MAGAZINE ROI: QUANTIFYING THE IMPACT OF MAGAZINE INVESTMENT ON BRAND SALES

Britta C. Ware – VP, Research Solutions, Meredith Corporation
Jeff Bickel – VP, Delivery & Analytics, Nielsen Catalina Solutions

I. BACKGROUND

Over the past several years the industry has seen an increased demand for proving marketing accountability* as media options continue to expand and budgets are increasingly scrutinized. In the new media landscape, marketers are increasingly challenging magazines to prove their value and more specifically, to provide empirical evidence that magazines are driving new and repeat sales. Upon closer examination, and particularly in the CPG environment, it appears that this trend can be directly tied to the limited success in demonstrating the role of magazines in current media/marketing mix models. Although improvements have been made in the magazine inputs to models (e.g., MRI Granularity), print can prove difficult to analyze consistently, and effects are typically reported at an aggregate level. Seldom, if ever, is the focus on the impact of an individual publisher or magazine. Advertisers continue to ask for help in demonstrating the value of magazines both at the bottom of the purchase path/funnel (sales) and through the delivery of brand tracker metrics which monitor shifts in more upper funnel consumer attitudes.

85% of U.S. print decision makers rank "Ad Results" 4 or 5 out of 5 among important criteria in determining where to spend print dollars, according to Advertising Perceptions, Wave 15.

Marketing tactics that are broadly applied, but at relatively lower weight, over longer periods of time (such as search and display online and print offline) have posed significant challenges for measurement in traditional marketing mix analysis when compared to heavier weight and/or short term marketing tactics (such as TV, pricing and promotion). While notable progress has been made at improving the inputs to mix models to better account for these differences, broad industry compliance with best demonstrated practices remains a challenge given vendor and methodological fragmentation. In the meantime, experimental design approaches (Test vs. Control) leveraged in the Digital Space (such as NetEffect and Consumer Direct) have been helpful in providing increased clarity in the value of online advertising. These digital measurement techniques have contributed?– at least to some degree - to the confidence in digital advertising and the growth in digital spending, often at the expense of less (perceived) measurable media, such as magazines.

II. SYNOPSIS

Given the similarity of the issue of proper attribution facing both print and digital advertising, this paper will apply Digital best demonstrated measurement practices to Magazines for a more accurate assessment of Print ROI and quantify the impact of magazine advertising on brand sales.

III. METHODOLOGY OVERVIEW

Behavioral Impact Analysis (BIA): Matching and Modeling Methods Overview
The BIA household based matched panel method provides for the most accurate measurement available of the effects of magazines on offline consumption. The test vs. control design employed is a well accepted and developed analysis tool for the CPG industry and other industries such as the Health Care/Pharma industry, where precision of measurement is particularly important. One of the main characteristics of this type of analysis design is its focus on

most accurately answering one question (instead of trying to answer a number of questions at once). The question is whether or not the campaign changed consumer purchasing behavior. Thinly distributed national media, such as Magazine Advertising, particularly benefit in measurement accuracy from this type of analysis because of its ability to create a concentrated exposed test group. This analysis has the particular advantage of benefiting from a robust sample size due to the Nielsen Homescan Panel.

There are three main components that contribute to Nielsen's test vs. control BIA measurement design:

1. **Matching:** Also known as blocking in design of experiments statistics, is a powerful technique that allows us to create very similar test and control groups. Doing this allows us to naturally observe a clean view of the test impact free from non test related phenomena, and minimizing the need to make adjustments by models.

   Specifically we used a hybridized paired/pooled matching method. This allows us to create similar pairs of households (test vs. control) and at the same time minimize overall test vs. control panel differences.

   Matching Variables: Hundreds of measures exist for each household in the panel. From this total a match is created using those variables from the three subsets below that are most associated with the measured brand's volume over the analysis period.
   - Purchase Based Behavior (brand purchase metrics-penetration/volume/occasions, competitors, category, trip metrics, customer/account-level, reported causal)
   - Demo-based (age, household size, income)
   - Geographic (region, DMA, state, long/lat, zip, etc)

   Note: Matching geographically and within account balances the effects of the marketing mix vehicles (media and in-store promotion).

2. **Stepwise Regression Analysis of Matching Variable**: This allows us to customize variable matching importance on a project by project basis. Typically pre period Brand, Competitor and Category purchase behavior of the most important followed by retailers.

3. **ANCOVA Model and Covariate Adjustments:** While matching does a great job of controlling for non test related effects, since we are conducting an in market experiment, uncontrollable events can still occur. Covariates for any remaining non-test related differences controls for these remaining effects, giving us a clean and focused read of the test impact.

Making the jump from Control Store Testing to households based analysis: Store based test vs. control design has been around for a long time and is what the household based approach takes its heritage from. Fundamentally stores are simply aggregations of households; so store data points are aggregations of household data points. For people familiar with store based testing approached this can be a helpful way to understand household test vs. control analysis.

The BIA matching and modeling methodology is focused on accurately addressing the single question of media effectiveness and is founded on years of test vs. control analysis experience. While the complexities of our dynamic CPG marketplace pose challenges for analysis, this product is the most accurate measurement tool available for quantifying the value of media, and now for the first time, the value of magazine advertising.

Magazine Sales Effect Methodology

Nielsen's Magazine Sales Effect solution combines custom analysis that leverages Nielsen's insights into audiences and advertising with its ability to measure offline consumer purchase behavior. Magazine Sales Effect identifies households exposed to print ad campaigns and compares their offline purchasing behavior with those who were not exposed to the campaign.

This Methodology provides two key insights for marketing initiatives:

- Illustrating the sales difference between exposed and non-exposed magazine households as well as determine the underlying components driving this sales difference

- Quantifying ROI for magazine advertising on offline sales

Detail of Magazine Sales Effect Methodology Procedure

Following is an overview and details of the seven step procedure for conduction the Nielsen Sales Effect Methodology adapted for Magazine measurement.

1.	**Actual Household sales derived from Nielsen's 100K HomeScan consumer panel**
2.	**Database match (name, address) between unique active Subscribers and Nielsen Homescan Panel to determine Test (Exposed) Group**
3.	**Control (Unexposed) Group developed based on matching product/category purchase behavior, demographics and geography with Test Group.**
4.	**Nielsen applied it's 'gold standard' ANCOVA analysis methodology to determine average sales difference between households in Test and Control Groups.**
5.	**Unique HH universe is calculated for the magazines in the campaign period using MRI data.**
6.	**Multiply number of Unique HH's reached by campaign by the average sales lift per household (Test vs. Control) to determine annual incremental sales.**
7.	**ROI is calculated based on annual incremental sales generated per media dollar spent (no margin applied).**

Detailed Procedure:

1. Actual Household sales derived from Nielsen's 100K HomeScan consumer panel

The Magazine Sales Effect sample is composed of ~100k Homescan households that provide their offline purchase behavior and demographics as part of their responsibility as Homescan panelists. To ensure projectable results, the Nielsen Homescan Panel is carefully balanced for the demographic characteristics of the universe being measured. In the U.S. the Nielsen Homescan Panel is the largest longitudinal panel representing all-outlet purchases including both Spanish- and English-speaking Hispanics. Shopper data is collected via handheld

scanners which transmit data directly to Nielsen. This data can be used to identify key shopper behavior across stores, TV, online and social media outlets.

2. **Database match between unique active Subscribers and Nielsen Homescan Panel to determine Test (Exposed) Group**

Through a database match with the Magazine Publisher (using a third party, such as Experian), Nielsen determines which Homescan households are subscribers to specific magazines to identify opportunity to see advertising on a household basis.

- Magazine database file include first and last name and address

- Subscribers qualify for the match if they are active subscribers during the majority (75%) of the 12 month period measured:

  ✓ 9 out of 12 issues for monthlies (8 out of 10 for 10x publishing frequency, 6 out of 8 for 8x publishing frequency, etc.)
  ✓ 39 out of 52 for weeklies

3. **Control (Unexposed) Group developed based on matching product/category purchase behavior, demographics and geography with Test Group.**

Nielsen employs a hybridized paired/pooled matching method, enabling creation of identical pairs of households (test vs. control) and at the same time minimize overall test vs. control panel differences.

Matching variables include:
- Purchase Based Behavior (brand purchase metrics-penetration/volume/occasions, competitors, category, trip metrics, customer/account-level, reported causal)
- Demo-based (age, household size, income)
- Geographic (region, DMA, state, long/lat, zip, etc)
- While other media are not expressly controlled for, the matching of Test and Control HH's on brand/category purchasing dynamics and demographics for a 52 week pre period controls for other marketing elements. If other media are consumed by the Test and Control HH's in differing levels, the effect is minimal, since their packaged good consumption is equal.

4. **Nielsen applied it's 'gold standard' ANCOVA analysis methodology to determine average sales difference between households in Test and Control Groups.**

The offline purchasing behavior of those households exposed to the magazine ad campaigns for a particular brand (or group of brands) are compared with those who were not exposed to the campaign. The Sales Impact Analysis uses the aforementioned test vs. control design and ANCOVA analysis which resulting in the ability to isolate the true impact of the print campaign.
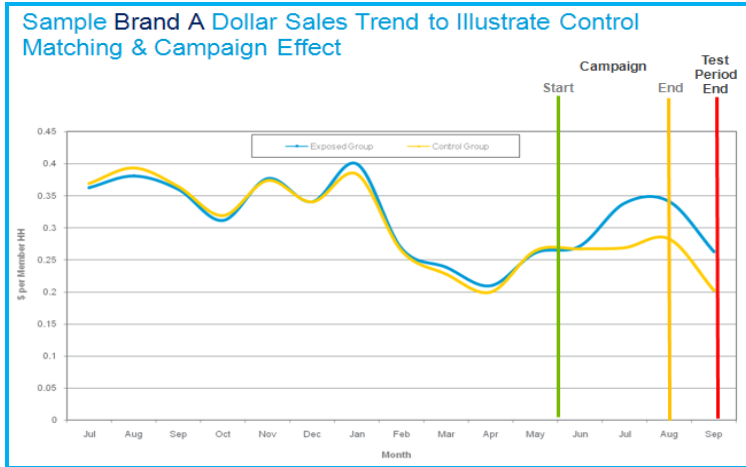
Sample data for illustrative purposes

5. Unique HH universe is calculated for the magazines in the campaign period using MRI data

The Unique HH Universe is calculated by combining net "buyers" of all titles included in the campaign --- MRI's best estimate of newsstand + subscriber --- with net secondary HH universe by assuming the same number of adults/HH in as in primary audience and decreasing the secondary readership proportionally

GfK MRI Approval (Julian Baim, PhD, 8/2011): *"I have reviewed their procedures and believe their computations to be quite reasonable. The calculation of average number of readers in primary households is taken directly from our estimate of primary readers and divided by the concurrently reported published buyer (circulation) estimate. Their assumption of a similar relationship between the number of readers and households among secondary readers is consistent with the direct measurement and probably reflects a very conservative estimate of the household reach. In sum, this estimation procedure is logical and defensible".*

Unique HH Calculation Example

Total Adult 18+ Audience (000)	68,987
Primary Audience	28,530
# of "Buyers"	18,625
ADULTS PER PRIMARY HOUSEHOLD	**1.53**
Secondary Audience	40,457
# of Unique Secondary Households (Divided by number of Adults/Primary HH: **1.53**)	26,411
TOTAL UNIQUE HOUSEHOLDS (PRIMARY + SECONDARY)	**45,036**

Source: Fall 2010 MRI

6. Multiply number of Unique HH's reached by campaign by the average sales lift per household (Test vs. Control) to determine annual incremental sales.

Example: 45,036,000 (Unique Magazine HH Reach) x $.73 (Average Sales Lift between Test and Control HH) = $32,876,280 (Total Incremental Sales Based on 9 title Meredith Campaign)

[note: 5/1/12 correction made since publication to secondary audience impacting total unique HH, 5/1/12]

7. ROI is calculated based on annual incremental sales generated per media dollar spent.

ROI is defined as incremental (gross) sales generated per media dollar spent with no margin applied.

Sample Calculation:

Annual Sales Impact ($ million)	$37.1
Annual Magazine Spend ($ million)	$12.7
Net Sales Impact ($ million)	$24.4
ROI ($)	**$2.92**

IV. SUMMARY OF MEREDITH ENGAGEMENT DIVIDEND STUDIES

This provides an overview of the fourteen case studies that Meredith Corporation conducted powered by Nielsen analytics over the past two years:

Objective:

- Prove that advertising in magazines, and specifically Meredith magazines, drives sales at a positive ROI

Advertisers:

- 14 brands in four CPG categories, Beauty (4 brands), Household Goods (2), Over the Counter (1) and Food (7)

Magazine Media Included:

- Magazine campaigns ran across two or more of Meredith's consumer titles (Better Homes & Gardens, Family Circle, Ladies' Home Journal, More, American Baby, Parents, Fitness and/or Traditional Home)

- The 14 brand schedules ranged in delivery as follows:

	Average Delivery	**Range in Delivery**
# of Insertions	33	10-91
Net Adult 18+ Reach (%)	48.1	27-59
Average Frequency	5.6	2.7 - 10.4
GRPs	269	72 - 608

Campaign Period:

- Magazine advertising ran between July 2009 and December 2010

Measurement Period:

- Annual Sales (52 weeks)

Results:

1. **Sales Lift By Brand Within Category**
   - Food (7 brands)

FOOD: Meredith Advertising Increased Sales

- Households exposed to Meredith magazines spent significantly more on food products (+4% to + 8%) than those not exposed.

> Sales lift per average household:

Control (unexposed)
Meredith Test (exposed)

PASTA SAUCE	SANDWICH SPREAD	BUTTER SUBSTITUTE	FROZEN ENTRÉE	MARGARINE	COOKIES	LUNCH KIT
+8%	+8%	+7%	+7%	+5%	+5%	+4%
$3.91 / $4.20	$3.61 / $3.89	$3.49 / $3.72	$4.77 / $5.08	$2.46 / $2.59	$5.70 / $6.00	$24.43 / $25.49

Average dollar purchases per panel/year (includes non-buyers)

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- Beauty (4 brands)

BEAUTY: Meredith Advertising Increased Sales

- Households exposed to Meredith magazines spent significantly more on beauty products (+5% to + 36%) than those not exposed.

> Sales lift per average household:

Control (unexposed)
Meredith Test (exposed)

LIPSTICK	ANTI-AGING CREAM	BAR SOAP	BODY WASH
+36%	+32%	+16%	+5%
$.26 / $.35	$.65 / $.85	$.50 / $.58	$3.56 / $3.73

Average dollar purchases per panel/year (includes non-buyers)

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- OTC (1 brand)

OTC: Meredith Advertising **Increased Sales**

- Households exposed to Meredith magazines spent significantly more on OTC products (+6%) than those not exposed.

› **Sales lift per average household:**

  - Control (unexposed)
  - Meredith Test (exposed)

+6%

$3.93

$3.69

NASAL DECONGESTANT

Average dollar purchases per panel/year (includes non-buyers)

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- HH Goods (2 brands)

HH GOODS: Meredith Advertising **Increased Sales**

- Households exposed to Meredith magazines spent significantly more on household goods products (+3% to + 4%) than those not exposed.

› **Sales lift per average household:**

  - Control (unexposed)
  - Meredith Test (exposed)

+3%

$4.69

$4.55

+4%

$3.71

$3.55

AIR FRESHENER   **LIQUID SOAP**

Average dollar purchases per panel/year (includes non-buyers)

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2. **Key Sales Drivers**

Key Sales Drivers

- Sales for the majority of brands were driven by an increase in basket size among buying households, while 4 brands increased sales based on increasing number of buying HHs

› **Key sales driver (vs. control):**

	Basket Size $/Buyer HH	% Penetration (Point Lift)
FOOD		
Lunch Kit	+$1.39	
Frozen Entreé	+$1.06	
Sandwich Spread	+$.79	
Pasta Sauce	+$.75	
Cookies	+$.53	
Margarine	+$.47	
Butter Substitute		30.5% (+1.7)
BEAUTY		
Anti-aging Cream		4.8% (+1.2)
Lipstick		4.1% (+0.5)
Bar Soap	+$1.05	
Body Wash	+$.40	
HOUSEHOLD GOODS		
Air Freshener	+$.73	
Hand Soap	+$.34	
OTC		
Nasal Decongestant		12.7% (+0.5)

Meredith HH Spend Increased +$.34 to +$1.39

Meredith Buying HHs Increased +0.5 to +1.7

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3. **ROI Summary** (ROI defined as for every dollar spent the advertised brand received and incremental $x in sales vs. the Control).

ROI Summary

- For every dollar invested in Meredith titles, the 14 brands generated an average ROI of $6.61—resulting in $10.1 million in annual incremental sales and a +10% sales lift vs control

meredith ENGAGEMENT DIVIDEND powered by nielsen

	Unique Meredith Households† (M)		Incremental $ Sales/Meredith HH (vs. control)		Annual Incremental $ Sales Impact (M)	% Sales Difference (vs. control)	ROI*
Food	41.3	X	$.37	=	$15.3	+6%	$13.78
Beauty	40.0	X	$.13	=	$5.2	+22%	$5.59
HH Goods	50.8	X	$.15	=	$7.6	+4%	$1.99
OTC	50.8	X	$.24	=	$12.2	+6%	$5.09
AVERAGE	45.8	X	$.22	=	$10.1	+10%	$6.61

*ROI: For every dollar spent with Meredith, the advertised brand received an incremental $X in sales vs. the control. †Unique household penetration by campaign, Fall 2010 MRI

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V. IMPLICATIONS

The Magazine Sales Effect tool allows marketers and publishers to:

1. Determine the return on financial investment in magazine advertising within specific magazines and magazine publishers.
2. Provide more learning to address the question of what levels are needed in magazine advertising to drives sales.
3. Provide sales data to quantify the impact of magazine advertising on brand sales.
4. Begin to develop a better understanding of sufficient levels of magazine media weight required to generate sales.

VI. NEXT STEPS

1. Further investigation of primary sales drivers (e.g., brand characteristics, messaging, media weight, etc.) through a multi-variate correlation analysis.
2. Extend analysis beyond CPG to other categories such as Auto, Retail and Pharma using broader and more precise database.
3. Extend ROI measurement beyond Magazines to Digital & TV as well as multi-media (or cross platform) analyses.
4. Comparison to/inclusion in Marketing/Media Mix Models.
5. Investigate development of a media planning/optimization tool based on identifying key drivers of sales by category, etc. (including creative standards – e.g., Starch noted/action taken norms, media levels, flighting, etc.).