

Optimization

Identifying the advertising media schedule with the greatest potential effects given:

- Criteria
- Constraints
- Model

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Optimization Criteria

- Message versus vehicle audience
- Reach (1+)
- Effective reach (3+)
- Average frequency
- Gross rating points
- Cost-per-thousand impressions

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Optimization Constraints

- Target audience
- Budget
- Available vehicles
 - Costs
 - Ratings
- Insertion Limits
- Message-vehicle ratios

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Optimization Model

- Reach-Frequency Algorithms (BBMD)
- Optimization Procedures
 - True, Exhaustive
 - Heuristics
- Overall Capability
 - Media Categories
 - Combinations
 - Speed

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Importance of Optimization

- High cost of advertising
- Problem size
- Problem complexity
- Frequent decisions

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Need for Optimization

High cost

- \$190 billion spent on ads yearly
- \$14 million typical brand budget
- \$200,000+ typical prime-time network TV ad cost
- \$100,000+ magazine 4-color, full-page cost

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Need for Optimization

Problem Size

- 1,073,741,800 possible monthly schedules with 30 monthly magazines (2^{30})
- 17,488,747 possible monthly schedules with up to 4.3 ads in ten weekly magazines (5.3^{10})
- Mixed media schedules
 - 100 consumer magazines
 - 12 cable TV networks
 - 60 prime time TV programs
 - 16 radio networks
 - 25 daytime TV programs
 - 4 national newspapers
 - 100 syndicated TV programs
 - 3 newspaper supplements
- Multiple time periods

Need for Optimization

Problem Complexity

- Separate media characteristics and evaluation
- Mixed-media evaluation
- Message versus vehicle audiences
- Repetition effects
- Wear-out, forgetting, decay, retention
- Schedule timing
- Cost quantity discounts
- Optimization generally and applied to advertising
- Computer speed, power, parallel processing

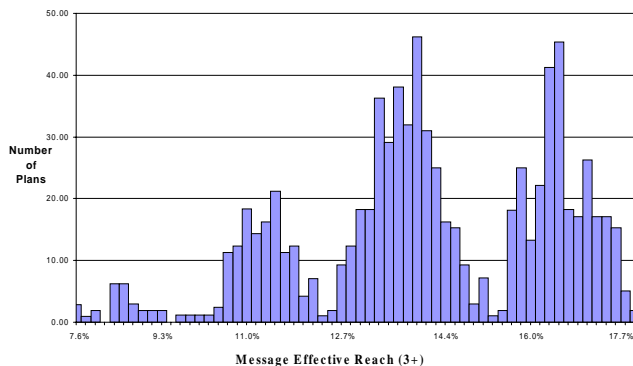
Example Magazine Data Base

Magazine	Rating	Ad Cost	Insertions	
			Minimum	Maximum
1. Reader's Digest	26.6%	\$104,600	0	1
2. TV Guide	25.4	95,900	0	5
3. Family Circle	20.8	75,280	0	1
4. Good Housekeeping	20.8	80,025	0	1
5. Better Homes & Gardens	20.4	95,400	0	1
6. Woman's Day	19.4	66,960	0	1
7. McCall's	16.8	60,800	0	1
8. People	15.2	61,345	0	5
9. Ladies Home Journal	14.7	61,300	0	1
10. National Geographic	12.9	117,715	0	1
11. Time	10.9	114,955	0	5
12. Redbook	10.2	55,255	0	1

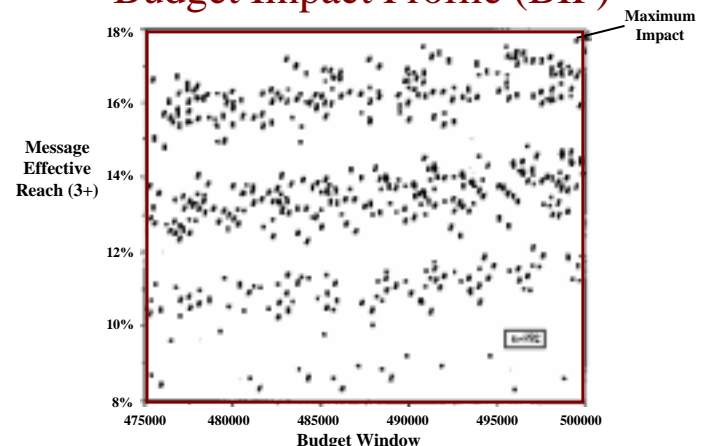
Optimization Problem

Identify the plan that delivers maximum Reach (3+) for \$500,000.

Impact Profile

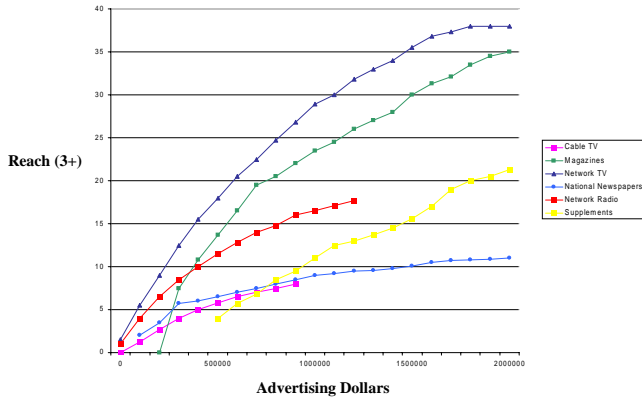


Budget Impact Profile (BIP)



Optimum Reach (3+)

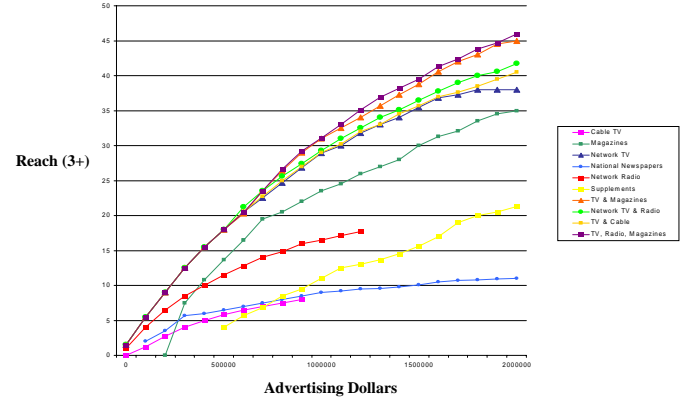
For 6 Media Categories



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Optimum Reach (3+)

For 6 Media Categories and 4 Combinations



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