

Toward Accountability in Advertising Media Planning: A Brief Overview

Time Frame	What time frame should be used for reach and frequency analysis—daily, weekly, monthly, quarterly, semi-annual, yearly?
Frequency Threshold	If minimum or optimum frequency (n) is required for message effects, what is the value of a media plan in terms of reach ($n+$)?
Message-Vehicle Gap	How large and important is the difference between vehicle (publication, program) and advertising message audiences?
Advertising Carry-Over	How can the cumulative value of advertising media be estimated without aggregating time periods in reach and frequency analysis?
Forecasting Ad Effects	How can likely advertising campaign effects be estimated using media planning models?
Audience Spill-Over	Does targeting of media in the face of limited budgets necessarily sacrifice coverage of other desirable but <i>non-funded</i> targets?
Message Characteristics	How can media planners determine what message characteristics are best, such as advertisement size, length, use of color, and position, among others?
Creative Value	Can the effects of creative effort be separated from media volume when evaluating alternative media plans?
Media Mix	When has an advertising campaign saturated a media category audience? When should multiple media categories be used?
Setting Ad Budgets	How can media planning models help determine how much to spend on advertising?

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Accountability: Naïve versus Sophisticated Approaches

Criteria	Naïve Approach	Sophisticated Approach
Time Frame for Analysis	Pooling insertions over a long period of time - quarter, year	Pooling insertions over a short period of time - monthly, weekly, daily
Frequency Threshold	Assuming that one message exposure will have measurable effects	Using minimum message frequency (n) when defining reach ($n+$)
Message-Vehicle Gap	Ignoring difference between message and vehicle audience size	Recognizing that message audience is typically lower than vehicle audience
Advertising Carry-Over	Reach estimates based on pooling insertions for an entire quarter, year	Using monthly reach estimates plus carry-over rate across months
Forecasting Ad Effects	Inflated media evaluation factors unrealistically raise expectations of campaign effectiveness	Utilize message effective reach ($n+$) assuming some minimum frequency cut-off within a narrow time frame for realistic assessment of likely campaign effectiveness
Audience Spill-Over	Ignoring coverage of closely related target audiences	Evaluating coverage of all relevant target audiences
Message Characteristics	Assuming that bigger is better	Assessing alternate message units for optimum media impact
Creative Value	Increasing media budget instead of improving message effectiveness	Improving message effectiveness to leverage media expenditure
Media Mix	Assuming that one media category effectively reaches the target at all budget levels	Examining media category combinations at all budget levels
Setting Ad Budgets	Inflated evaluations lead to underspending	Set budget based on cost of achieving realistic goals

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Time Frame for Analysis

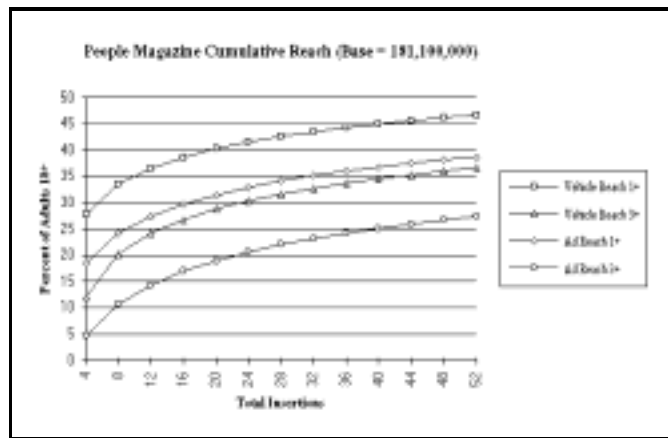
•Naïve

Pooling insertions over a long period of time - quarter, year

•Sophisticated

Pooling insertions over a short period of time - monthly, weekly, daily

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Time Frames Used For Media Plan Evaluation

<u>Media Used</u>	<u>Time Frames Analyzed</u>				
	<u>Daily</u>	<u>Weekly</u>	<u>4 Weeks</u>	<u>Quarterly</u>	<u>Annual</u>
Newspapers	14.3%	27.5%	31.9%	15.4%	14.3%
Network TV	3.3	16.5	50.5	19.8	15.4
Spot TV	3.3	24.2	64.8	19.8	14.3
Cable TV	1.1	13.2	40.7	17.6	9.9
Magazines	1.1	6.6	50.5	33.0	29.7
Network Radio	1.1	14.3	36.3	11.0	11.0
Spot Radio	1.1	18.7	49.5	18.7	9.9
Outdoor Posters	4.4	2.2	38.5	16.5	19.8

Base = 91 Media Directors. Percentages exceed 100 due to the use of multiple media categories and multiple time periods within media categories.

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Frequency Threshold

•Naïve

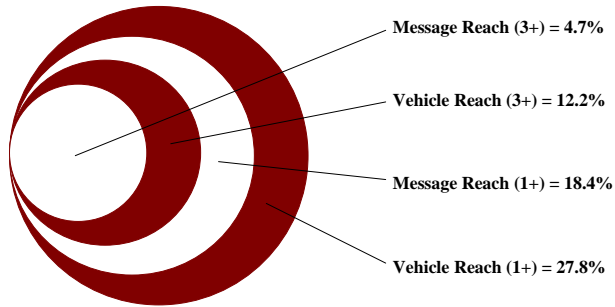
Assuming that one message exposure will have measurable effects

•Sophisticated

Using minimum message frequency (n) when defining reach ($n+$)

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Frequency Threshold



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Message-Vehicle Gap

- Naïve
Ignoring difference between message and vehicle audience size
- Sophisticated
Recognizing that message audience is typically lower than vehicle audience

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Message-Vehicle Ratios by Media Category

Media Category	Average Message-Vehicle Ratio
Newspapers	35.0%
Network TV:	
Daytime	54.7
Prime Time	80.0
Spot TV:	
Daytime	50.0
Prime Time	71.8
Cable TV	63.2
Magazines	52.5
Network Radio	40.3
Spot Radio	37.8
Outdoor Posters	46.6

Base = 28 of 91 Media Directors

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STARCH Adnorms for Message Size and Number of Colors (Adults)

Message Size	Use of Color	Noted (See)		Read Most (Read)	
		Average	Index	Average	Index
Full Page	Four Color	45.6	150	13.4	139
	Two Color	40.9	135	11.9	123
	Black and White	38.6	127	11.1	115
Two-thirds Page	Four Color	40.0	132	12.4	129
	Two Color	35.4	117	10.8	113
	Black and White	33.0	109	10.1	105
Half Page	Four Color	38.1	126	12.0	125
	Two Color	33.5	111	10.5	109
	Black and White	31.2	103	9.7	101
One-third Page	Four Color	37.2	123	11.9	123
	Two Color	32.6	108	10.3	109
	Black and White	30.3	100	9.6	100

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Gallup and Robinson In-View Television Impact Norms

Proved Commercial Registration (PCR)*

30-Second PCR Norms	Adults	Men	Women
All Commercials	31	29	33
All Food	31	26	36
Ages 18-34	33	27	38
Ages 35-49	30	25	35

*PCR is defined as the percent of qualified viewers of the program who, given the brand name/product, can recall and accurately describe the commercial on the day following the telecast.

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Definitions of Effective Reach

Message Impact Required	%	Number of Exposures Required Regardless of Message Impact Level			
		Lower Limit	%	Upper Limit	%
Media Vehicle Exposure (e.g., saw publication or program)	48.4	1 +	6.6	None	58.2
		2 +	5.5	9	4.4
Advertising Exposure (e.g., saw ad in publication or program)	31.9	3 +	61.5	10	6.6
		4 +	17.6	11	2.2
Advertising Impact (e.g., recall product message)	16.5	Other	8.8	Other	15.4
No answer	3.3			No answer	13.2

Base = 91 Media Directors

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Major Reasons Given for Not Using Message-Vehicle Ratios

Reasons	Percent (%)*
Lack of Data to substantiate assumptions	72.5
Each media planning situation is unique	61.5
Clients don't require such sophistication	52.7
Overkill in the manipulation of numbers	44.0
Difficult to be accurate	38.5
Too judgmental	37.4
Too much time spent justifying weights	20.9
Other reasons given	17.6

*Base = 91 Media Directors. Percentages exceed 100 due to multiple responses.

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Advertising Carry-Over

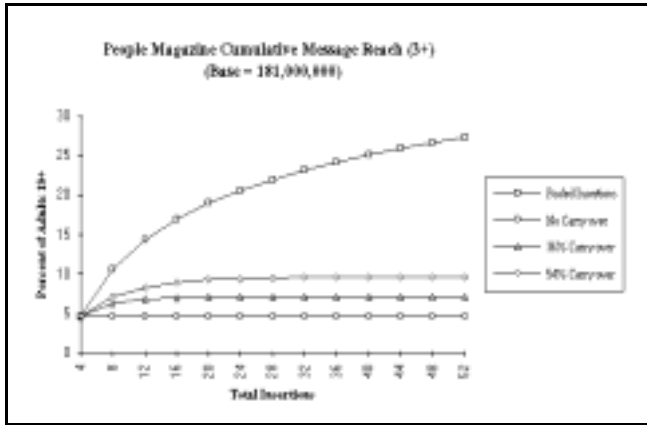
•Naïve

Reach estimates based on pooling insertions for an entire year

•Sophisticated

Using monthly reach estimates plus carry-over rate across months

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Estimating Cumulative Advertising Effects

$$R_t = R_t + \lambda R_{t-1} - (R_t)(\lambda R_{t-1})$$

where:

R = reach ($n+$) of a monthly media plan,

λ = vehicle or advertising message retention rate,

t = a given month.

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Ad Carry-Over Example

Month (t)	Reach (3+) _t	+ Carry-Over (18% × Reach (3+) _{t-1})	- Duplication (Reach (3+) _t)(18% × Reach (3+) _{t-1})	= Total Reach (3+) _t
January	0.20	+ 0.0 (0.18)(0.0)	- 0.0 (0.20)(0.18)(0.0)	= 0.20
February	0.20	+ 0.036 (0.18)(0.20)	- 0.0072 (0.20)(0.18)(0.20)	= 0.229
March	0.20	+ 0.04122 (0.18)(0.229)	- 0.008224 (0.20)(0.18)(0.229)	= 0.233
April	0.20	+ 0.04194 (0.18)(0.233)	- 0.008388 (0.20)(0.18)(0.233)	= 0.234

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Forecasting Ad Effects

•Naïve

Inflated media evaluation factors unrealistically raise expectations of campaign effectiveness

•Sophisticated

Utilize message effective reach ($n+$) assuming some minimum frequency cut-off within a narrow time frame for realistic assessment of likely campaign effectiveness

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Forecasting Problem

- Advertiser measures campaign effects after heaviest quarter of advertising
- Finds low % of target audience can correctly identify ad
 - Corporate theme = 15.5%
 - Major product = 14.7%
- But media plan shows healthy coverage
 - Corporate theme = 92.0%
 - Major product = 84.5%
- Therefore, creative singled out as weak
- Is this conclusion justified?

Selecting Media Evaluation Factors Related to Market Effects

Advertising Campaign/ Message-Vehicle Ratio	Heaviest Quarter		Target % Who Correctly Identified Ad
	Reach (1+)	Effective Reach (3+)	
Corporate Theme			
100% (Vehicle = Message)	92.0%	80.4%	
20	41.2	21.9	
15*	33.7	<u>16.5</u>	<u>15.5</u>
Major Product			
100% (Vehicle = Message)	84.5	61.1	
45	55.1	26.3	
35*	45.9	<u>20.3</u>	<u>14.7</u>

*Three-year average Starch "Noted" score for corporate theme and product headline.

Magazine Audience Sizes and Costs

#	Vehicle Name (Yearly Publication Frequency)	Women (94.65)	Men (86.47)	Adults (181.1)	Cost
1	Better Homes & Gardens (12)	18.75%	5.26%	12.32%	\$136,500
2	Cosmopolitan (12)	10.57	1.49	6.24	64,045
3	Family Circle (17)	16.33	1.84	9.42	89,805
4	Field & Stream (12)	2.60	9.55	5.92	62,790
5	Good Housekeeping (12)	18.58	2.60	10.96	112,995
6	Ladies Home Journal (12)	14.72	1.24	8.28	84,900
7	McCall's (12)	14.01	1.27	7.93	83,315
8	National Geographic (12)	10.28	15.32	12.69	139,280
9	Newsweek (52)	7.95	12.03	9.92	108,050
10	People (52)	19.80	12.37	16.26	91,165
11	Playboy (12)	1.06	8.59	4.65	68,545
12	Reader's Digest (52)	21.70	17.34	19.62	131,000
13	Sports Illustrated (52)	4.26	19.02	11.31	120,950
14	Time (52)	9.69	14.13	11.81	128,000
15	TV Guide (52)	23.60	19.66	21.72	122,000
16	US News & World Report (50)	4.97	8.70	6.75	72,400
17	Woman's Day (52)	14.42	0.95	7.99	79,600

Adplus(TM) RESULTS: MAGAZINES

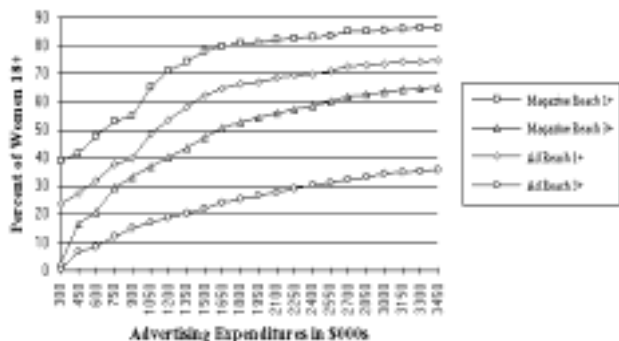
Kent Lancaster
Media Research Institute
Typical Month

Target: 94,650,000
Women 18+
Message/vehicle ratio = 52.5%

Summary Evaluation		Vehicle	Message
Reach (1+)		87.6%	76.6%
Effective reach (3+)		67.6%	37.7%
Gross rating points (GRPs)		424.1	222.7
Average frequency (f)		4.8	2.9
Gross impressions (000s)		401,410.6	210,740.6
Cost-per-thousand (CPM)		\$9.03	\$17.19
Cost-per-rating point (CPP)		\$8,543	\$16,272

Vehicle List	Rating	Ad Cost	CPM-MSG	Ads	Total Cost	Mix
Better Homes	18.75	\$136,500	\$14.65	1	\$136,500	3.8%
Cosmopolitan	10.57	64,045	12.19	1	64,045	1.8
Family Circle	16.33	89,805	11.07	1	89,805	2.5
Field & Stream	2.60	62,790	48.60	1	62,790	1.7
Good Housekee	18.58	112,995	12.24	1	112,995	3.1
Ladies Home J	14.72	84,900	11.61	1	84,900	2.3
McCall's	14.01	83,315	11.97	1	83,315	2.3
National Geog	10.28	139,280	27.27	1	139,280	3.8
Newsweek	7.95	108,050	27.35	4	432,200	11.9
People	19.80	91,165	9.27	4	364,660	10.1
Playboy	1.06	68,545	130.13	1	68,545	1.9
Reader's Dige	21.70	131,000	12.15	1	131,000	3.6
Sports Illust	4.26	120,950	57.14	4	483,800	13.4
Time	9.69	128,000	26.58	4	512,000	14.1
TV Guide	23.60	122,000	10.40	4	488,000	13.5
US News & Wor	4.97	72,400	29.32	4	289,600	8.0
Woman's Day	14.42	79,600	11.11	1	79,600	2.2
Totals:		\$17.19	35	\$3,623,035	100.0%	

Optimum Magazine Reach of Women 18+



Adplus(TM) RESULTS: MAGAZINES

Kent Lancaster
Media Research Institute
Typical Month

Target: 94,650,000
Women 18+
Message/vehicle ratio = 52.5%

Summary Evaluation		Vehicle	Message
Reach (1+)		71.5%	54.6%
Effective reach (3+)		40.8%	18.9%
Gross rating points (GRPs)		233.5	122.6
Average frequency (f)		3.3	2.2
Gross impressions (000s)		221,007.8	116,029.1
Cost-per-thousand (CPM)		\$5.43	\$10.33
Cost-per-rating point (CPP)		\$5,135	\$9,782

Vehicle List	Rating	Ad Cost	CPM-MSG	Ads	Total Cost	Mix
People	19.80	\$91,165	\$9.27	4	\$364,660	30.4%
TV Guide	23.60	122,000	10.40	4	488,000	40.7
Family Circle	16.33	89,805	11.07	1	89,805	7.5
Woman's Day	14.42	79,600	11.11	1	79,600	6.6
Cosmopolitan	10.57	64,045	12.19	1	64,045	5.3
Good Housekee	18.58	112,995	12.24	1	112,995	9.4
Totals:		\$10.33	12	\$1,199,105	100.0%	

Maximum reach (3+), budget: \$1,200,000, time (mm:ss): 00:02
File(s): magwoman

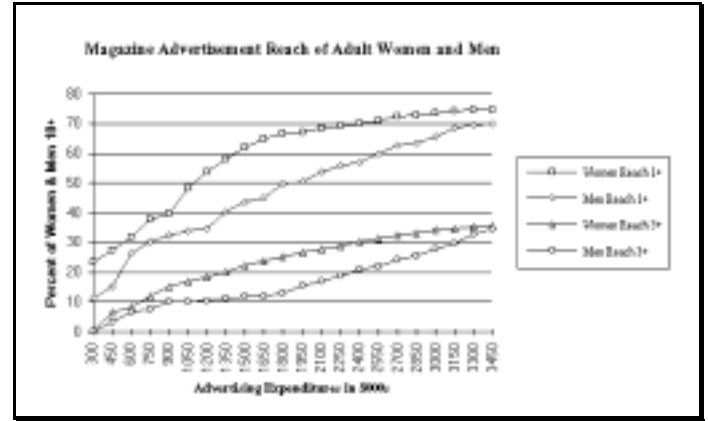
Audience Spill-Over

- Naïve

Ignoring coverage of closely related targets

- Sophisticated

Evaluating coverage of all relevant targets



Message Characteristics

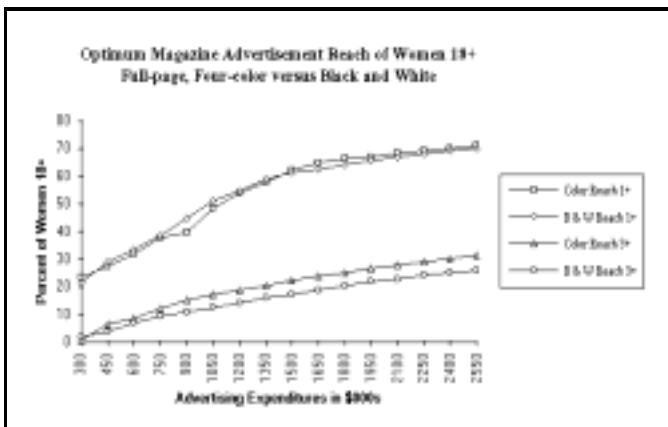
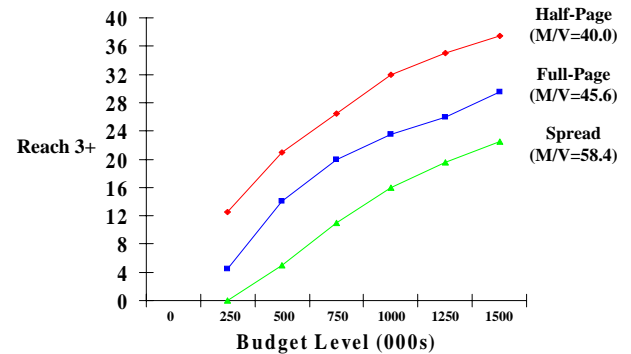
- Naïve

Assuming that bigger is better

- Sophisticated

Assessing alternate message units for optimum media impact

Magazines - Reach (3+) - Various Ad Sizes



ADplus(TM) RESULTS: MAGAZINES

Kent Lancaster
Media Research Institute
Typical Month

Target: 94,650,000
Women 18+
Message/vehicle ratio = 39.4%

Summary Evaluation	Vehicle	Message
Reach (1+)	87.6%	70.3%
Effective reach (3+)	67.6%	26.2%
Gross rating points (GRPs)	424.1	167.1
Average frequency (f)	4.8	2.4
Gross impressions (000s)	401,410.6	158,155.8
Cost-per-thousand (CPM)	\$6.65	\$16.89
Cost-per-rating point (CPP)	\$6,297	\$15,983

Vehicle List	Rating	Ad Cost	CPM-MSG	Ads	Total Cost	Mix
Better Homes	18.75	\$112,890	\$16.14	1	\$112,890	4.2%
Cosmopolitan	10.57	47,590	12.07	1	47,590	1.8
Family Circle	16.33	75,470	12.39	1	75,470	2.8
Field & Scream	2.60	41,735	43.04	1	41,735	1.6
Good Housekee	18.58	90,055	13.00	1	90,055	3.4
Ladies Home J	14.72	71,300	12.99	1	71,300	2.7
McCall's	14.01	70,615	13.52	1	70,615	2.6
National Geog	10.28	107,140	27.95	1	107,140	4.0
Newsweek	7.95	69,455	23.43	4	277,820	10.4
People	19.80	70,730	9.58	4	282,920	10.6
Playboy	1.06	48,940	123.81	1	48,940	1.8
Reader's Dige	21.70	112,660	13.92	1	112,660	4.2
Sports Illust	4.26	79,115	49.80	4	316,460	11.8
Time	9.69	85,000	23.52	4	340,000	12.7
TV Guide	23.60	103,650	11.78	4	414,600	15.5
US News & Wor	4.97	48,500	26.17	4	194,000	7.3
Woman's Day	14.42	66,495	12.37	1	66,495	2.5
Totals:		\$16.89	35	\$2,670,690	100.0%	

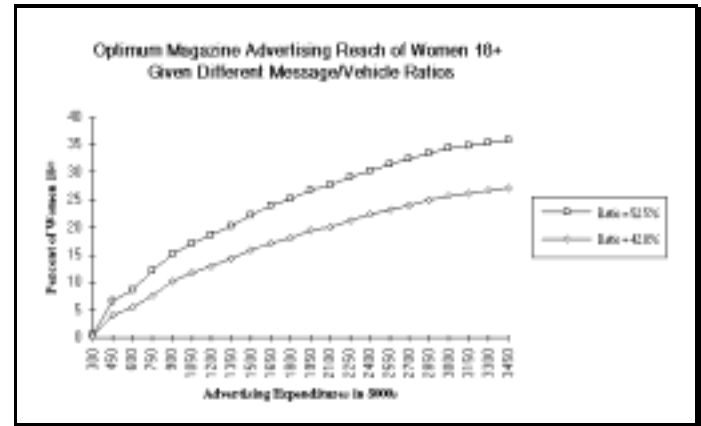
Creative Value

- Naïve

Increasing media budget instead of improving message effectiveness

- Sophisticated

Improving message effectiveness to leverage media expenditure



Media Value of Message Effectiveness

Magazines, Low Cost, \$210,075 per Month

M/V Ratio	Change	Reach (3+)	Reach Change	CPERP*	Media Value of Message Change			
					No Carryover		Carryover=36%	
					Month	Year	Month	Year
57.80	1.10	4.70	0.20		\$9,337	\$112,040	\$14,221	\$170,648
52.50	1.00	4.50		\$46,683				
47.20	0.90	4.20	-0.30		-\$14,005	-\$168,060	-\$21,331	-\$255,972

*Cost-per-effective reach point.

Media Value of Message Effectiveness

Magazines, High Cost, \$989,869 per Month

M/V Ratio	Change	Reach (3+)	Reach Change	CPERP*	Media Value of Message Change			
					No Carryover		Carryover=36%	
					Month	Year	Month	Year
57.80	1.10	24.80	1.20		\$50,332	\$603,988	\$76,661	\$919,933
52.50	1.00	23.60		\$41,944				
47.20	0.90	22.30	-1.30		-\$54,527	-\$654,320	-\$83,050	-\$996,595

*Cost-per-effective reach point.

Saturation

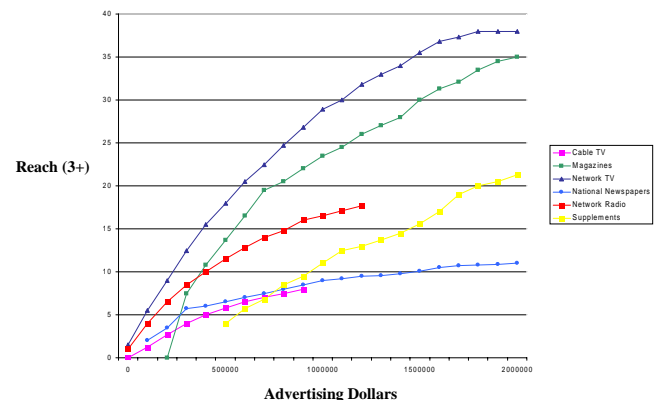
- Naïve

Due to pooling of insertions and focusing on vehicle coverage this approach tends to falsely indicate that spending is close to saturation.

- Sophisticated

By focusing on a narrow time frame and message coverage this approach tends to indicate that spending is far from saturation.

Optimum Reach (3+) For 6 Media Categories



Media Category Saturation

Analytical Approach	Budget	Effective Reach 3+	
		Vehicle	Message
Sophisticated			
Old	\$1,500,000	42.3%	17.6%
New	\$1,600,000	42.5	18.7
Difference	\$100,000	0.2	1.1
Rate of Change	6.6%	0.47	6.3
Budget Impact		0.07	0.95
Naïve			
Old	\$18,000,000	77.9%	70.3%
New	\$19,200,000	79.5	72.1
Difference	\$1,200,000	1.6	1.8
Rate of Change	6.6%	2.1	2.6
Budget Impact		0.32	0.39

Rate of Change = [(New - Old) / Old] x 100

Budget Impact = Reach 3+ Change Rate / Budget Change Rate

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Media Category Saturation

A 1.0% increase in spending increases...

Sophisticated Approach:

- Vehicle reach 3+ by 0.07% (*close to saturation*)
- Message reach 3+ by 0.95% (*nearly constant returns*)

Naïve Approach:

- Vehicle reach 3+ by 0.32% (*strongly diminishing returns*)
- Message reach 3+ by 0.39% (*strongly diminishing returns*)

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Media Mix

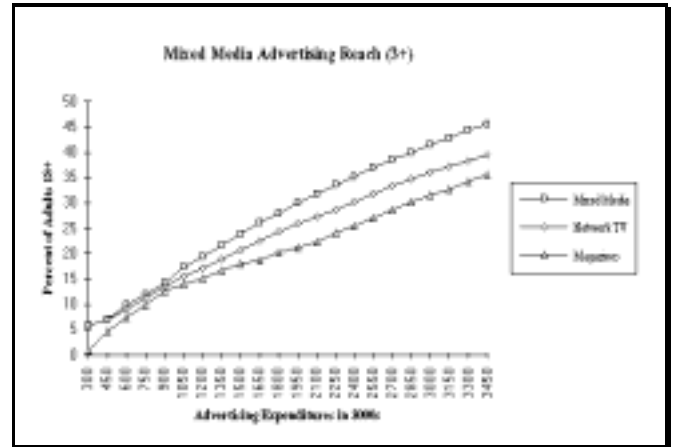
•Naïve

Failure to consider optimum combinations of media to achieve goals.

Assuming, for example, that one media category effectively reaches the target at all budget levels.

•Sophisticated

Examining viable media combinations at all potential budget levels.



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ADplus(TM) RESULTS: NETWORK TV
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Kent Lancaster                Target: 181,100,000
Media Research Institute       Adults 18+
Typical Month                  Message/vehicle ratio = 32.0%

Summary Evaluation
-----
Reach (1+)                      96.6%          94.6%
Effective reach (3+)            95.5%          83.4%
Gross rating points (GRPs)     2,408.8        770.8
Average frequency (f)          24.9           8.1
Gross impressions (000s)       4,362,336.5    1,395,947.6
Cost-per-thousand (CPM)        $3.90          $12.19
Cost-per-rating point (CPP)     $7,066        $22,080

Vehicle List  Rating  Ad Cost  CPM-MSG  Ads  Total Cost  Mix
-----
AM 7-9 Lo    2.30   $4,300   $3.23   20   $86,000     .5%
AM 7-9 Hi    4.50   17,600   6.75   20   352,000     2.1
WD 10-4:30 Lo 1.80   3,400   3.26   40   136,000     .8
WD 10-4:30 Hi 8.00   27,900   6.02   40   1,116,000   6.6
Sports Lo    2.90   20,000   11.90   8   160,000     .9
Sports Hi    7.40   60,000   13.99   8   480,000     2.8
Football Lo  4.30   25,000   10.03   8   200,000     1.2
Football Hi  14.60  270,000  31.91   8   2,160,000   12.7
Sports Events 22.80  360,000  27.25   4   1,440,000   8.5
Prime Time Lo 3.00   18,200   10.47   20   364,000     2.1
Prime Time Hi 20.00  223,400  19.27   20   4,468,000  26.3
News Lo      1.50   6,300   7.25   20   126,000     .7
News Hi     10.30  55,200   9.25   20   1,104,000   6.5
Late Night Lo 1.50   4,200   4.83   20   84,000      .5
Late Night Hi 5.00   32,500  11.22   20   650,000     3.8
Prime Accs Lo 4.00   15,800   6.82   20   316,000     1.9
Prime Accs Hi 15.00  111,700  12.85   20   2,234,000  13.1
Synd Frng Lo 1.50   2,800   3.22   20   56,000      .3
Synd Frng Hi 8.00   37,200   8.02   40   1,488,000   8.7
-----
Totals: $12.19 376 $17,020,000 100.0%
-----

```

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-----
ADplus(TM) RESULTS: MAGAZINES, NETWORK TV
-----
Kent Lancaster                Target: 181,100,000
Media Research Institute       Adults 18+
Typical Month                  Message/vehicle ratio = 41.7%

Summary Evaluation
-----
Reach (1+)                      60.8%          45.7%
Effective reach (3+)            39.4%          19.5%
Gross rating points (GRPs)     320.9          133.8
Average frequency (f)          5.3            2.9
Gross impressions (000s)       581,186.1     242,380.6
Cost-per-thousand (CPM)        $2.06          $4.94
Cost-per-rating point (CPP)     $3,732        $8,949

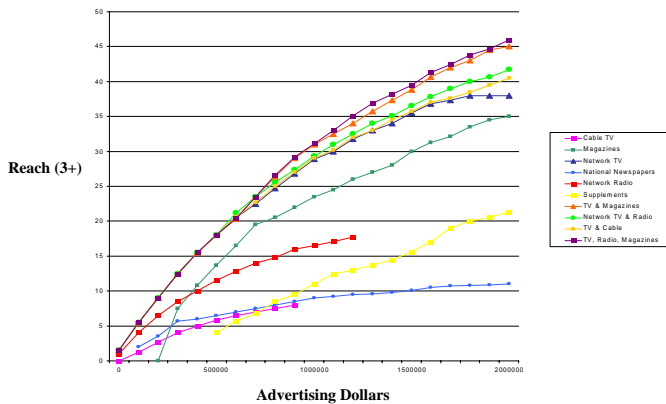
Vehicle List  Rating  Ad Cost  CPM-MSG  Ads  Total Cost  Mix
-----
1 MAGAZINES
Totals: $6.00 8 $852,660 71.2%
People 16.26 $91,165 $5.90 4 $364,660 30.4%
TV Guide 21.72 122,000 5.91 4 488,000 40.7
2 NETWORK TV
Totals: $4.00 95 $345,000 28.8%
Synd Frng Lo 1.50 $2,800 $3.22 20 $56,000 4.7%
AM 7-9 Lo 2.30 4,300 3.23 20 86,000 7.2
WD 10-4:30 Lo 1.80 3,400 3.26 35 119,000 9.9
Late Night Lo 1.50 4,200 4.83 20 84,000 7.0
-----
Totals: $4.94 103 $1,197,660 100.0%
-----
Maximum reach (3+), budget: $1,200,000, time (m:miss): 00:06
File(s): adultmt
-----

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Optimum Reach (3+)

For 6 Media Categories and 4 Combinations



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Setting Ad Budgets

•Naïve

Due to pooling of insertions and focusing on vehicle coverage, this approach will lead to substantial underspending what is necessary to achieve a particular goal.

•Sophisticated

By focusing on a narrow time frame and message coverage, this approach will underscore the substantial spending that is required to achieve a particular goal.

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Setting Ad Budgets (Based on Message Reach 3+ Goal)

Use previous plan(s) as a starting point.

Determine year-end cost-per-message effective reach point (CPERP).

$CPEPRP = \text{Schedule Cost} / \text{Message Effective Reach } 3+$

$\text{New Yearly Budget} = CPEPRP \times \text{Message Effective Reach Goal}$

Naïve Approach: Optimize yearly database at new yearly budget

Sophisticated Approach:

- Optimize monthly database at new yearly budget $\div 12$
- Assign to monthly flowchart with carry-over

Due to (strongly) diminishing returns, repeat steps above until goal is reached.

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