

MAGAZINE EFFECTIVENESS NOW DIRECTLY OBSERVABLE

Mark Green, The Nielsen Company

There is little information available from longitudinal sources on the interaction of media and purchase habits.

In the past, the analysis of television, radio, and magazine interaction has typically been conducted at single points in time or through correlating viewing, listening, reading and purchasing from four independent studies, or through self reported general surveys like Simmons or MRI. These analyses have also tended to be done at the vehicle level, not at the advertising schedule/exposure level. Today, however, using Project Apollo single source data, new insights are possible mining the interaction between electronic measurement of television and radio, online surveys to capture magazine readership of specific issues, and electronically-scanned purchase data at the respondent level.

Tied to the sales data that is collected from the Homescan panelists or through surveys for non-Consumer Packaged Goods categories, Project Apollo allows the evaluation of the media imperatives or cross- media usage for specific purchase defined marketing targets. Project Apollo will provide a clear view on whether there is a greater opportunity for magazines to garner share for these targets.

Further analyses allow for the evaluation of the interaction between media and sales. Direct measurement of this interaction is the key to understanding how effective each medium is relative to potentially different strategies.

This paper will provide an overview of Project Apollo, with details on its magazine measurement. It will then use two masked brands in a blended case study to tell the story of the single source data in planning. Before closing, the paper will discuss methods. How old methods are being used in new ways; and how new methods are evolving out of the data.

SINGLE SOURCE

The challenge of understanding the effects advertising on sales has long been an unmet marketplace need. Single Source has consistently been posed as the ultimate solution. In 1966, Colin McDonald and Timothy Joyce made the first attempt to collect media and purchasing data in a single panel with a small panel of diary wielding housewives noting every purchase made, television program watched, and magazine read. Since then measurement techniques have moved to electronic metering of television and purchasing, but the challenge of implementation have remained daunting. Throughout the 1980s and into the early 1990s in the United States, IRI, Arbitron, and Nielsen have all tried to field single source media and purchasing measurement panels, only to find the complexity expensive and the resulting economics unprofitable. Yet those data fed a series of papers on AdImpacts, STAS, Loyalty, etc. that re-opened the topics Frequency and Continuity with empirical data. Unfortunately for most media, the measurements, analytics, and debates were about television and purchasing without consideration for the effects and synergies of other media.

After 10 years of exploring the scopes of marketing mixes and data integrations/fusions, the marketplace interest in single source remains strong. And the Arbitron and Nielsen companies, with new portable meters, large electronically monitored purchasing panels and inexpensive Internet surveying infrastructure in hand, decided to form a joint venture called Project Apollo to test whether the time was ripe for single source.

PROJECT APOLLO BACKGROUND

Project Apollo was initiated in 2004 to measure and report individual multiple media consumption and household product purchasing from a single panel of consumers. The first preliminary meeting, sponsored by Procter & Gamble, was held in Ohio in November of that year. The participants liked the single source concept and were strongly interested in Project Apollo's proposed launch, but felt the costs as proposed were too high.

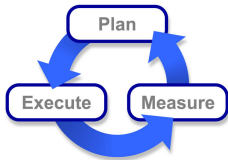
After listening and making adjustments, the Project Apollo joint venture proposed launching a pilot panel at a lower cost in the United States. Throughout 2006 and the early part of 2007, the pilot was built out and data started coming on-line. The Project Apollo joint venture with the hands on involvement of its clients is currently testing its technologies and operations while analyzing the data's value to informing consumer-centric media and marketing decisions.

Project Apollo pilot subscribers include seven advertising leaders: Kraft, Johnson & Johnson, Pepsi, Procter & Gamble, SC Johnson, Unilever and retailer Wal-Mart.

PROJECT APOLLO OVERVIEW¹

Project Apollo collects three types of consumer-centric information from a common sample of consumers:

- ◆ Exposures across multiple media
- ◆ Purchases and related sales response information
- ◆ Attitudes and Lifestyle information

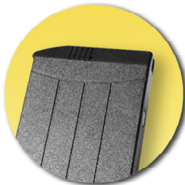


By mining these data in a single panel, marketers can directly observe behaviors and interactions without the fog of modeling to understand what communications work with consumers and how they affect their behavior.

METHODOLOGY DESCRIPTIONS

PPM™ Measurement of Radio and Television

- Television
- Radio
- Broadband audio/video
- Out of Home audio/video
- In-store audio/video in testing



Homescan® Capture of Purchasing



Online Surveys of Readership

- Consumer magazines
- Daily/national newspapers
- Retail circulars
- Attitudes & Lifestyles
- Non-CPG purchasing
- Custom Questionnaires

Portable People Meter: The technology foundation for multimedia reporting is Arbitron’s Portable People Meter (PPM). The PPM is a mobile-phone-sized device that automatically and continuously records the consumer’s exposure to any medium with an audio component that is encoded by the PPM system.

In Project Apollo, the PPM is targeted to measure panelists’ exposure to electronic media:

- ◆ Broadcast TV networks
- ◆ Major Hispanic networks
- ◆ Syndicators
- ◆ National cable networks
- ◆ Radio networks
- ◆ Streaming audio/video (as available)
- ◆ In-store audio/video (as available)
- ◆ The PPM will be used to measure consumption of additional electronic media in the future.

¹ Overview and Methodology descriptions courtesy of Project Apollo joint venture, www.Project-Apollo.com © 2007 Arbitron Inc. and The Nielsen Company

Homescan scanner: The technology foundation for purchase behavior tracking is the Homescan® scanner. It is a small hand-held device that allows panelists to quickly and easily record on an ongoing basis in their homes all consumer packaged-goods products purchased. The data that are collected include:

- ◆ Date of purchase
- ◆ Retail outlet
- ◆ Whether a frequent shopper card was used
- ◆ Number of units purchased
- ◆ Package size, flavor, style, or any other product detail that can be tracked to a single UPC
- ◆ Price paid
- ◆ Coupon usage
- ◆ Method of payment
- ◆ Total dollars spent per shopping trip

Online Surveys: In addition to wearing their meters and scanning their purchases, Project Apollo panelists receive periodic surveys focused on print readership including consumer magazines, newspapers and retailer circulars as well as on non-CPG purchasing, e.g., automotive, financial and cellular services. For the Project Apollo pilot, these other areas are administered via online surveys.

- **Print:** Every panelist aged 13 and older is asked to complete print surveys once every three months. The link to the survey is emailed to the qualifying panelists, and they are asked to complete it in the next 4 weeks. The average compliance rate from these panelists across the surveys is 69.8%. Overall, the survey is designed to take 15 minutes or less to complete and involves four categories of questions: magazines, newspapers, circulars, and weekend magazines.
 - In the case of magazines, the panelist is asked what magazine genres they have read in the past three months, and then which specific issues of roughly 100 magazine titles² they have read. Each issue is identified by the magazine title and a digital picture of that issue's cover on sale date is 4 weeks prior to the survey launch. Since the survey currently measures up to six issues per title, only 24 issues for each weekly magazine title is measured in the course of a year through its four quarterly surveys. All issues are measured for the other magazine types. Since Project Apollo measures issue specific readership, it can report exact reach, duplications, and frequencies for magazine schedules as well as multimedia schedules.
 - In the case of newspapers, the panelist is asked if they read any specific newspaper titles (for national and local publications) in the past six months. For weekdays, panelists are then asked on average how many issues per week they read up to five, and for weekends, panelists are asked how many of the last 4 Sunday issues.
 - In the case of circulars, the panelist is asked if they have read or looked into any in the past six months and then on average how many of the last 4 issues for specific store circulars (like Wal*Mart) or coupon named booklet (like P&G BrandSaver).
 - In the case of weekend magazines (like Parade), the panelist is asked if they read any in the past six months and then on average how many of the last 4 issues they have read.

Pilot Panel: The current pilot panel consists of 5,000 households who use both the Portable People Meter, the Homescan scanner, and who participate in on-line surveys covering their consumption of print and non-consumer products purchases. This sample includes 11,000 plus people ages 6 and over.

MULTIMEDIA MASKED CASE

The Project Apollo clients have started mining the single source data to discern how their consumer targets read, watch, and listen to media. And how commercial exposures in those media affect their sales.

² The specific titles are generally consistent across surveys, though one or two move on and off. The number of titles for each survey is generally 100, but this sometimes changes as titles come on and off.

The following masked results are designed to demonstrate some views on how the data can be examined to illustrate the value of measuring multiple media and purchasing data in the same single source panel. In this case, we will blend the results of two brand analyses and call our resulting brand, Brand Z. While it is meant to represent a single brand, it could easily be a franchise or category as well. Here we examine heavy, medium, light, and no purchasing as separate consumer groups. This could likewise easily reflect loyalists, or category/brand combinations such as heavy category and light brand consumers to highlight brand growth opportunities.

		Persons 25-54			
		Brand Z Purchasing Behavior			
	Media Use	Non-Purchasers	Light	Medium	Heavy
		TOTAL TV	Heavy	115	130
	Medium	98	141	113	103
	Light	87	28	69	71
BROADCAST TV	Heavy	122	149	136	154
	Medium	109	94	97	90
	Light	69	57	68	56
CABLE TV	Heavy	96	94	106	88
	Medium	100	149	123	134
	Light	104	57	71	78
RADIO*	Heavy	97	98	90	96
	Light	104	101	139	91
	Non-Exposed	130	118	89	161
BROADBAND*	Exposed	103	64	113	95
	Non-Exposed	130	116	163	123
MAGAZINES	Heavy	106	65	115	128
	Medium	105	110	105	78
	Light	104	96	80	128
	Non-User	81	144	97	50

Figure 1: Heavy, Medium and Light columns reflect purchasing volume terciles; while the HML rows represent media consumption terciles

The first step is to determine which media have the highest concentrations of buyers. Clearly, the high rated broadcast network television does well across the board. While the more niche cable television networks show strength, they do not perform well amongst the heavy viewers. Radio does well with medium buyers, Internet video (broadband) is marginal, and magazines do well with heavy buyers.

What this means is that your media strategy is highly dependent on your consumer targeting strategy.

If we drill down into an individual medium like magazines, we can see that the general view of magazines is not sufficient to plan media. In the case of brand Z, different magazine genres matter. The buyer concentrations among Entertainment magazine readers are much higher than those among Automotive magazine readers.

		Persons Aged 25-54			
		Brand Z Purchasing Behavior			
	Media Type	Non-Purchasers	Light	Medium	Heavy
		AUTOMOTIVE	Heavy	100	97
	Medium	72	167	114	69
	Light	114	51	85	61
	Non-User	89	346	185	125
CELEBRITY WEEKLY	Heavy	103	126	104	103
	Medium	73	194	40	105
	Light	87	110	62	86
	Non-User	99	95	137	73
ENTERTAINMENT	Heavy	100	154	145	98
	Medium	147	193	97	105
	Light	75	109	109	107
	Non-User	80	48	115	113
EPICUREAN	Heavy	105	135	126	107
	Medium	54	94		73
	Light	32	63	138	
	Non-User	44	48	78	67
SHELTER	Heavy	106	163	128	103
	Medium	26	109	51	58
	Light	50	69		168
	Non-User	53	47	79	74

Figure 2: The Heavy, Medium and Light columns reflect purchasing volume terciles; while the HML rows represent magazine genres

This suggests that media planning should also include looks into genres and dayparts before deciding what communication opportunities are best for the plan.

Program types also offer insights in tandem with genres, suggesting messaging or multimedia messaging strategies.

Another view is potential interaction through duplication. Here we see things like television and radio reaching completely different people; Radio and Internet video (broadband) strongly aligning; and interestingly, magazines interacting differently with many media amongst light, medium, and heavy readers. Drilling into genres finds even stronger affiliations.

		TV			Radio			Magazines				Broadband	
		Light	Medium	Heavy	None	Light	Heavy	None	Light	Medium	Heavy	None	Any
TV	Light				97	107	115	123	111	100	78	99	115
	Medium				96	113	106	74	43	120	140	100	106
	Heavy				134	78	91	124	333	110	90	103	89
Radio	Non-Exposed	97	96	134				62	134	97	102	101	67
	Light	107	113	106				125	89	122	137	103	120
	Heavy	115	106	91				399	231	82	66	82	637
Magazines	None	123	74	124	62	125	399					103	99
	Light	111	43	333	134	89	231					96	221
	Medium	100	120	110	97	122	82					97	199
	Heavy	78	140	90	102	137	66					103	55
Broadband	Non-Exposed	99	100	103	101	103	82	103	96	97	103		
	Exposed	115	106	55	67	120	637	99	221	123	88		

Figure 3: Persons 25-54 and purchase Brand Z

After planning media, genres, and dayparts, magazine titles and television programs can be analyzed including reach and frequency. After the campaign, we tested the sales response lifts for each medium. In this particular case, the Internet video reach was tiny but impactful. Spot radio also performed well. Then magazines come in third significantly outperforming television. These results are for a single masked brand and not representative broad findings. Further investigations are under way are helping to inform Project Apollo clients how each medium is performing.

Media Type	Incremental \$ Per Impression	Response Index
Broadband	\$0.0370	347
Spot Radio	\$0.0200	187
Magazine	\$0.0100	94
Cable TV	\$0.0050	47
Broadcast TV	\$0.0040	37
Local TV	\$0.0038	36
Spot Cable	\$0.0036	34
Syndication	\$0.0020	19

Figure 4: Persons 25-54 and purchase Brand Z

NEW METHODS

The value of single source data is transparent in crosstab work, where we want to examine patterns of behaviors. The data is new, but the methods are not. We can now see real duplications, multimedia reaches, multimedia frequency distributions, and multimedia communication synergies to think about planning and buying in many new ways, but the mechanics for handling the data remain the same.

However in the cases of response analytics and trending, single source opens a window to innovations.

Traditionally, response is calculated using regressions. And with multi-sample datasets, the regression has to be of aggregate views across datasets, such as total sales with total media exposures. Unfortunately, this often leads to flat results as the response effects of advertising wash out over time as homes or people don't react the same or in unison. The more niche the targets or the media platforms, the harder these non-uniform responses are to read with aggregated techniques. Most importantly, strong responses among specific target groups are muted or lost in the cancelling nature of aggregation and averages.

In order to read multimedia response, we had to granularize our methods.

For these sales response lifts, we regress exposures across multiple media to sales, controlling for couponing, trends, and base sales, to determine which people and households were responsive to which media. We then projected the national size of these representative people and homes to determine the effects of those media impressions on sales, letting us calculate the short-term incremental sales dollars each impression delivers by medium.

To trend data, we also prefer to granularize to better understand “linked patterns” and “points in time”. Again we find aggregations can hide relationships in our increasingly fragmented world.

- In the case of “linked patterns”, we might see the following sequence: a Brand A advertising exposure, a competitive Brand B advertising exposure, a competitive Brand B purchase, another Brand A advertising exposure, a Brand A purchase, two more Brand A exposure with no intervening competitive messages, and another Brand A purchase. Seeing let alone understanding what these patterns mean is impossible in the aggregated worldview of non-single source data. We are investigating models to understand these linked patterns as a first step towards tactics to improve Brand A’s win rate.
- In the case of “points in time”, we are plotting exposures by medium alongside price, deal, and sales by week to start engineering directly observable monitoring metrics to track performance by various consumer-centric target groups. In addition to finding meaningful metrics, we are also looking for inflection points like wearout to start mapping out brand marketing triggers. Over time, we hope to build up normative findings to further empower brand managers by making their marketing efforts and levers transparent on a day-to-day basis.

CONCLUSION

While the Project Apollo joint venture is testing the single source waters with its Pilot panel in the United States, it is finding value in anticipated and new places.

This paper’s simple case study highlights the value of understanding a consumer marketing target’s consumption of media (the single source of media and purchasing) as well as its consumption of one medium versus another (the single source of multiple media). The tercile imperatives at the general media level provide insights but when you drill down into genres, dayparts, and program types, the insights deepen with considerations for messaging synergies and specific communication strategies. Reach/frequency analyses and tactical vehicle choices facilitate optimal execution. And afterwards the campaign as demonstrated can have its effectiveness analyzed by calculating sales lift response by medium. This classic plan, execute, analyze loop is contained in the same dataset, making it easy to measure, score, monitor, and hence manage.

This paper’s new method discussion explores data views and potential innovations in the realm of single source data.