Media Related Universe Estimates
Council for Research Excellence

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1. Council for Research Excellence

Mission Statement

The mission of the Council for Research Excellence (CRE) is to advance the knowledge and practice of methodological research on audience measurement through the active collaboration of Nielsen Media Research and its clients.

The Council will identify specific methodological research projects, select research providers and report research findings to Nielsen's client base. All research will be funded by Nielsen Media Research.

It is intended that the operations of the Council will reflect the values of transparency, inclusiveness, diversity, imagination, collegiality, practicality and client leadership.

Purpose

Methodological research is concerned with the accuracy of audience measurements and the effects of possible changes in methods. It provides the foundation for valid, reliable and credible audience measurement.

To insure that the priorities of its clients are reflected in its research and development efforts, on February 18, 2005, Nielsen Media Research announced that it would make $2.5 million available for a special research and development fund, incremental to its customary research and development investments.

The Council for Research Excellence is intended to give Nielsen's client base greater voice in the design and execution of methodological research. The Council is composed of Nielsen clients representing different industry segments. Operating in cooperation with, but independently of, Nielsen Media Research, the Council manages the research and development fund.

Following evaluations of the success of this initiative by Nielsen and its clients, Nielsen has revisited the size of the fund on an ongoing basis.

Goals

The Council is responsible for:

- Organizing its own structure and ongoing operations
- Identifying research and development priorities it chooses to explore
- Drafting various research proposals and requests for proposals
- Selecting research providers to execute the proposed research (which may include Nielsen Media Research if the Council so chooses)
- Tracking the progress of the execution of research
- Reporting to Nielsen's client base the research findings

To support the Council in its work and to provide informed and independent points of view, Nielsen has established a Technical Advisory Panel of academic, government and industry experts.

More about the Council for Research Excellence can be found at www.researchexcellence.com

2. UE Study Mission Statement

To determine valid method(s) for creating accurate media-related universe estimates (including subsets such as age/sex/income/geography/ethnicity/language) that can be readily adapted, updated, and expanded to reflect rapidly changing technologies.

3. UE Project Team

Committee Members

Nancy Gallagher	NBC Universal Chair
Michele Buslik	Targetcast-TCM
David Gunzerath	MRC
Greg Iocco	Scripps
George Ivie	MRC
Dan Murphy	Univision
Matt Ross	Hearst
Ceril Shagrin	Univision
Richard Zackon	Facilitator

Sponsor

Christine Pierce	Nielsen

Vendor

Randall Keesling	Research Triangle Institute
Melissa Helton	

4. Executive Summary

This project was designed as the first step in a process to ensure the accuracy of media-related universe estimates. Since valid, independent, current data are not available for all media categories it is imperative that the estimates produced by Nielsen accurately reflect the rapidly changing media landscape.

The study took place in the Dallas-Fort Worth DMA. Dallas-Fort Worth was selected because:

It is an LPM market (measured by local people meters)
It has significant levels of ethnic populations (14% African American, 20% Hispanic). It has a mix of rural/urban counties (8% of market is D county) its high proportion of over-the-air households would give some insight into impact of digital convergence

The contract was awarded to Research Triangle Institute, as their approach had the most potential for delivering valid results in a process that could be easily replicated.

The methodology was designed to mirror Nielsen's LPM sample recruitment process as closely as possible—address-based sample, in-person interview.

A large proportion of time and effort went into the questionnaire design. Extensive testing and revisions of both the English and Spanish language versions of the questionnaires resulted in a major slide of the project time line, but it was more important to get it right than meet an arbitrary deadline. The major challenges were eliminating use of show cards to identify devices, determining the best way to describe devices/services (HD was especially challenging), and translating media-terms into Spanish (Satellite proved to be difficult to translate across Hispanic nationalities.) Ten interviewers were selected by RTI to participate in a 3 day training process—eight were hired for the project (including two bilingual and one Spanish language only. Interviews were conducted beginning August, 2009 (more than 6 weeks after the digital convergence to eliminate its immediate impact.) As an additional quality control, an Ernst and Young auditor attended the training and observed some field interviews.

A total of 642 interviews were completed (out of 1,000 cases). Of these, 79 interviews were conducted in Spanish. The response rate was 69.7% when ineligibles are removed.

Data analysis revealed significant differences in HD and DVD characteristics between what was observed in the CRE UE study and the Nielsen UEs. In addition, the number of sets per household data was problematic in African American and Hispanic households (HHs) (sample sizes are too small to provide meaningful level of significance). There was also a higher (though not significant) level of non-TV HHs encountered.

Follow-up actions included re-contact with the non TV HHs to learn more about their non-tv status (only 3 out of 18 were reached), additional calls to identify cell-phone only homes, and a breakout of findings from those homes to ascertain if there were any significant differences relating to cell phone only status.

5. Nielsen Methodology

Background

Media-related universe estimates (UEs) are developed for characteristics such as cable, alternate delivery service (ADS), and Number of Operable TV Sets. Media-related UEs are produced at the beginning of the TV season, and also are updated prior to the sweep periods of February, May, July, and November.

Nielsen panels and diary surveys are used to produce these media-related UEs since valid data from external sources does not exist and/or is not updated frequently. National UEs are based on the installed National People Meter (NPM) sample and installed Local People Meter (LPM) samples. Media-related UEs for LPM and Area Probability (AP) set-meter markets are based on data from

metered households installed in those markets. Telephone frame (TF) metered market and diary-only market UEs are based on diary samples.

Weighting the Sample Data

As part of the media-related UE computations, sample data are weighted to a set of household characteristics that are correlated with media-related statuses. Weighting is performed at each level of geography for which the UEs are produced – at the National, Sub-National, and DMA levels. In order for weighting to be performed for a given characteristic, the characteristic must meet population thresholds and UEs must be available for the characteristic at the relevant geographic level. The weighting controls used for media-related UEs are distinct from the weighting controls used for viewing estimates.

The list of potential household characteristics used for weighting for producing the media-related UEs is as follows:

<u>Within Total Households</u>

County Size

Age of Householder

Household Size

Presence of Children

Asian (yes/no)

African American/African American (yes/no)

Hispanic (yes/no)

Income[1] (National level only)

Education[1](National level only)

Geography[1]

<u>Within Hispanic Households</u>

Spanish Language Use (National level & NHSI DMAs only)

Age of Householder

Household Size

Income[1] (National level only)

Education[1] (National level only)

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[1] The Income and Education UEs used for media-related UE weighting are based on a weighted distribution of the NPM sample.

<u>Within African American/African American Households</u>

County Size

Age of Householder

Household Size

Presence of Children

<u>Within Asian Households</u>

Age of Householder

At the national and sub-national levels, many household characteristics are controlled within territory. The national level also includes separate geographic controls for LPMs and the remainder U.S. within territory. At the DMA level, the model incorporates geographic controls for individual counties or county groups where appropriate.

Computing National Media-Related UEs

Typically, four weeks (28 days) of NPM and LPM sample is used to produce the national media-related UEs. After weighting has been performed at the national level, the sum of household weights is aggregated for the various media-related characteristics. Projections (and thus the final UEs) are produced by applying the given media-related characteristic's penetration to the current National TV household universe estimate.

Computing Sub-National Media-Related UEs

Sub-National estimates are computed for two areas: 1) the area comprised of all LPM and Area Probability set-meter markets, and 2) the area comprised of all remaining markets. The same four weeks of NPM and LPM sample used for the national UEs is cutback to households in LPM and Area Probability set-meter markets and used to produce the preliminary estimates in area1. Similarly, four weeks of NPM sample is cutback to households in all remaining (TF and diary-only) markets and used to produce the preliminary estimates in area 2.

After weighting has been performed within each sub-national area, the sum of household weights is aggregated for the various media-related characteristics in each of the sub-national areas. Preliminary estimates are produced within each sub-national area by projecting the media-related characteristic's penetration to the TV household estimate for the given sub-national area. Preliminary media-related estimates are then adjusted such that the sum of media-related UEs for the two sub-national areas is equal to the National media-related UE for the given media-related characteristic[2].

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[2] An exception to this is for Nielsen's digital cable UEs. An additional adjustment is done to ensure that the digital cable UE is not larger than the cable UE.

Computing DMA Media-Related UEs

Preliminary estimates in LPM and Area Probability set-meter markets are typically produced using a rolling average of 4 four-week periods of meter sample installed in the market. These 4 four-week periods are not continuous; the 4 periods are spread amongst the previous 6-10 months. Preliminary estimates in telephone frame and diary-only markets are typically produced using a rolling average of 4 four-week periods of diary sample.

Note, there are situations where data from prior periods are not available for use in the computations of DMA media-related estimates. These situations could include UEs for markets that have recently changed sampling methodologies or UEs for variables that were previously not collected from our sample homes. In these cases, the preliminary estimates will be based on the available sample data that is appropriate for use in the computations.

After weighting has been performed within each market, for each of the 4 periods, the sum of household weights is aggregated within each market for each of the media-related characteristics for each period. Estimates are produced for each of the 4 periods by projecting each media-related characteristic's penetration to the given DMA TV household UE. These estimates are then averaged across the 4 periods, producing the Preliminary media-related estimate for the market.

Preliminary media-related estimates for LPM and Area Probability set-meter markets are then adjusted such that the sum of media-related UEs for all markets equals the sub-national media-related UE from area 1 for the given media-related characteristic[3]. Preliminary media-related estimates for all TF and diary-only markets are then adjusted such that the sum of UEs for all markets equals the sub-national media-related UE from area 2 for the given media-related characteristic.

Media-Related for Hispanic, African American/African American, and Asian TV Households

Media-related UEs for Hispanic, African American/African American, and Asian[3] TV households are produced using the same weighted sample as described above for each of the National, Sub-National, and DMA geography levels. Sums of household weights are aggregated within Hispanic/Non-Hispanic, African American/Non-African American, and Asian/Non-Asian homes for each media-related characteristic. Preliminary estimates are produced by projecting each media-related characteristic to the TV household UE for the given race/ethnicity for the given geography level. Preliminary estimates are adjusted as described above; however, an additional dimension is added to the adjustment of the preliminary estimates to ensure that the final media-related UE for the given race/ethnicity does not exceed the media-related UE for the total TV households.

6. Timing of Project

First Committee Meeting	August 2006
RFP Preparation	March 2007-February 2008
RFP Response Period	March-May 2008
Selection/Revision of Proposals	May-August 2008
Final proposal accepted	September 2008

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[3]Note, media-related UEs for Asian TV households are only produced at the National level.

Questionnaire Design	October 2008-March 2009
Sample Selection	April-May 2008
Cognition testing	May 2009
Final questionnaire	June 2009
Field staff recruit	May-July 2009
Field staff training	July 30-August 2, 2009
Field data collection	August- November 2009
Data Entry and Validation	August- November 2009
RTI Analysis and Report Preparation	November 2009-January 2010
Committee Analysis/Follow-up	January-August 2010
Webinar Report (CRE)	October 2010
Report to Nielsen	October 2010
Webinar Report (Nielsen Clients)	July 2011

7. RTI Study methodology

SAMPLE DESIGN

The design for the household survey consisted of conducting an in-person interview with one adult (age 18 or older) selected from households in the Dallas Designated Market Area (DMA), using address-based sampling techniques. A stratified random sample of households was selected in order to obtain valid estimates of media-related product ownership and household-attribute penetration rates for the Dallas DMA, and for specific socioeconomic and demographic groups at the household and person levels.

Objectives

This sample design had the following objectives:

1. Select a probability sample of households that is representative of the target population. The sample should yield universe estimates that infer to the target population. Household level estimates will be calculated for each of the following devices/technologies:

   • Wired Cable (including telcos)

   • Digital Cable

   • VOD enabled

   • Satellite

   • PVR

   • VCR

   • VCR/DVD

- DVD Recorder

- DVD Player only

- Over-the-air digital

- HD Set(s)

- HD receive over-the-air

- HD receive cable

- HD receive satellite

- Internet at home

- Broadband at home

- DSL at home

Household and person level estimates will be calculated for the following devices/technologies:
- Cell phone (including separate categories for video and internet enabled)

- Video Mp3 player (iPod)

- Mp3 player (iPod)

- Video iPod

2. Control travel costs associated with data collection by restricting the sample to 60 Census block groups throughout the Dallas DMA. This sample should yield a variety of areas from across the 32-county DMA to provide adequate degrees of freedom for design-based variance estimation.
3. At the request of CRE, try to reduce the differences between this design and Nielsen's LPM sample design to the extent possible. To this end, RTI stratified census block groups into the same race/ethnicity strata that have been provided to RTI by Nielsen.

Target Population

The target population for this study was those households in the Dallas DMA with at least one member aged 18 years or older.

The Dallas DMA encompasses 32 counties and includes the Dallas-Fort Worth-Arlington (DFWA) Metropolitan Statistical Area (MSA), which encompasses 12 counties. The Dallas DMA consists of the

following counties: Anderson, Bosque, Collin, Comanche, Cooke, Dallas, Delta, Denton, Ellis, Erath, Fannin, Freestone, Hamilton, Henderson, Hill, Hood, Hopkins, Hunt, Jack, Johnson, Kaufman, Lamar, Navarro, Palo Pinto, Parker, Rains, Red River, Rockwall, Somervell, Tarrant, Van Zandt, and Wise. The DFWA MSA consists of the following counties: Collin, Dallas, Delta, Denton, Ellis, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant and Wise.

Address-Based Sampling (ABS) Frame

The primary elements of an ABS frame are residential mailing addresses which are made available to the public by the U.S. Postal Service (USPS) through a nonexclusive license agreement with qualified private companies. The addresses are based on the Delivery Sequence File (DSF), a computerized file containing all delivery point addresses serviced by the USPS, with the exception of general delivery.

Although it is not unreasonable to assume that virtually every household (HH) in the United States has a mailing address, not all mailing addresses are suitable for in-person HH surveys because interviewers must be able to locate a mailing address "on the ground." HHs with city-style[4] mailing addresses are considered locatable for in-person HH surveys and constitute the vast majority of elements on an ABS frame. HHs with mailing addresses that are not locatable include those with simplified rural addresses[5]and HHs that only receive mail through residential Post Office (P.O.) Boxes.

The Marketing Systems Group (MSG) estimates that approximately 2.8 percent of the HHs in the United States were assigned to rural carrier routes with simplified rural addresses in 2006. MSG used the computerized Delivery Sequence File from the USPS to identify all rural carrier routes that have simplified rural addresses. This file contains a count of the number of active simplified rural addresses for each simplified rural route. MSG then accessed various marketing databases and identified street addresses that are coded to simplified rural routes. These converted street addresses RTI re-compiled and then treated as augmented addresses. MSG estimates that augmented addresses are available for approximately 80 percent of simplified addresses nationwide.

Sample Allocation and Selection

RTI began the sample selection process by stratifying each of the Census block groups (CBG) on the sampling frame into 10 categories based on the concentrations of the Hispanics and African Americans inside the MSA (9 categories) and outside MSA (1 category). These categories have been defined as the intersection of the percent of Hispanic (3 levels) and African American (3 levels) households within MSA and outside MSA (Exhibit 1). The race/ethnicity categories were defined by Nielsen to match their sampling strata.

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[4] A city-style mailing address contains a street name and number as well as city, state, and ZIP Code.

[5] A simplified rural address does not have a street address. Mail delivery is based on the resident's name, city, state, and ZIP Code. Typically, simplified rural addresses are assigned to all households on a rural carrier route.

Exhibit 1.   Stratum Definitions for Census Block Groups

Stratum	MSA	% Hispanic HHs	% African American HHs
1	Inside MSA	0-21.99	0-25.99
2	Inside MSA	0-21.99	26-61.99
3	Inside MSA	0-21.99	62+
4	Inside MSA	22-54.99	0-25.99
5	Inside MSA	22-54.99	26-61.99
6	Inside MSA	22-54.99	62+
7	Inside MSA	55+	0-25.99
8	Inside MSA	55+	26-61.99
9	Inside MSA	55+	62+
10	Outside MSA	n/a	n/a

To control costs, RTI proportionately allocated the sample of 60 CBGs inside and outside of MSA according to the total number of households. US Census figures[6] show 89% of HHs in the DMA are inside the MSA. A proportional allocation inside/outside MSA would place 53 CBGs inside the MSA and 7 outside. RTI did not stratify by race/ethnicity outside of the MSA because only 7 CBGs will be allocated.

RTI used these concentration categories to calculate the expected yield of addresses by race/ethnicity for various trial allocations of the CBG sample. RTI then used a non-linear optimization (Chong and Zak, 1996) to determine the allocation of the CBGs that achieved in expectation the desired sample distribution with minimal design effects. While the design attempted to oversample the key groups (Hispanics and African Americans), it did not target specific age categories. The degree of oversampling of Hispanics and African Americans was finalized during the sample selection process. Ideally, RTI wanted an equal sample of Hispanics, African Americans and Others, however, the design effects became too high to achieve this.

RTI used probability-proportional-to-size (PPS) systematic sampling to randomly select approximately 60 CBGs. This approach allows a CBG to be selected more than once, which could yield less than 60 CBGs. Systematic sampling selects units at a fixed interval throughout the sampling frame after a random start. Prior to selection, RTI used implicit stratification to control the geographic distribution of the sample. Refer to Cochran (1977, pp. 265-266) and Madow (1949) for details.

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[6] Source: Population Division, U.S. Census Bureau, 2007Annual Estimates of Housing Units for Counties in Texas: April 1, 2000 to July 1, 2006 (HU-EST2006-04-48), Release Date: August 15.

The second-stage sampling frame was comprised of all active city-style residential and augmented addresses associated with each selected CBG. RTI allocated the 1,000 sample addresses approximately equally to each selected CBG (i.e. an average of 16.7 addresses per CBG) to reduce design effects attributable to unequal weighting. The design is summarized in Exhibit 2.

Exhibit 2.   Summary of the Proposed Media-Related Universe Estimates Enumeration

Sampling Design

First Stage: Census Block Groups (CBGs)	
Sampling Frame	All CBGs with locatable mailing addresses
Stratification	Explicit: Inside/outside MSA, Hispanic and African American concentration Implicit: County, tract, block group
Type of Selection	Probabilities proportional to size
Sample Size	60 CBGs
Second Stage: Locatable Mailing Addresses (LMAs)	
Sampling Frame	All locatable residential mailing addresses in selected CBGs
Stratification	Implicitly sorted by carrier route and delivery sequence number
Type of Selection	Systematic sampling within each CBG
Sample Size	1,000 locatable mailing addresses (average 16.7 per CBG)

The selection of addresses within CBG was performed by Marketing Systems Group (MSG). RTI purchased a sufficient number of addresses to account for non-response, refusals, vacant units, inaccessible units, and other such reasons for non-contacts and non-interviews. Exhibit 3 shows the initial sampling assumptions.

Exhibit 3.   Sampling Assumptions

Category		Number
Initial sample size of addresses		1,000
Locatable housing units	Housing units that physically exist in the selected Census block groups.	950
Accessible housing units	Housing units that can be reached or accessed by the interviewer	880
Occupied housing units	Accessible housing units that are occupied, or can be determined to be occupied	800
Contacted housing units	Accessible, occupied housing units where a member of the household has been contacted	775
Eligible contacted housing units	Contacted housing units with 1 or more occupants age 18 or older, who can speak English or Spanish	750
Cooperating housing units	Housing units that complete the interview	600

RTI expected to complete interviews with 600 of the 1,000 addresses that were fielded. Of the 750 contacted housing units that RTI assumed to be eligible, RTI expected a cooperation rate of 80% (600/750). A rough estimate of the response rate would be 63% (600/950). The response rate is the number of completed household interviews divided by the number of eligible housing units. In Exhibit 2, the number of locatable housing units (950) is a rough estimate of the number of eligible housing units. There may be housing units with unknown eligibility among those that are deemed inaccessible, or with unknown occupancy, or that have not been contacted. These numbers figured in the final response rate.

Weighting

Virtually all survey data are weighted before they can be used to produce valid estimates of population parameters. While reflecting the selection probabilities of sampled units, weighting also attempts to compensate for practical limitations of a sample survey such as differential non-response and under-coverage. Furthermore, by taking advantage of auxiliary information about the target population, weighting can reduce the variability of estimates.

After survey data were compiled and edited, RTI determined the eligibility and response status for each address/household released to the interviewers. Next, household sampling weights were computed as the inverse of their probability of selection. Subsequently, the weights were adjusted to compensate for differential non-response. Finally, the non-response-adjusted weights will be ratio-adjusted to the most recent Census estimates of households and persons by socio-demographic characteristics such as age, gender, and race. This final adjustment was to reduce possible bias due to unequal coverage rates of households

Not all sample units contacted would result in a completed interview. Therefore, RTI field staff were given a prescribed set of attempt rules to follow to ensure that all reasonable efforts were made to contact eligible respondents. Cases submitted as non-interviews that did not meet these attempt rules were returned for additional work. Filed Interviewers (FIs) were instructed to keep these rules in mind as they planned their work so as not to make unnecessary attempts that would not bring the case closer to completion. At the same time, FIs were to use common sense when completing their assignment and not put the rules above a potential interview. For example, they would not avoid a contact with a potential respondent if they were in the neighborhood working on other cases anyway. If an unnecessary attempt did not result in a completed interview, it was not be counted as one of the official contacts. Before a case could be finalized, it had to meet the attempt rules listed below:

ATTEMPT RULES

1. For all final non-interview codes, a maximum of 2 attempts on the same household can be made on the same date, provided that each attempt is in a different day part (morning, afternoon, and evening), and one of those attempts must be made in the evening, (day part 3).
2. For a final code 158, Language Barrier, there must be 2 pending language barriers (code 58). After the first language barrier, then at least one other attempt must be made on a different day of the week and a different day part. If, after both attempts, no person speaking English or Spanish is contacted, then the household can be considered a final language barrier.
3. For a final code 166, Final Refusal, there must be 2 pending refusals (code 66). After the first refusal, the FI must discuss the case with your FS before any further action. In some cases, the case may be returned to the FS so that it can be reassigned to another interviewer. Subsequent attempts on refusal cases must be made on a different day of the week and a different day part from the first refusal.
4. For a final code 170, Security Rejection, there must be 2 pending security rejections (code 70) on different days of the week and different day parts. The interviewer must make a good-faith effort to enter the facility. This includes getting permission from the building management or receipting an escort into the building. After the first security rejection, the FI must discuss the case with their FS to devise a strategy, which may include reassigning the case to another interviewer.
5. For a final code 171, Exhausted Attempts, at least 5 attempts must be made. Of the 5 attempts, at least 1 must be a weekday (Monday-Friday), and at least 3 must be on weekends. There can be: 2 Saturdays and 1 Sunday OR 1 Saturday and 2 Sundays. Further, from among the 5 attempts, there must be at least 1 attempt from each day part. This is, 1 morning (day part 1), 1 afternoon (day part 2), and 1 evening (day part 3) attempt. See Exhibits 4 and 5 for diagrams of this attempt rule.

Exhibit 4

Attempt Rule for "Exhausted Attempts" Flowchart 1

START

Two attempts on same date? — YES → One attempt in day part 3? — NO → Only one of the two attempts count toward attempt rules

Two attempts on same date? — NO

One attempt in day part 3? — YES

At least 5 attempts? (Any combination of pending codes except 61) — NO → Keep working case

At least 5 attempts? — YES

All 3 day parts covered among the 5+ attempts? — NO → Make an attempt in missing day part

All 3 day parts covered among the 5+ attempts? — YES

At least one weekday attempt? — NO → Make a weekday attempt (Mon-Fri)

At least one weekday attempt? — YES

At least 3 weekend attempts? — NO → Make more weekend attempts

At least 3 weekend attempts? — YES

At least one attempt on Saturday? — NO → Make a Saturday attempt

At least one attempt on Saturday? — YES

At least one attempt on Sunday? — NO → Make a Sunday attempt
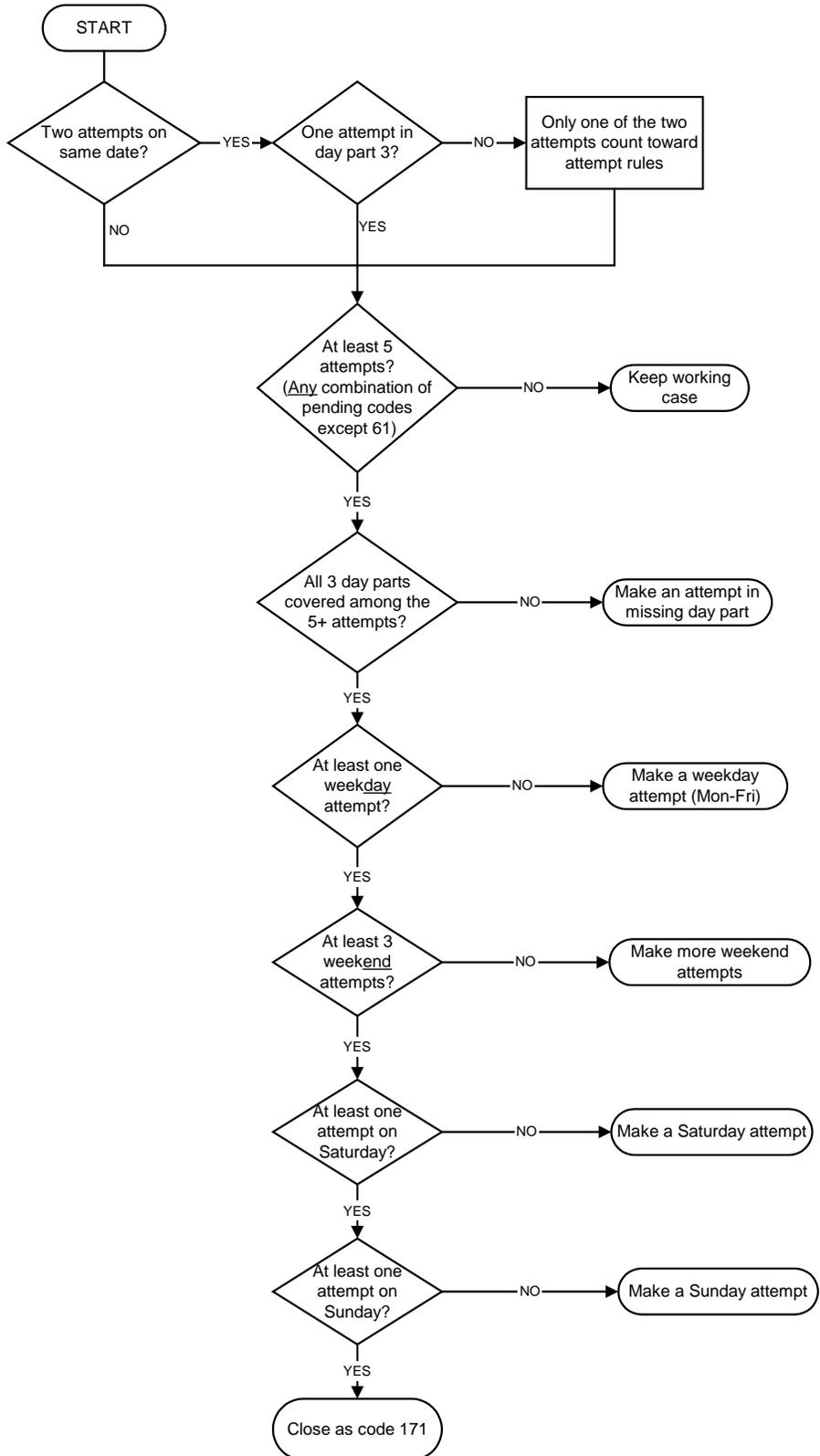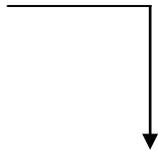
At least one attempt on Sunday? — YES

Close as code 171

Exhibit 5

Attempt Rule for "Exhausted Attempts" (Code 171) Flowchart 2

■ At least 5 attempts

★ Includes all 3 day parts

★ At least 1 weekday attempt *

★ At least 3 weekend attempts

>> At least 1 Saturday attempt*

>> At least 1 Sunday attempt *

*Any Daypart

VENDOR MONITORING

Throughout the study, RTI maintained frequent communications with the CRE UE committee through regular conference calls, e-mail communications, and a few in-person visits from CRE UE committee delegates. With its significant experience in survey research, the RTI team used the requirements provided the CRE to produce initial recommendations for sampling, questionnaire, and weighting designs. The CRE members provided the media industry-specific insights and definitions which were also critical to the success of the study. The CRE committee approval was required and obtained for all design plans and materials associated with the study.

CRE UE committee members or representatives engaged in numerous monitoring activities throughout the study. These activities included observations of cognitive interviews, training sessions, and special reviews of materials. CRE members provided valuable feedback during each phase of the study.

In addition, the CRE funded an Ernst and Young review of the study. Ernst and Young performed this review in August 2009. Their procedures included the following activities:

Read training materials and attend a training session

Compare English and Spanish questionnaire for reasonableness

Speak with all bilingual interviewers to confirm speaking abilities

Assess the interview supervision and validation process

Observe a small sample of interviews

The review conducted by Ernst and Young was positive and no significant issues or deficiencies were noted.

WEIGHTING AND PROJECTION OF RESULTS

RTI provided a detailed description of the weighting plan to the CRE. Weighting is a commonly used statistical technique used to reduce potential sampling biases. RTI designed a comprehensive weighting plan which was reviewed and approved by the CRE UE committee as well as by Nielsen statisticians. The key elements of the weighting plan are described below.

The weighting for the media-related UE study involved three major steps, outlined below

Design weights accounted for unequal probabilities of selection at each stage of sample selection

Design weights were adjusted for non-responding units

Non-response-adjusted weights were post-stratified to estimates of the target population to ensure proper coverage

The design weights needed to account for the fact that high density Hispanic and African American areas were over-sampled. This oversampling was necessary in order to provide adequate sample sizes for comparisons to Nielsen's Hispanic and African American media-related Universe Estimates. For the post-stratification step, Nielsen provided the weighting control variables and universe estimates used in their November 2009 Media-Related Universe Estimates for the Dallas-Fort Worth DMA. These UEs and controls were used by RTI as a starting point. RTI's PROC WTADJUST procedure in SUDAAN was used to adjust the design weights for non-response and under-coverage. The procedure implements the Generalized Exponential Model (GEM), developed to provide a unified method for non-response, post-stratification and extreme weight adjustments.

RTI provided both weighted and un-weighted distributions for the key variables in the study. Results were provided for total, African American, and Hispanic households. The responses for media-related characteristics were primarily tabulated for homes that had a television so that they would be more directly comparable to Nielsen's UEs.

STANDARD ERRORS

In order to compare the survey results to Nielsen's UEs, standard errors were computed for both the RTI survey results and the Nielsen UEs. This computation of standard errors for both samples allowed the committee to identify statistically significant differences between the two sets of estimates.

RTI computed standard errors for the weighted tabulations that were provided for the study. Similarly, Nielsen provided standard errors for the media-related UEs.

8. Questionnaire Design

Six months were spent on questionnaire design. RTI's original proposal to use showcards to aid in indentifying various types of equipment was vetoed by the committee as it could hinder the future implementation of findings as the show-cards would require constant updating to accommodate new models as well as making any non in-person interviewing process more complex. Various expert sources were consulted for insights, guidance and definitions. These included other research companies, academics, Nielsen's Media Related Equipment questionnaire and the Consumer Electronics Association.

RTI tested the questionnaire with 20 respondents recruited from the general population in the Raleigh-Durham area. Cognitive interviewing allowed us to collect qualitative data on potential threats to the validity and reliability of the survey questions. Testing goals included assessing interviewer instructions, completeness of response options, question placement, transitional statements, and respondents' comprehension of questions and the accuracy of the question routing patterns.

Cognitive interviewers used the concurrent verbal-probing technique to investigate potential sources of response error on the survey questions. The RTI methodologists administered structured probes from the cognitive interviewing protocol as well as spontaneous probes. Typical probes included comprehension or interpretation probes (e.g. In your own words, what does this term mean to you?), recall probes (e.g. How did you come to figure out your response?), and other general probes (e.g., How did you arrive at that answer? Was it easy or hard to recall that answer?).

Summary of RTI's Recommendations Based on the Cognitive Interview Findings and their Resolution (Changes made)

Household Media-Related Products

The first section of the survey involved asking questions about products that were present in the household. These questions were asked of all participants regardless of how many people lived in their household. Ownership in these questions was determined by household, not individual ownership.

Q6. TV ownership
Recommendation: Leave the question as is.
Resolution: Leave the question as is.

Q7. Number of TVs
Recommendation: Leave the question as is.
Resolution: Leave the question as is.

Q8. TVs connected to a digital converter box

Recommendation: Emphasize that a digital converter box is a separate device so that no one confuses it with a cable or satellite box: "A digital converter box is a separate device attached to a TV set but not attached to a cable or satellite box. The converter box is required to convert digital over-the-air broadcasts received via an antenna to analog. This device is required since the "Digital TV Transition" in June 2009."
Resolution: Use the recommended wording for the question. Move questions 8 and 9 after question 14.

Q9. Number of TVs connected to a digital converter box
Recommendation: Leave the question as is.
Resolution: Move questions 8 and 9 after question 14.

Q10. TVs connected to Cable service.

Recommendation: Revising the question by removing "through a wire" will help avoid confusion. This may also address the issue of people reporting they have cable service when they really have satellite service because DIRECTV and other satellite companies use wires to connect to the TV. Also, not all dishes are mounted on a roof and the question should include other locations where a dish can be located. Recommend asking: "Is any working television set in your household currently connected to a cable television service, not a separate satellite dish on your house or in the yard?" Spanish recommendations: In Spanish, we recommend changing 'Antena Parabólica' to 'satélite'.
Resolution: Use the recommended wording for the question. For the Spanish translation of satellite use this phrasing provided by Nielsen: "servicio de satellite como DIRECTV o DISH."

Q11. Cable service provider

Recommendation: Leave the question as is, but train interviewers to know what satellite companies are in their interviewing area. Should an interviewer receive a satellite company name when asking which cable service provider the respondent has, the interviewer should verify that is the answer the respondent meant to give, then move on to the satellite questions. Telling the respondent they are wrong may offend or embarrass the respondent, possibly increasing the number of interview incompletes.
Resolution: Leave the question as is.

Q12. Type of cable service

Recommendation: To ensure that the question captures accurate responses, we recommend including the response choice "Both regular and digital cable". Also, the question only defines digital cable and more distinction may be needed to explain the difference. Propose the following: "There are two types of cable TV service: regular cable service and digital cable service. Digital service requires a set-top box and has an on-screen interactive program guide that is accessed using the remote control to select many more cable, premium and pay-per-view channels, as well as several channels of digital music. Regular cable does not have an on-screen interactive program guide. Do you have digital cable service, regular cable service, or both regular and digital cable service in your household?"
Resolution: Add the response choice "Both regular and digital cable." Word the question as follows: "There are two types of cable TV service: regular cable service and digital cable service. Digital service requires a set-top box and has an on-screen interactive program guide that is accessed using the remote control to select many more cable, premium and pay-per-view channels. Regular cable does not have an on-screen interactive program guide. Do you have digital cable service, regular cable service, or both regular and digital cable service in your household?"
Provide the interviewer with a list of digital channels to use as a probe, if needed: "(IF NOT SURE, ASK: Do you get any of the following channels: Discovery Kids, Science Channel, Military Channel, or Planet Green? IF YES, R HAS DIGITAL CABLE)"

Q13. Satellite service

Recommendation: Leave the question as is in the English version.
Spanish recommendation: Recommend changing 'Atena Parabólica' to 'satélite'.
Resolution: For the Spanish translation of satellite use this phrasing provided by Nielsen: "servicio de satellite como DIRECTV o DISH."
Add a new question after Q13 that reads: "Are all working television sets in your household connected to a cable service or satellite dish?" (Y/N/DK/REF). Include a skip pattern after this new question that specifiesif the response to this new question = YES, skip Q8 and Q9 (now moved after Q14) that ask if any TVs are connected to a digital converter box.

Q14. Satellite service provider

*Recommendation*s Leave the question as is, but train interviewers to know what cable companies are in their interviewing area. Should an interviewer receive a cable company name when asking which satellite service provider the respondent has, the interviewer should verify that is the answer the respondent meant to give, then move on to the Video-on-Demand questions. Telling the respondent they are wrong may offend or embarrass the respondent, possibly increasing the number of interview incompletes.
Resolution: Leave the question as is.

Q15. Video-on-Demand

Recommendation: The question should be moved after the DVR question 21 so that participants will hear the DVR definition first to help them tell the difference between Video-on-Demand and DVR. Also, adding that users can select from a list of pre-selected movies or programs will help to clarify this question and reduce the amount of confusion: "Video-on-Demand allows users to select from a pre-selected list of programs they can view immediately or start anytime, sometimes for a fee, and includes video features such as pause, fast forward and rewind."
Spanish recommendations: Neither concept was understood by most Spanish speakers, not because of the term but because of the lack of knowledge of the service. The recommendation in English may help Spanish respondents understand a little better the intention of the question. We recommend following recommendation in English.
Resolution: Change the question to read: "Video-on-Demand allows users to select from a list of programs they can view immediately or start anytime, sometimes for a fee."

Q16. Number of HDTVs

Recommendation: Revise the definition by removing the detail about the three types of resolution. RTI does not think that 'flat panel screen' should be mentioned in the definition because some people may have projection HDTVs that use a different type of screen. Recommendation is to the change the question to read: "High-Definition is one type of digital television signal that is broadcast at a higher resolution, providing a higher-quality picture and a wider image that more closely resembles a movie screen."

Resolution: Change the question to read: "High-Definition television provides a higher resolution, a higher-quality picture and a wider image that more closely resembles a movie screen."

Q16a, b, c, and d. Probing on Number of HDTVs
Recommendation: Leave these questions as is.
Resolution: Leave the question as is.

Q17. HDTVs receiving HD signals

Recommendation: Including the three ways to receive the HD signals may be confusing for some. Since there are follow-up questions asking how the participant receives HD signals, recommended removing the description from Q17. Also, reiterating that HD means 'high definition' can help to remind the participant what is being asked. Propose changing the question to: "Are any of the HDTVs you just mentioned currently receiving HD signals so that you are able to view HD, or high definition, channels?"
Resolution: Use the recommended wording for the question.

Q18. Ways of receiving HD signals

*Recommendatio*n: Leave the question as is. Although the participants may not be able to fully articulate the different types of signals, if they know whether or not they have satellite or cable service, RTI believes they should be able to answer this question.
Resolution: After "Over-the-air via an antenna?" add the statement: "To get HD over-the-air, you need a special outside antenna."

Q19. DVR Ownership

Recommendation: In order to avoid confusion with similar devices, such as DVD players, we recommend adding a note at the end of the question asking: "…connected to a DVR, a Digital Video Recorder? Remember, we only want to know about DVRs, not VCRs or DVD players or recorders."
Resolution: Do not use the recommendation. Instead, after the question add the statement: "A DVR does not use a tape or a disk."

Q20. Number of Combined DVRs
Recommendation: Leave the question as is.
Resolution: Leave the question as is.

Q21. Number of Separate DVRs

Recommendation: Underline the words "part of" (in Q20) and "separate unit" (in Q21) in order to add emphasis on the difference between the two questions. The revised Q19 should clarify to respondents such as P16S that this does not mean a DVD player.
Resolution: Change the wording of the question to read: "How many working television sets in your household are currently connected to a DVR that is a separate unit from any cable or satellite receiver, such as a TIVO box."

Q22. VCR Ownership

Recommendation: recommend rewording Q22 to mirror that of Q25: "Does your household currently have a working VCR, a Video Cassette Recorder, regardless of whether or not you use it?" This will eliminate both problems discovered by cognitive interviewing.
Resolution: Change the wording of the question to read: "Does your household have a VCR, a Video Cassette Recorder, currently in working order and connected to a working television set, regardless of whether or not you use it?"

Q23. Number of VCRs
Recommendation: Leave the question as is.
Resolution: Leave the question as is.

Q24. Type of VCR

Recommendation: recommend moving the "VCR player only" option to the top of the list. This way, participants will hear this option first and it will help put the other answer options in context. Also recommend rewording the "VCR/DVD/TV combination" and the "VCR/TV combination" answer options to read "VCR and DVD player built-in to a TV" and "VCR built-in to a TV" in order to clarify exactly what is being asked about.
Resolution: Use the recommended changes. Change the response choice "VDR/DVD/TV combination?" to "VCR and DVD player built-in to the TV?" Change "VCR/TV combination?" to "VCR built-in to the TV?"

Q25. DVD Player Ownership

Recommendation: In order to avoid confusion about which DVD players to count and which DVDplayers not to count (see Q26), suggest rewording this question to say: Does your household currently have a working DVD player regardless of whether or not you use it? A DVD player may be used with a television set, on a computer, it may be portable, or it may be built into a personal vehicle. (IF Q23>0 Please do not include any DVD/VCR combinations you may have already told me about.) This revision also clarifies that we are talking about DVD players that are built in to a computer (see Q27). If gaming systems that play DVDs are accepted in this category of "DVD Players" then we suggest adding in "A DVD player may be used with a television set, on a computer or a gaming system, it may…" to all relevant DVD questions.
Spanish Recommendations: Leave the question as is, but we also suggest adding a comment in the Spanish questionnaire saying that this device may or may not record but will play DVDs.
Resolution: Use the recommended wording for the question, and add at the end of the question "A DVD player plays programming from a disk."

Q26. Number of DVD players

Recommendation: In order to avoid confusion about which DVD players to count and which DVD players not to count, suggest rewording this question to say: Does your household currently have a working DVD player regardless of whether or not you use it? A DVD player may be used with a television set, on a computer, it may be portable, or it may be built into a personal vehicle. (IF Q23>0 Please do not include any DVD/VCR combinations you may have already told me about.) This revision also clarifies that we are talking about DVD players that are built in to a computer (see Q27).
Resolution: Leave Q26 as is.

Q27. Type of DVD player
Recommendation: We recommend moving the "DVD player only" option to the top of the list. This way, participants will hear this option first and it will help put the other answer options in context. We also recommend rewording the "DVD/TV combination" answer option to read "DVD player built-in to a TV" in order to clarify exactly what is being asked.

Resolution: Use the recommended response choice wording, "DVD player built-in to a TV." Add a response choice "H. DVD player only for playing video games."

Household Internet Questions

Q28. Internet in the household
Recommendation: Leave the question as is.
Resolution: Leave the question as is.

Q29. Type of internet service

Recommendation: In a situation where someone pays for internet from a source, then hooks up their own wireless router, there are two ways this question can be revised. If only the source is desired, suggest adding the following phrase to the end of the question stem: "If you use Wi-Fi in your home but get your internet from a different source (e.g. cable, satellite, DSL), please only tell us about that other source." This will let participants who pay for internet one way, but also use Wi-Fi, know not to count Wi-Fi. Those who only use Wi-Fi (i.e. piggybacking off of a nearby signal) would still count their access as being through Wi-Fi. If all types of internet use are desired, we suggest adding the following phrase to the end of the question stem: "Please include all ways you access the internet at home." This will indicate to participants that they should include both Cable and Wi-Fi in their answer. If someone answers that they get internet through a cellular network, either interviewers should be trained to probe and see if the respondent is referring to internet on a cell phone or a follow-up question should be added asking "Is your internet that is provided through a cellular network only on a cell phone?" so those who are only thinking of cell phones can be identified.
Resolution: change response choice D to read: "C. Fiber Optic Service, such as U-verse or FiOS?"

Gaming Systems

Q30. Gaming system ownership

Recommendation: Leave the question as is. The one participant who misreported on this question seemed to just not be listening to the question when it was asked.
Resolution: Leave the question as is.

Q31. Gaming system internet use
Recommendation: Leave the question as is.

Resolution: Leave the question as is.
Person Level Media-Related Products

Q39. Video iPod/Mp3 Player ownership

Recommendation: In order to better emphasize the fact that we are only asking about video devices, suggest revising the last sentence of the question to say "Please do not include cell phones or any type of iPod or Mp3 player that does not play videos."
Spanish Recommendation: Leave the question as is, but also suggest adding a comment in the Spanish questionnaire saying that this device does not record music or videos but will play music and videos.
Resolution: Change the question wording to read: "Do you own a video iPod, Zune, or similar type of device? Please do not include cell phones."

Q40. Non-video Mp3 Player ownership

Recommendation: If "non-video" sounds awkward as used in this question, we believe it would not be harmful to replace it with "audio-only". Spanish Recommendations: To remain consistent with the previous question on video iPods, leave the question as is, but add in a comment in the Spanish questionnaire saying that this device does not record music but will play music.
Resolution: Replace "non-video" with "audio-only".

Q42. Cell phone video service subscription

Half of the cognitive interview participants did not know what a video service on a cell phone was.

Recommendation: Leave the question as is unless we want to capture capability instead of use. If capability is the information needed, the question should be reworded to ask: Does your cell phone have the ability to play videos? This will not capture whether their service provides that option or not, or whether they subscribe to it, but rather whether their phone has the ability to view a video.
Resolution: Leave the question as is.

Q43. Cell phone internet access

Recommendation: Leave the question as is unless we want to capture capability instead of use. If the need is to know whether or not a person's cell phone has the ability to access the internet, the question should be reworded to ask: Does your cell phone have the ability to access the internet?
Resolution: Leave the question as is.

Q44. Type of cell phone internet

Recommendation: Leave the question as is or, instead of asking this question, ask what kind of phone the participant has. Though there is a chance they may not know this either, many will at least know something about their phone that could be telling about how the internet is accessed (e.g. an iPhone, a Blackberry). Though this would require more work to find out how each type of phone connects to the internet, it could provide more accurate data.
Resolution: Delete question Q44.

Add two new questions asking the respondent about their willingness to participate in the Nielsen metered survey and the Nielsen Diary sample.

Other Household Members

Answering for other household members

Recommendation: Recommend leaving the questionnaire as is and continuing to ask participants to proxy report for others in their household. One drawback to cognitive interviewing is that the participant is not in their home where they have more resources to obtain the information we are asking for. RTI believed that when the participant is at home and can ask other household members or look at their devices, this will be even less of a problem.
Resolution: Leave the question as is

Ownership under age Six

Recommendation: Leave the questionnaire as is and continue only asking about household members age six and older. RTI did not believe that one instance of a child under age six having an Mp3 player is conclusive enough to change the age limit. However, this is something that should be watched during data collection to determine if people are trying to report media-related products owned by children younger than six years old.
Resolution: Leave the question as is

9. Results Summary

The Primary Characteristics very close to Nielsen UEs for Cable and Satellite penetration with no difference statistically significant for the total sample as well as the African American and Hispanic sub-samples.

There were statistically significant differences in HD receivable and DVD ownership in the total sample. HD households were significantly higher in the CRE African American sub-sample; DVD ownership was particularly lower in Hispanic Households (CRE 67.7% versus 89.1% in Nielsen sample)

Directional (but not significant) differences were found in the number of sets per household in both ethnic sub-samples.

Exhibit 6.   Comparison for Total Sample

		Nielsen Methodology			CRE Methodology (Weighted)			CRE - Nielsen	
Comparison for CRE versus NMR Estimates for the Dallas DMA									
	Question	**Estimate (%)**	**SE**		**Estimate (%)**	**SE**		**Diff in %**	**95% Significant**
TV %	6	99.2			97.6				
		% of TV HHs			**% of TV HHs**				
1 TV Set	7	16.7	1.3		15.0	2.5		-1.7	No
2 TV Sets		29.4			29.3			-0.1	not tested
3 TV Sets		26.8			27.1			0.3	not tested
4+ TV Sets		27.0			28.6			1.6	not tested
Cable: Yes	8	46.2	1.8		45.0	4.4		-1.2	No
Digital Cable:	10	34.4	1.7		34.1	Need		-0.3	not tested
Satellite/ADS	11	36.7	1.7		36.7	4.6		0.0	No
DBS: Yes		36.2			Need to Tabulate			-	not tested
Broadcast Only		17.5			Need to Tabulate			-	not tested
HD: Display	16	58.4			62.8	3.8		4.4	No
HD: Receivable	17	43.5	2.0		50.9	4.1		7.4	Yes
DVR: Yes	19	43.1	2.0		47.5	4.0		4.4	No
VCR	22	58.7			64.2	3.1		5.5	No
DVD	25	89.1			81.2	3.1		-7.9	Yes

Exhibit 7.   Comparisons for African American and Hispanic Households

	Question	Nielsen Methodology		CRE Methodology (Weighted)			CRE - Nielsen	95% Significant
		Estimate(%)	SE	Estimate(%)	SE		Diff in %	
African American TV %	6	99.2		98.7				
1 TV Set	7	6.1	1.9	14.3	3.8		8.2	No
2 TV Sets		38.8		28.0	5.2		-10.8	Not Tested
3 TV Sets		24.4		31.0	4.1		6.6	Not Tested
4+ TV Sets		30.8		26.7	5.9		-4.1	Not Tested
Cable: Yes	8	56.2	4.4	50.8	5.5		-5.4	No
Digital Cable: Yes	10	38.2	4.3	31.7	Need SE		-6.5	Not Tested
Satellite/ADS	11	21.3	3.3	25.1	4.1		3.8	No
DBS: Yes		20.3		25.1			4.8	Not Tested
Broadcast Only		22.5		25.4			2.9	Not Tested
HD: Display Capable	16	35.1	5.3	50.6	4.5		15.5	Yes
HD: Receivable	17	22.6	4.5	35.8	4.1		13.2	Yes
DVR: Yes	19	29.5	4.6	25.6	5.9		-3.9	No
VCR	22	56.4	4.0	59.9	4.6		3.5	No
DVD	25	86.4	2.7	84.0	3.8		-2.4	No
Cell Phone Only				12.9				
Hispanic TV %		99.5		98.6				
1 TV Set	7	13.6	2.9	22.8	6.3		9.2	No
2 TV Sets		26.9		28.5	4.9		1.6	Not Tested
3 TV Sets		28.9		23.1	4.8		-5.8	Not Tested
4+ TV Sets		30.5		25.6	4.8		-4.9	Not Tested
Cable: Yes	8	45.4	3.9	46.7	6.2		1.3	No
Digital Cable: Yes	10	27.4	3.5	33.6			6.2	Not Tested
Satellite/ADS	11	23.1	3.4	15.6	4.0		-7.5	No
DBS: Yes		23.1		15.6			-7.5	Not Tested
Broadcast Only		31.5		37.9			6.4	Not Tested
HD: Display Capable	16	49.4	4.4	60.0	7.0		10.6	No
HD: Receivable	17	30.8	4.1	44.4	7.4		13.6	No
DVR: Yes	19	24.5	3.8	36.4	5.6		11.9	No
VCR	22	50.9	3.7	58.7	5.0		7.8	No
DVD	25	89.1	2.3	67.7	5.5		-21.4	Yes
Cell Phone Only				24.4				

In addition, data were collected for internet access types that Nielsen does not release.

Variable	Label	Unwtd Freq	Wtd Freq	Wtd %	Standard Error	Wtd % (Subgroup for Nested Q's)	Standard Error
Q28	Anyone in your household currently have access to						
	1 = Yes	378	1,758,085	70.8	3.5		
	2 = No (Q32)	252	718,730	29	3.6		
	99 = REFUSED (Q32)	1	5,369	0.2	0.2		
Q29A	Access the internet in your home through Dial-up						
	1 = Yes	27	117,264	4.7	2	6.7	2.9
	2 = No	346	1,621,984	65.3	4.7	92.3	3
	98 = DON'T KNOW	5	18,838	0.8	0.6	1.1	0.8
Q29B	Access the internet in your home through DSL						
	1 = Yes	139	594,960	24	2.9	33.8	3.4
	2 = No	230	1,133,944	45.7	3.2	64.5	3.5
	98 = DON'T KNOW	9	29,181	1.2	0.6	1.7	0.9
Q29C	Access the internet in your home through Fiber						
	1 = Yes	76	375,809	15.1	2.5	21.4	3.2
	2 = No	294	1,351,840	54.5	3.4	76.9	3.2
	98 = DON'T KNOW	8	30,436	1.2	0.7	1.7	0.9
Q29D	Access the internet in your home through Cable						
	1 = Yes	115	551,161	22.2	3	31.4	3.6
	2 = No	259	1,195,944	48.2	3.1	68	3.6
	98 = DON'T KNOW	4	10,980	0.4	0.3	0.6	0.4
Q29E	Access the internet in your home through Satellite						
	1 = Yes	18	86,615	3.5	1	4.9	1.4
	2 = No	356	1,654,840	66.7	3.6	94.1	1.6
	98 = DON'T KNOW	4	16,630	0.7	0.6	0.9	0.8
Q29F	Access the internet in your home through Cellular						
	1 = Yes	139	693,890	28	3.1	39.5	3.3
	2 = No	231	1,029,461	41.5	2.8	58.6	3.5
	98 = DON'T KNOW	8	34,735	1.4	0.7	2	1
Q29G	Are you able to use your computer wirelessly in your						
	1 = Yes	226	1,104,897	44.5	4.1	62.8	3.6
	2 = No	149	641,237	25.8	2.2	36.5	3.5
	98 = DON'T KNOW	3	11,951	0.5	0.4	0.7	0.5
Q30	Your household have Nintendo Wii/Xbox 360/Sony						
	1 = Yes	134	617,658	24.9	2.8	35.1	3.1
	2 = No (Q32)	244	1,140,427	45.9	2.7	64.9	3.1
Q31	Anyone uses Nintendo Wii/Xbox 360/Sony						
	1 = Yes	57	231,185	9.3	1.6	37.4	4.5
	2 = No	76	384,265	15.5	1.9	62.2	4.5
	98 = DON'T KNOW	1	2,207	0.1	0.1	0.4	0.4

Data for personal device ownership and usage were also collected.

Variable	Label	Unwtd Freq	Wtd Freq	Wtd %	Standard Error	Wtd % (Subgroup for Nested Q's)	Standard Error
Q39	You/Household member own video						
	1 = Yes	269	1,201,174	17.3	1.9	19.1	2.1
	2 = No	1,430	5,028,378	72.5	2.1	79.9	2.1
	98 = DON'T KNOW	7	21,960	0.3	0.1	0.3	0.1
	99 = REFUSED	13	43,764	0.6	0.4	0.7	0.4
	Missing	204	636,920	9.2	1		
Q40	You/Household member own any type of						
	1 = Yes	369	1,597,956	23.1	2.2	25.4	2.3
	2 = No	1,335	4,642,118	67	2.2	73.7	2.4
	98 = DON'T KNOW	5	20,184	0.3	0.2	0.3	0.2
	99 = REFUSED	10	35,019	0.5	0.3	0.6	0.4
	Missing	204	636,920	9.2	1		
Q41	You/Household member own a cell phone						
	1 = Yes	1,234	4,827,113	69.6	2	76.7	2.2
	2 = No	474	1,429,876	20.6	2.1	22.7	2.2
	98 = DON'T KNOW	2	5,831	0.1	0.1	0.1	0.1
	99 = REFUSED	7	28,247	0.4	0.3	0.4	0.4
	Missing	206	641,130	9.2	1		
Q42	You/Household member subscribe a video						
	1 = Yes	109	347,852	5	0.8	7.2	1
	2 = No	1,096	4,360,421	62.9	1.9	90.3	1.4
	98 = DON'T KNOW	29	118,839	1.7	0.5	2.5	0.7
	Missing	689	2,105,084	30.4	2		
Q43	You/Household member use cell phone to						
	1 = Yes	444	1,661,938	24	2.2	34.4	2.6
	2 = No	777	3,112,643	44.9	1.7	64.5	2.6
	98 = DON'T KNOW	13	52,531	0.8	0.2	1.1	0.3
	Missing	689	2,105,084	30.4	2		

10. Non-TV Households

In many ways, the most surprising finding was the relatively high number of non-TV households encountered (remember this was 2009, before cord-cutting became a discussion topic.) While the numbers were too small to perform a test of significance, the CRE finding of 97.6% TV households (versus 99.2% for Nielsen) may have been one of the earliest indicators of the decline in the percent of TV households. In order to better understand this larger than expected number of non-TV households, a follow-up survey was conducted in May, 2010. The results were disappointing, in that only three of the thirteen non-TV households were reachable. Four of these households had no provided a phone number; three of the households had phones that were disconnected; three were not contactable—all the contact attempt rules were made. Of the three households reached, one had since gotten a television set, and two watched TV programs on the internet (one was a former cable subscriber.)

11. Recommendations for Nielsen

- Recalculate UE for HD including over-the-air reception to adjust for recent correction to data classification
  - Nielsen Response
  Unfortunately it would be a significant undertaking to "go back in time" and fully identify the misclassified homes for the UE period that we used for these comparisons (start of season UEs based on data collected in July/August). The best we can do is evaluate the data prior to and following the correction of the misclassification. The weighted HD Receivable % went from 47.2% on 4/5/2010 to 53.4% when the issue was fixed on 4/6/2010, an increase of 6.2 points. In the same period the Broadcast Only UE has gone down from 17.5 to 15.5. HD Receivable has also gone up considerably from the 37.3% we used for the comparisons. With the growth in HD and the decline in Broadcast Only, it is hard to say what that 6.2% number (percent of homes that are HD Rec. and Broadcast Only) would have been in Summer 2009.

    The "HD Revised" comparison sheet in the attached assumes an increase of 6.2 points.

    The HD data in this report reflects this re-calculation

- Incorporate non-response findings in UEs –the non-response committee found that the upper income, higher tech households were more likely not to cooperate in a Nielsen metered panel (which could help explain the lower sample representation of HD)
  - Nielsen Response
  We need to get more information on the specifics of this recommendation and how we could do this.

    CRE insights to Practice Committee and Non-Response Committee will follow-up with Nielsen to ensure they have all the information they need.

- Utilize data from back-outs as well, this would increase the pool used for creating the media-related UEs and might increase the representation of higher tech homes
  - Nielsen Response

Considering the CablePlus match and the small number of back outs that provide the level of data we'd need, we do not see this as a tenable option at this time.

- Ask HD questions pre-post install to ascertain accuracy of response; this would help in determining if the question causes confusion.
    - Nielsen Response
    We will take this under advisement.

- In exit interviews, ask if any behaviors delayed because they would trigger home visit (purchases, elimination of equipment, subscription to new service, etc.)
    - Nielsen Response
    We will take this under advisement.

12. Recommendations for Future Work

Best Practices and suggestions for all future CRE and industry studies include

- Spend the time to get questionnaire right:
- Fix the costs in advance
- If possible use experienced interviewers
- Audit the field team
- Try handheld tablet/PC use by interviewers to automate skip patterns
- "Cable" is becoming a generic term—you need to probe if it is wired cable, satellite or telco
- Ask if land-line, land-line + cell phone, or cell phone only
- Re-think industry practice of terminating interview if non-TV HH
    - Develop standard battery of questions for NON-TV households including
        - How long Non-TV
        - Any plans to get TV in future
        - How access video currently
        - Seize the opportunity to probe why and help determine "cord-cutting" impact

Next Steps for CRE is a proposed three market study by the Sample Quality Committee that would include an update on media-related universe estimates encompassing an expanded list of products (tablets, etc.) and more follow-up for non-tv households.