

R·I·T



Printing Industry Center

An Alfred P. Sloan Foundation Center

Print Advertising Media Substitution: Changes in Media Mix for Leading National Advertisers (2003 - 2005)

Matt Swain, M.S. Print Media
Pat Sorce, Ph.D.

Agenda

- Focus of Research
- Advertising Media Studied
- Methodology
- Results
- Conclusions
- Questions

Focus of Research

- Were there significant changes to the distribution of advertising spending by medium between 2003 and 2005?
- Are there differences in media mix by industry of the advertiser?
- Has Internet advertising grown at the expense of other media?

Advertising Media Studied

- Radio
- Television
- Newspaper
- Magazine
- Internet
- Outdoor
- Yellow Pages



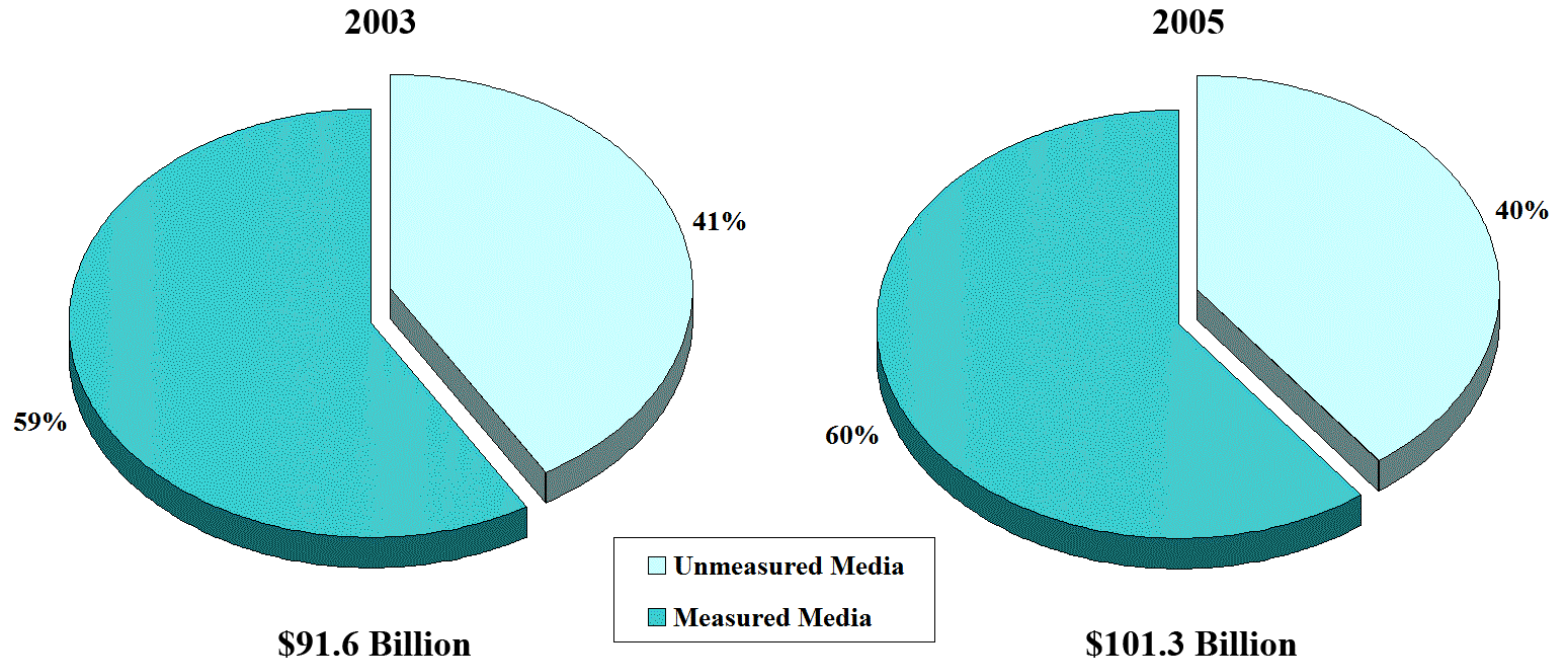
Methodology

- Acquisition of 2003 and 2005 data
 - “100 Leading National Advertisers”
 - Data gathered by TNS Media Intelligence
 - Published yearly in *Advertising Age*
- Data entered into Microsoft Excel spreadsheets
- 2003 data was adjusted for inflation
 - Bureau of Labor Statistics
 - Average inflation: 2.25%

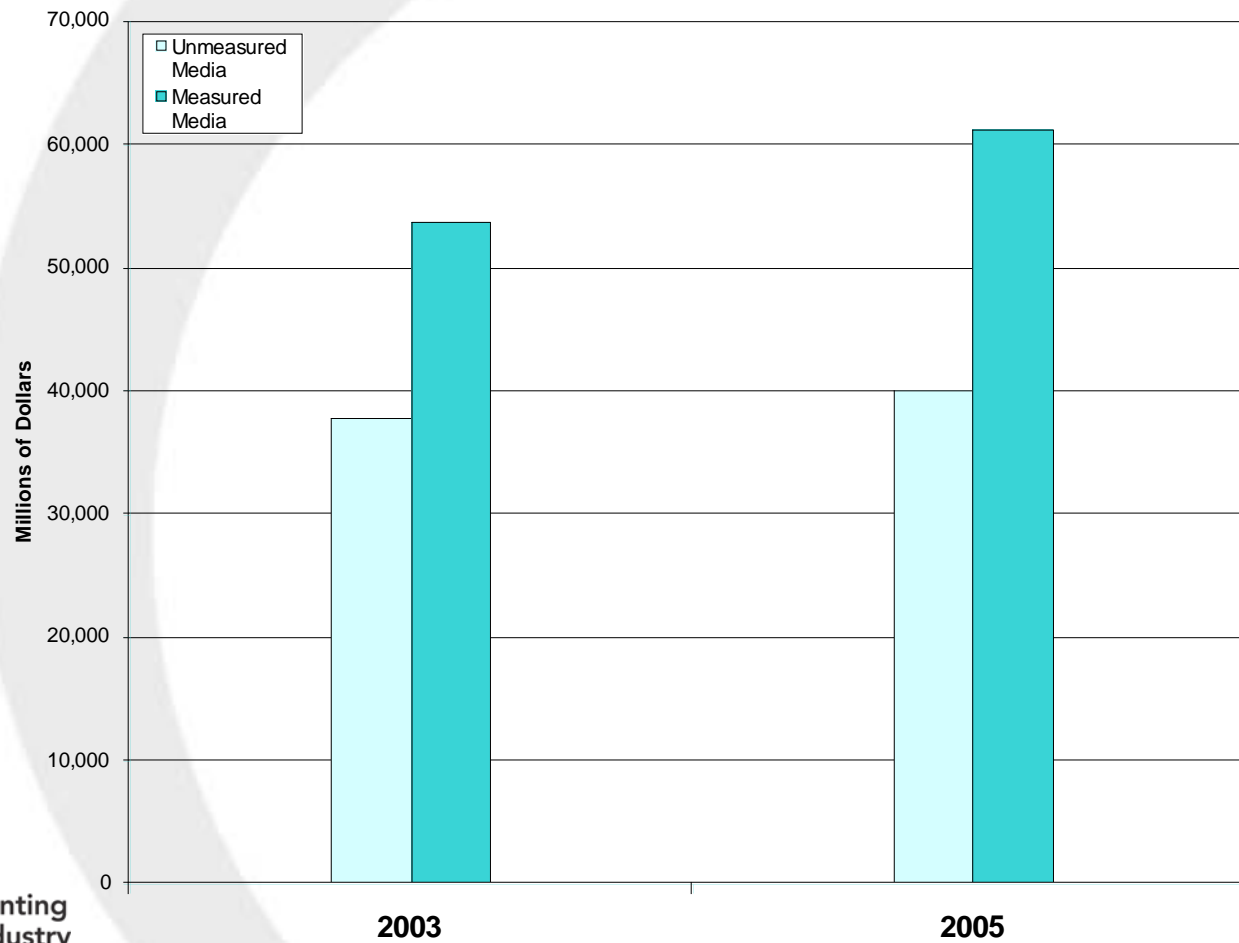
Methodology (cont'd)

- Advertisers organized by industry
 - North American Industry Classification System (NAICS)
- Defining advertisers appearing on both lists
- Statistical analysis tools
 - Two-tailed t-Tests
 - $\alpha = 0.05$
 - Sign Test
 - $\alpha = 0.05$

Measured vs. Unmeasured



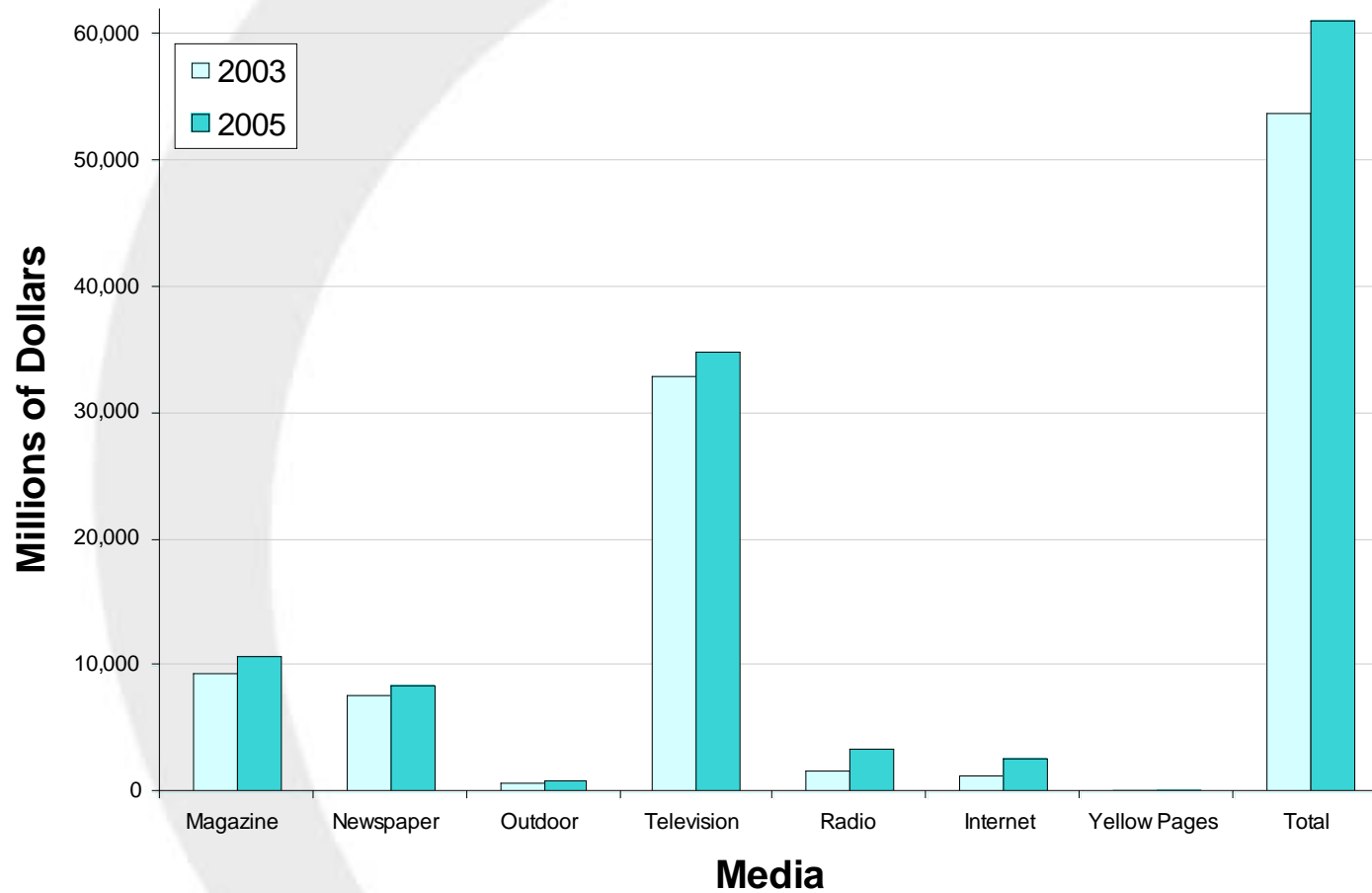
Spending in 2003 and 2005



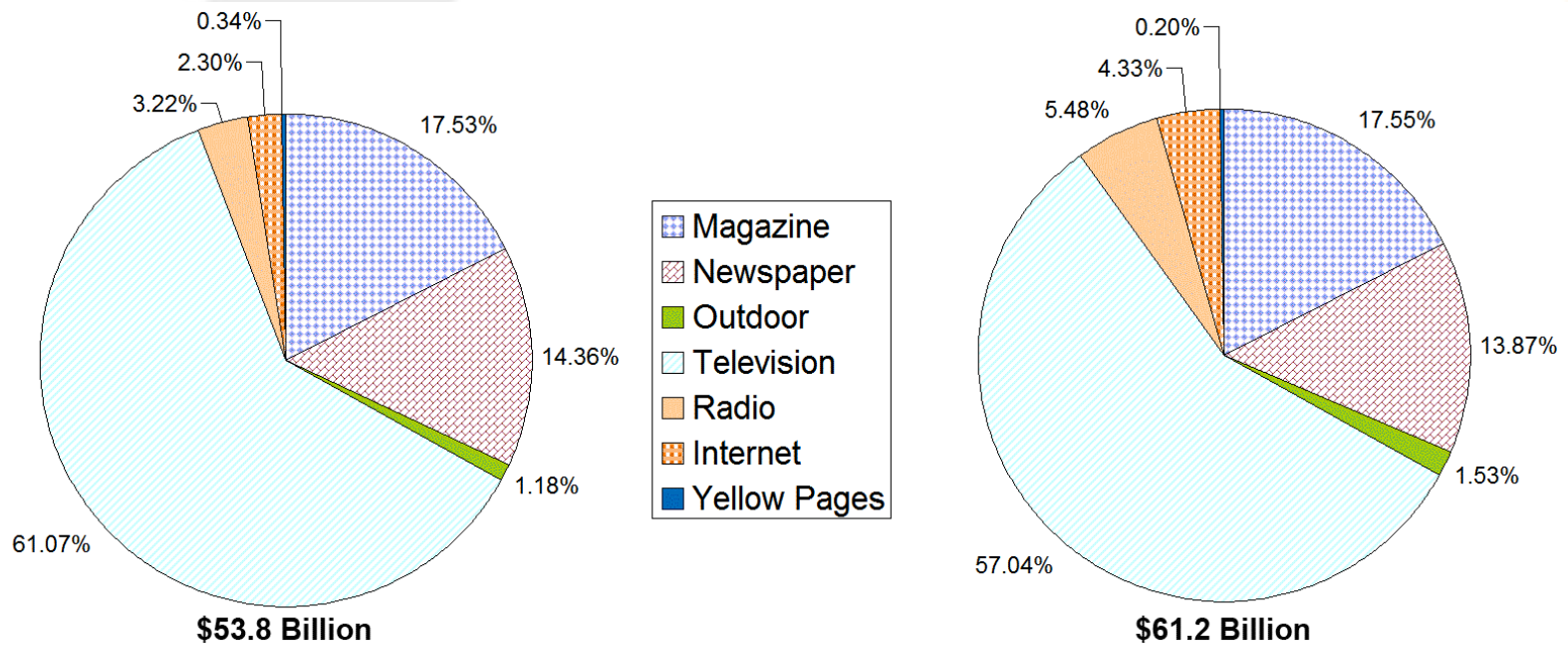
Focus of Research Re-Examined

- ➔ • Were there significant changes to the distribution of advertising spending by medium between 2003 and 2005?
- Are there differences in media mix by industry of the advertiser?
- Has Internet advertising grown at the expense of other media?

Total Measured Advertising Spending by Media



Distribution of Spending on Measured Media



Determining Statistical Significance

Media	Mean (in millions)		% Change in Mean	P(T<=t) two-tail	Statistically Significant
	2003	2005			
Magazine	\$109.25	\$123.44	12.99%	0.480	No
Newspaper	66.13	84.82	28.26%	0.347	No
Outdoor	6.98	9.34	33.86%	0.252	No
Television	367.29	388.15	5.68%	0.692	No
Radio	15.36	34.66	125.59%	0.001	Yes
Internet	13.59	24.30	78.77%	0.016	Yes
Yellow Pages	1.96	0.85	-56.53%	0.144	No

N = 81, $\alpha = 0.05$

Influence of Top 30 Advertisers in Each Medium to the Whole Sample

Media	Percent Influence
Magazine	70.49%
Newspaper	88.41%
Outdoor	85.72%
Television	61.52%
Radio	80.23%
Internet	77.01%
Yellow Pages	100.00%

Sign Test: Yellow Pages Advertising

Advertiser	Spending (in millions)			
	2003	2005	Difference	Sign
Cendant Corp.	27.6	7.0	-20.6	-
Ford Motor Co.	22.0	14.5	-7.5	-
Verizon Communications	11.0	11.8	0.8	+
Home Depot	7.7	5.7	-2.0	-
Yum Brands	7.2	5.4	-1.8	-
General Electric Co.	6.6	4.5	-2.1	-
United Parcel Service	5.9	5.7	-0.2	-
Deutsche Telekom	5.3	4.6	-0.7	-
Wal-Mart Stores	2.6	2.4	-0.2	-

$N = 9, \alpha = 0.05$

Were there significant changes to the distribution of advertising spending by medium between 2003 and 2005?

- Radio **Yes!**
- Television
- Newspaper
- Magazine
- Internet
- Outdoor
- Yellow Pages



1st Conclusion

- ✓ Were there significant changes to the distribution of advertising spending by medium between 2003 and 2005? **Yes.**
- ➡ Are there differences in media mix by industry of the advertiser?
- Has Internet advertising grown at the expense of other media?

Industries Analyzed

Industry	Representation
Automotive (9)	DaimlerChrysler, Ford, GM, Honda, Hyundai, Kia, Nissan, Toyota, Volkswagen
Pharmaceutical (8)	AstraZeneca, Bristol-Myers Squibb, GlaxoSmithKline, Merck, Novartis, Pfizer, Schering-Plough, Wyeth
Fast Food (5)	Burger King, Doctor's Associates, McDonald's, Wendy's, Yum Brands
Department Store (5)	Federated Department Stores, J.C. Penney, Kohl's, Sears, Target
Household Cleaners (4)	Clorox, Procter & Gamble, Reckitt Benckiser, SC Johnson
Soft Drink (3)	Cadbury Schweppes, Coca Cola, PepsiCo
Motion Picture (2)	Time Warner, News Corp
Credit Cards (2)	Mastercard, Visa
Computer (2)	Dell, Hewlett-Packard
Cereal (2)	General Mills, Kellogg Co.

Change in Media Expenditure

Industry (n)	Average							
	Total Change	Magazine	Newspaper	Outdoor	TV	Radio	Internet	Yellow Pages
Automotive (9)	\$129 M	\$12 M	\$28 M	\$3 M	\$37 M	\$14 M	\$12 M	-\$5 M
Pharmaceutical (8)	\$77 M	\$8 M	\$8 M	\$ 0.3 M	\$39 M	\$1 M	\$7 M	\$0 M
Fast Food (5)	\$133 M	\$12 M	\$1 M	\$2 M	\$ 0.2 M	\$26 M	\$3 M	-\$0.4 M
Department Store (5)	\$154 M	\$13 M	\$91 M	\$0.6 M	\$16 M	\$18 M	\$4 M	-\$3 M
Household Cleaners (4)	\$204 M	\$32 M	\$55 M	\$0.3 M	\$80 M	\$5 M	\$6 M	\$0 M
Soft Drink (3)	\$165 M	\$38 M	\$12 M	\$9 M	\$58 M	\$36 M	-\$2 M	\$0 M
Motion Picture (2)	\$159 M	\$9 M	-\$19 M	\$17 M	\$7 M	\$73 M	\$36 M	\$0 M
Credit Cards (2)	\$23 M	\$8 M	\$7 M	\$0.4 M	-\$9 M	\$13 M	-\$5 M	\$0 M
Computer (2)	\$153 M	-\$33 M	\$38 M	-\$1 M	\$45 M	\$6 M	\$86 M	\$0 M
Cereal (2)	\$31 M	\$4 M	\$37 M	-\$0.5 M	-\$37 M	\$1 M	\$11 M	\$0 M

Soft Drink Industry Analysis

Advertiser	Magazine		Newspaper		Outdoor		Television		Radio		Internet	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
Cadbury Schweppes	\$10.2	\$28.7	\$0.1	\$4.7	\$2.0	\$2.0	\$219.5	\$255.2	\$4.3	\$12.0	\$1.1	\$1.5
Coca Cola Co.	26.7	39.1	2.1	12.0	7.4	23.0	252.8	342.8	4.4	48.1	4.0	5.9
PepsiCo	111.0	195.0	7.7	27.9	4.4	15.1	763.1	811.7	4.9	60.5	26.3	19.1

* In millions of dollars

Total Change in Advertising Spending 2003 - 2005	
Advertiser	Change
Cadbury Schweppes	\$73.8
Coca Cola Co.	\$182.1
PepsiCo	\$238.3

Cereal Industry Analysis

Advertiser	Magazine		Newspaper		Outdoor		Television		Radio		Internet	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
General Mills	\$44.0	\$77.7	\$0.2	\$56.8	\$1.0	\$0.3	\$580.9	\$421.1	\$4.4	\$4.8	\$4.0	\$20.3
Kellogg Co.	96.9	70.9	1.3	17.4	0.5	0.0	278.1	366.6	3.4	4.0	4.7	10.6

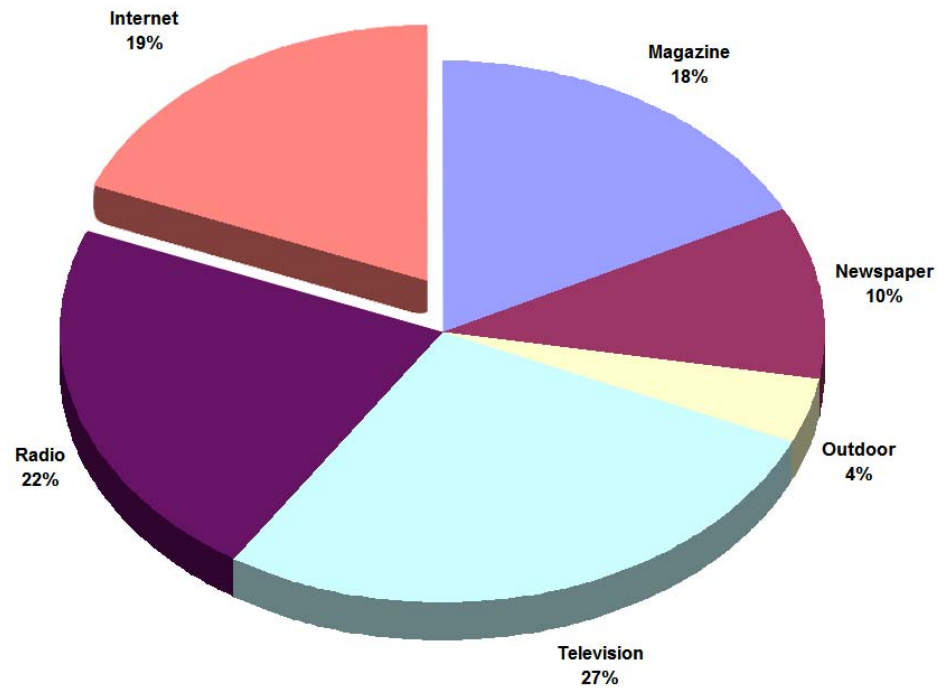
* In millions of dollars

Total Change in Advertising Spending 2003 - 2005	
Advertiser	Change
General Mills	- \$34.8
Kellogg Co.	\$95.5

2nd Conclusion

- ✓ Were there significant changes to the distribution of advertising spending by medium between 2003 and 2005?
- ✓ Are there differences in media mix by industry of the advertiser? **Yes.**
- ➡ Has Internet advertising grown at the expense of other media?

Percent Contribution to Growth



GM's U.S. Advertising Spending by Medium (\$ in millions)

Media	Jan.-Nov. 2006	Jan.-Nov. 2005	% Change
TV	\$1,228.9	\$1,448.0	-15.1%
Magazine	364.5	441.5	-17.4%
Newspaper	196.3	527.6	-62.8%
Internet	110.5	92.6	19.4%
Radio	93.8	106.5	-11.8%
Outdoor	32	37.2	-14.0%
Total	2,026.0	2,653.3	-23.6%

3rd Conclusion

- ✓ Were there significant changes to the distribution of advertising spending by medium between 2003 and 2005? **Yes.**
- ✓ Are there differences in media mix by industry of the advertiser? **Yes.**
- ✓ Has Internet advertising grown at the expense of other media? **Maybe...**

Agenda for Future Research

- Evaluate the change in advertising spending from 2003 through 2006
 - Addition of 2004 and 2006 data
 - Integrate 2003 and 2005 results
- Further research the reason for growth in radio advertising spending and decrease in Yellow Pages advertising

Questions and Comments

Thank you.