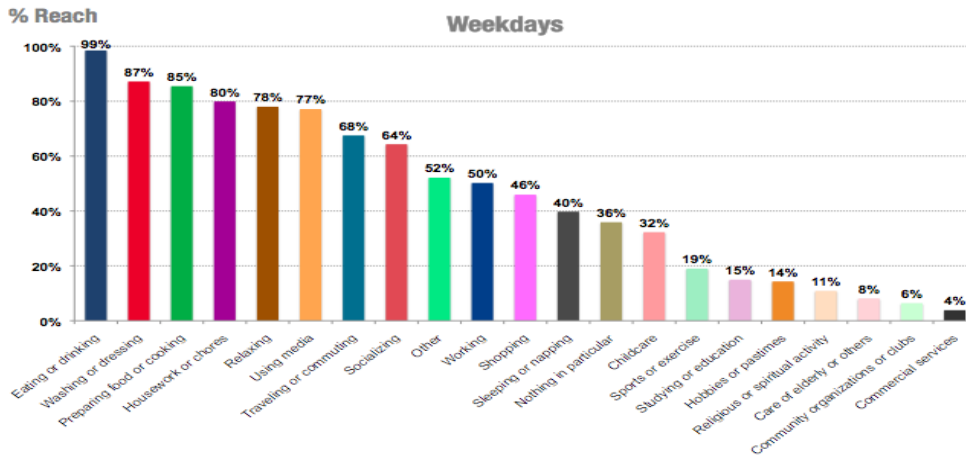


What this tells us is that if you want to target urban moms, they’re on the go – in transit, far more than they are in any other situation. They’re not at the gym or a fast food place.

Activities

On an average day, urban moms are engaged in a lot of basic mom duties – washing, dressing, preparing foods and doing chores. It’s interesting that “relaxing” makes the top five weekday activities. They’re not doing hobbies, studying, engaged in sports or exercise and if you were a marketer trying to reach women doing that, your marketing would have to be very precise given the low penetration of these activities.

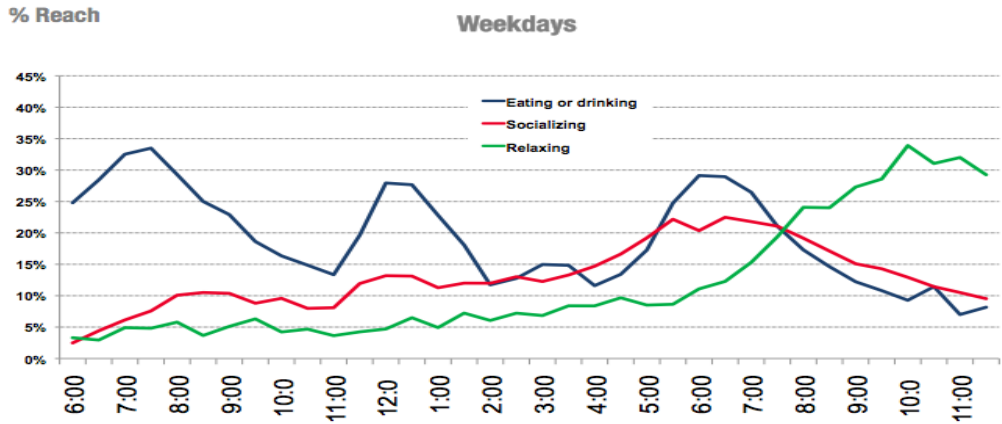
What Are Most Metro Moms Doing During The Week ?



Activities Throughout The Day

The ability to see things change over the course of the day is one of the most interesting dimensions of USA TouchPoints data. In the slide below, we see that women really don't relax much until their daily responsibilities are over. The number of women relaxing begins building between 6:00pm and 7:00pm and grows throughout the evening. Surprisingly, women aren't relaxed at any other times of the day – not on their lunch break, during dinner – not even when they're socializing with their friends.

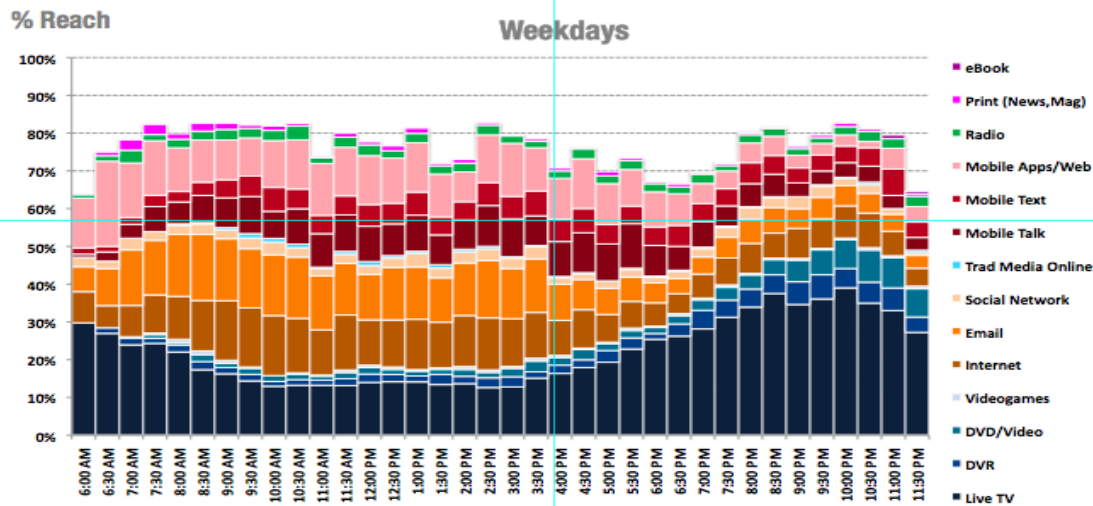
When Are Key Moments Of Relaxation? Socializing? Eating/Drinking?



Media Exposure

USA TouchPoints captures the media exposure to traditional and non-traditional media. Metro Moms are computer and mobile-dominant. These media represent a large portion of their media day – and are present throughout the day to varying degrees.

Metro Moms' Weekday Media Day



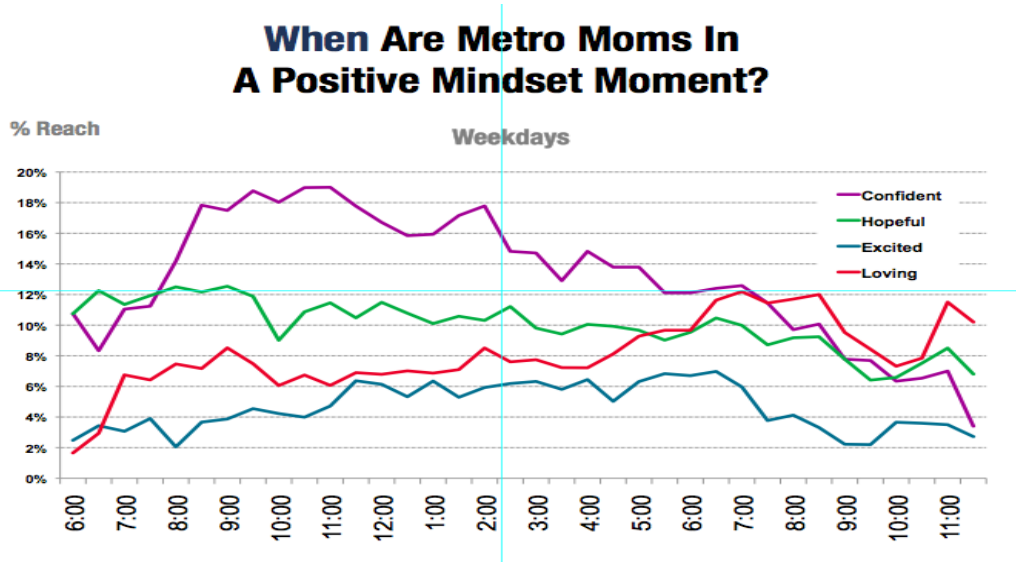
Radio is also present throughout the day while print appears only in the morning. We created a new media genre called "traditional media online," which encompasses reading newspapers and magazines online or on mobile plus radio streaming.

This is represented in the light blue bar between the computer and mobile activities. As you can see, this medium operates in an entirely different daypart for traditional print. This pattern should be explored in greater depth – and it may be increasingly more relevant to advertisers given that it appears to extend print’s and radio’s reach throughout the day.

Metro Moms’ television usage is high in the evening but there is still a substantial amount of computer use throughout the evening. Social networking, in light peach, is steady throughout the day and has a slight increase during the evening.

Emotions and Mindset

Emotions play an important role in receptivity. We know that emotionally congruent advertising and programming deliver a higher level of consumer awareness and message take-away. Knowing what mood consumers are in, and when they’re in those moods can make a significant difference in how we approach them.

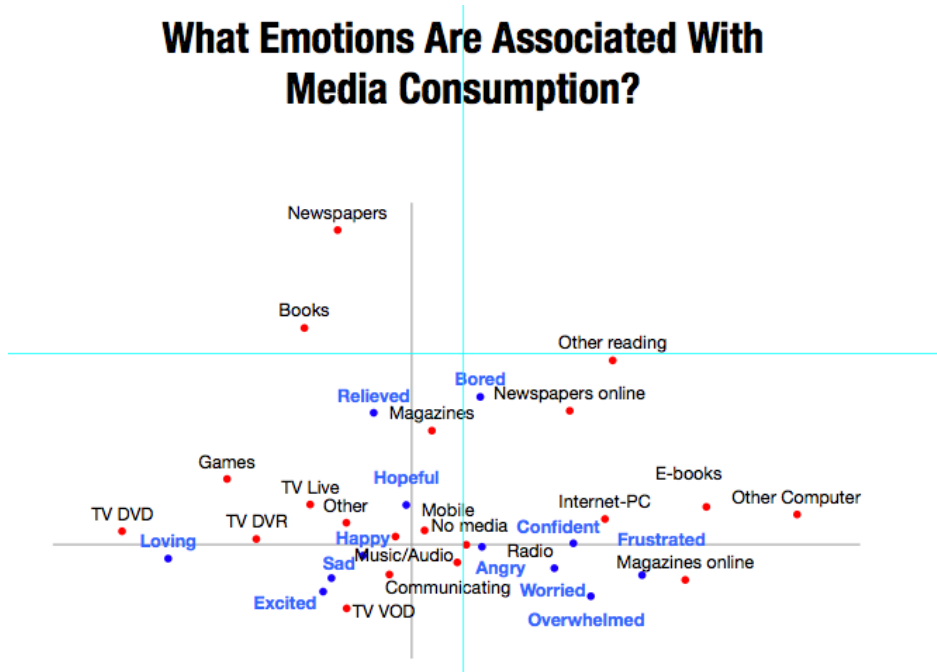


Metro Moms are generally positive throughout the day, though their confidence peaks mid-morning through 2:00pm or so. We’re not sure what happens, but confidence wanes as they come home from work, make dinner and engage in other household, mom activities. Loving, on the other hand, starts relatively low throughout the day but begins growing precisely when women get home and engage in these tasks. Loving feelings drop throughout primetime, but increase again towards the end of the evening. Just like they’re supposed to.

Emotions and Media Consumption

USA TouchPoints provides a breadth of information about the contextual elements impacting receptivity to media and advertising messages. In the scatter plot below, we demonstrate the operative emotional states associated with Metro Moms’ media consumption. “Hopeful” and “Happy” emotional states are closely associated with live television, mobile phone use. In contrast, “Confident,” which tends to be a work-related state is associated with Radio, Computer and Internet use. But so are the negative emotional states like “Frustrated” or “Worried.” Magazines appear to occupy their own emotional space, one of the few media associated with a “Relieved” state of mind. Knowing this, advertisers can fine-tune their message and media plans to maximize emotional states of mind.

What Emotions Are Associated With Media Consumption?



Summary

Hopefully this small case study of Metro Moms has given you a flavor of the types of new insights TouchPoints will bring the industry. Through USA TouchPoints, an advertiser will know where his target audience is every half hour of the day, who they're with and what they're doing. A media planner will know all of this and have the opportunity to select media best suited for the emotional tenor of an ad campaign. They will have the chance to identify moments and contexts most relevant to a brand and its campaign.

It's not a stretch, then, to suggest that increased understanding of the contextual elements influencing receptivity will ultimately improve advertising receptivity. We believe USA TouchPoints can help improve receptivity, relevance, and ultimately ROI.