

Chapter 10.

Promotion Analytics

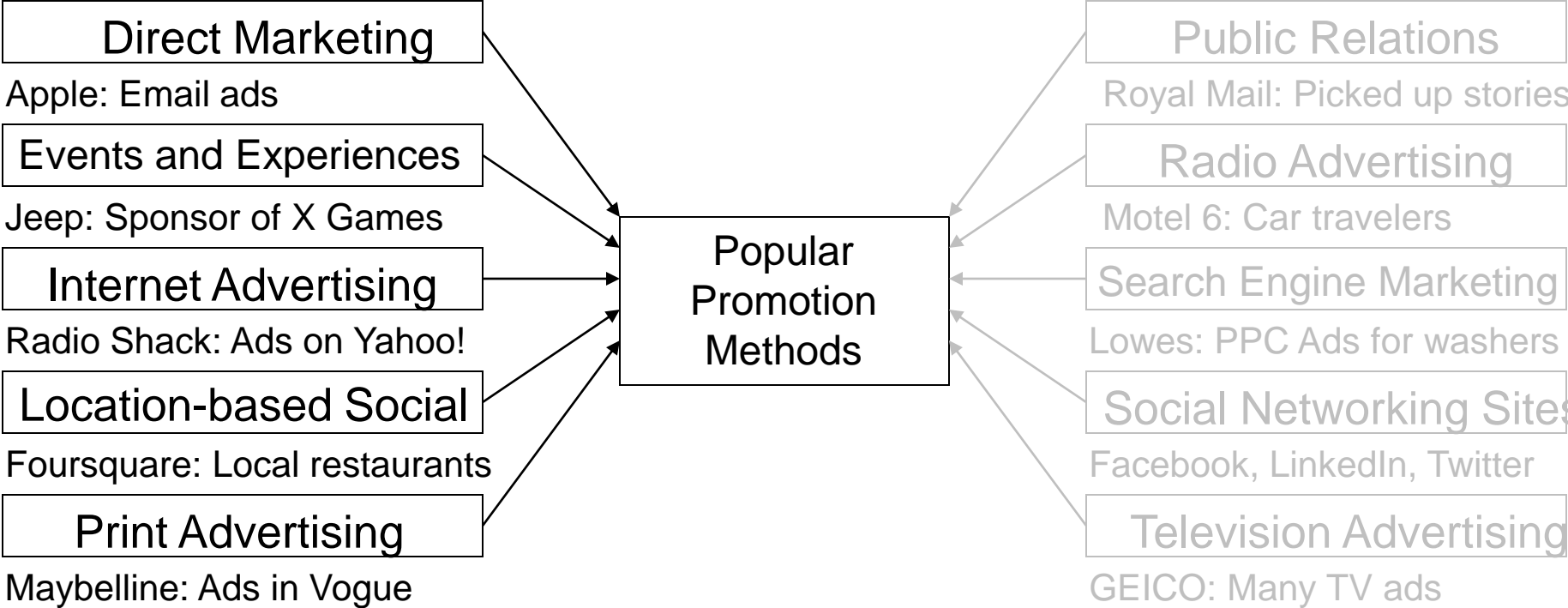
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- Some material adapted from: Sorger, Stephan. “Marketing Analytics: Strategic Models and Metrics. Admiral Press. 2013.

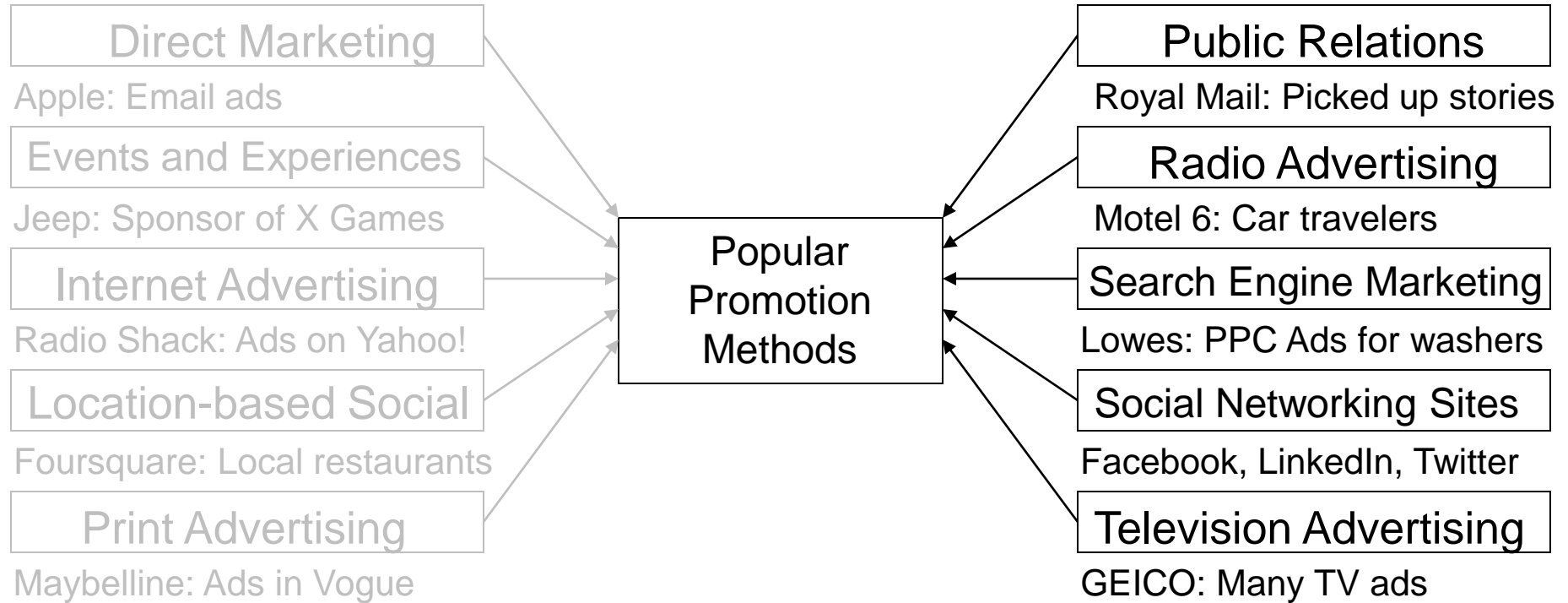
Outline/ Learning Objectives

Topic	Description
Estimation	Explain how to estimate the total promotion budget
Allocation	Describe how to allocate promotion budget across vehicles
Traditional	Address performance metrics for traditional media
Social	Describe tracking metrics for social media

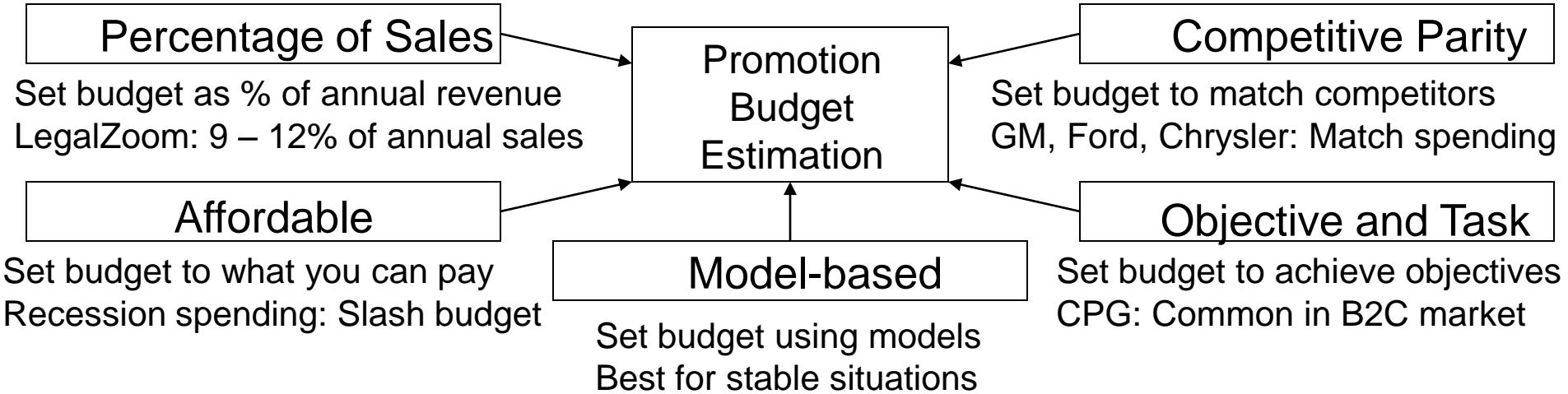
Promotion



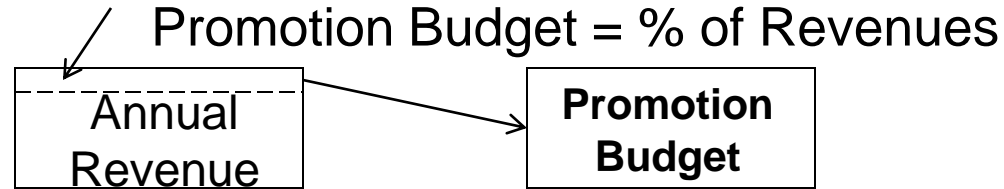
Promotion



Promotion Analytics: Promotion Budget Estimation



Promotion Budget: Percentage of Sales



Description: Set budget as a percentage of company annual revenue

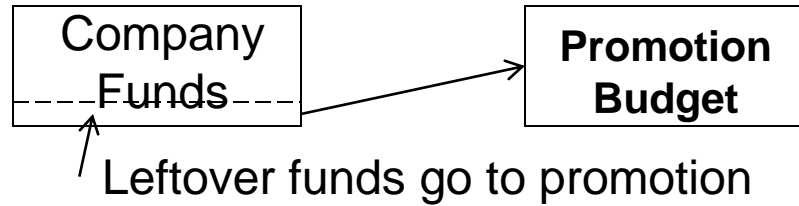
Example: LegalZoom estimates that many businesses spend 9-12%

Sample Calculations for Acme Example:

Acme generated \$100,000 in revenue in the previous year

If they apply 10% to promotion, promotion budget: $10\% * \$100,000 = \$10,000$

Promotion Budget: Affordable Method



Description: Set budget to whatever the organization can afford

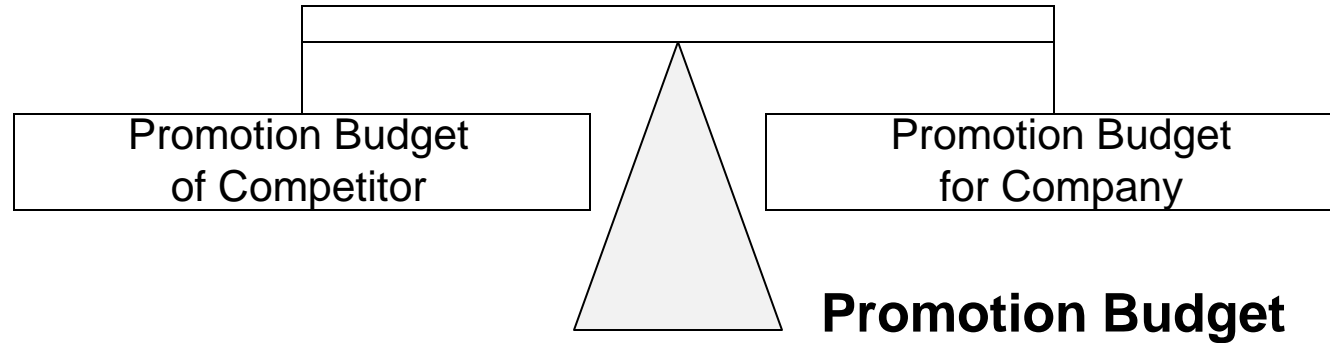
Example: During recession, many companies slashed marketing spending

Sample Calculations for Acme Example:

Acme budgets \$20,000 for all expenses

After spending \$18,000 on rent, etc., \$2000 left for promotional expenses

Promotion Budget: Competitive Parity



Description: Set budget to match what competitors spend

Example: Big 3 auto makers (GM, Ford, Chrysler) match spending levels

Sample Calculations for Acme Example:

See next slide

Promotion Budget: Competitive Parity

Promotion Vehicle	Cost per Ad	Quantity	Subtotal
Print Magazine Ads	\$1,000	30	\$1,000 * 30 = \$30,000
Radio Commercials	\$5,000	20	\$5,000 * 30 = \$100,000
Television Commercials	\$10,000	10	\$10,000 * 10 = \$100,000
<i>Total Spending</i>			<i>\$230,000</i>

Promotion Budget: Objective and Task



Common for Consumer Packaged Goods (CPG): Example:

Market Share Objective: Plans to achieve 10% in category of 40 million potential users

$$10\% * 40 \text{ million} = 4 \text{ million users}$$

Advertising Reach: Plans to reach 80% of potential users

$$80\% * 40 \text{ million} = 32 \text{ million people}$$

Trial Rate: Plans to have 25% of informed prospects try the product

$$25\% * 32 \text{ million} = 8 \text{ million people}$$

Customer Count: 50% who those who try it become customers

$$50\% * 8 \text{ million} = 4 \text{ million people}$$

Advertising Impressions: Exposures to advertisements

30 impressions over 4 week campaign for 25% trial rate for each 1% of population

Gross Rating Points: GRP = 1 exposure to 1% of target population

$$30 \text{ impressions} * 80\% = 2400 \text{ GRP}$$

Advertising Budget: Cost of Gross Rating Points (CPP)

$$\text{CPP in Acme's area} = \$1800/\text{point}; \text{ Budget} = 24900 * \$1800 = \$4320,000$$

Promotion Budget: Model-Based Method

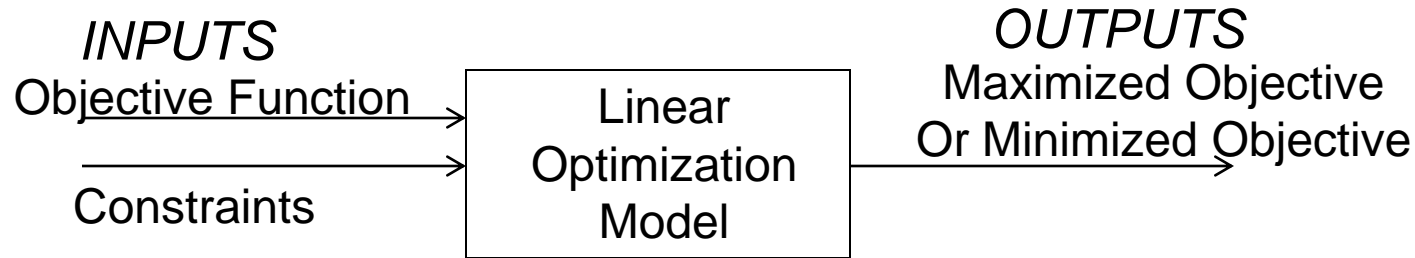
Description: Set budget according to decision model

Example: ADBUDG model used for stable, traditional markets

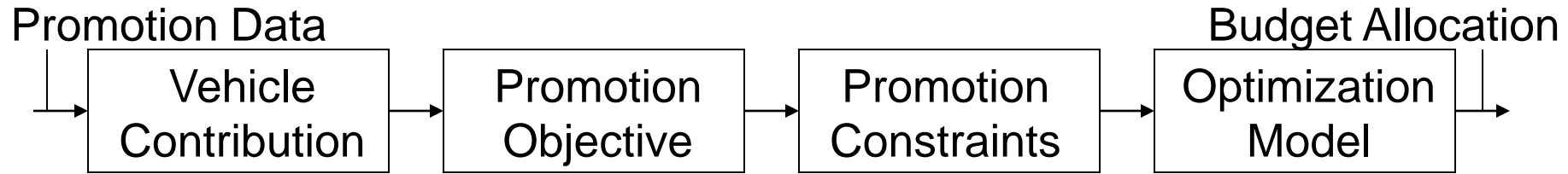
Sample Calculations for Acme Example:

- Estimate market share for each of four conditions:
 - Zero level advertising
 - Maintenance level advertising
 - 50% boost advertising
 - Saturation level advertising
- Build advertising effectiveness curve (model) based on those four points
- Predict market share given a proposed level of spending

Promotion Allocation



Promotion Allocation: Linear Optimization Process



Vehicle Contribution:

Determine effectiveness of campaigns, based on historical data

Promotion Objective:

Declare promotion objective in equation form

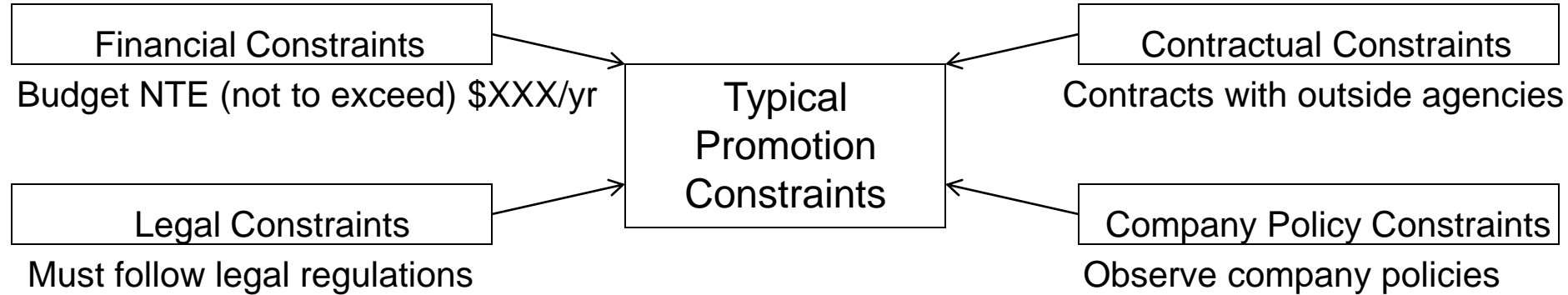
Promotion Constraints:

Specify promotion constraints in equation form

Optimization Model:

Execute model

Promotion Allocation: Constraints



Promotion Allocation: Example

Promotion Vehicle	Audience/Ad	Cost/Ad	Maximum Quantity
D: Direct Marketing	30 Viewers/Ad	\$30/Ad	30
P: Pay Per Click	30 Viewers/Ad	\$40/Ad	20
S: Social Media	40 Viewers/Ad	\$60/Ad	10

Direct Marketing: Emails sent directly to individuals within target market
Pay Per Click: Campaigns displaying ads during relevant Internet searches
Social Media: Paid advertisements on social media platforms

Promotion Allocation: Example

Linear Optimization Element	Equation
Objective Function	$Z = 30 \cdot D + 30 \cdot P + 40 \cdot S$
Constraint #1: Budget	$B = 30 \cdot D + 40 \cdot P + 60 \cdot S \leq \$2,000$
#2: Maximum campaigns/ month: D	$D \leq 30$
#3: Maximum campaigns/ month: P	$P \leq 20$
#4: Maximum campaigns/ month: S	$S \leq 10$

Objective Function

$Z = 30 \cdot D + 30 \cdot P + 40 \cdot S$

The equation applies the following variables:

Z = Our objective, in this case the total number of impressions from all promotion vehicles.

D = Quantity of direct marketing campaigns to run, given that each direct marketing campaign results in 30 viewers per advertisement.

P = Quantity of pay per click campaigns to run, with 30 viewers per campaign.

S = Quantity of social media campaigns to run, with 40 viewers per campaign

Promotion Allocation: Example

Linear Optimization Element	Equation
Objective Function	$Z = 30 \cdot D + 30 \cdot P + 40 \cdot S$
Constraint #1: Budget	$B = 30 \cdot D + 40 \cdot P + 60 \cdot S \leq \$2,000$
#2: Maximum campaigns/ month: D	$D \leq 30$
#3: Maximum campaigns/ month: P	$P \leq 20$
#4: Maximum campaigns/ month: S	$S \leq 10$

Promotion Constraints

$B = 30 \cdot D + 40 \cdot P + 60 \cdot S \leq \$2,000$

The equation applies the following variables:

B = Our monthly budget

D = Quantity of direct marketing campaigns, which cost \$30 each to run.

P = Quantity of pay per click campaigns, which cost \$40 each to run.

S = Quantity of social media campaigns, which cost \$60 each to run.

≤ = Inequality sign, indicating that we may not exceed our maximum budget.

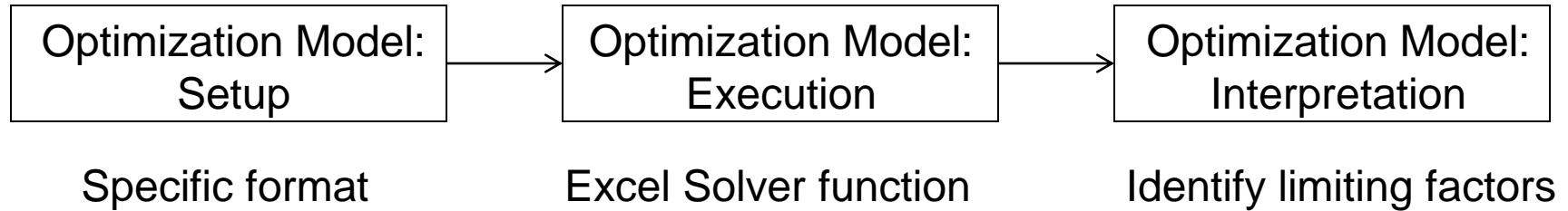
Promotion Allocation: Example

Linear Optimization Element	Equation
Objective Function	$Z = 30 \cdot D + 30 \cdot P + 40 \cdot S$
Constraint #1: Budget	$B = 30 \cdot D + 40 \cdot P + 60 \cdot S \leq \$2,000$
#2: Maximum campaigns/ month: D	$D \leq 30$
#3: Maximum campaigns/ month: P	$P \leq 20$
#4: Maximum campaigns/ month: S	$S \leq 10$

Promotion Constraints

- D ≤ 30:** Cannot exceed 30 direct marketing campaigns per month
- P ≤ 20:** Cannot exceed 20 pay per click campaigns per month
- S ≤ 10:** Cannot exceed 10 social media campaigns per month

Promotion Allocation: Optimization Model



Promotion Allocation: Setup

		Columns for D, P, and S parameters				
	A	B	C	D	E	F
1		D	P	S		
2	Changing Cells	<i>a</i>	<i>b</i>	<i>c</i>		
3						
4	Target Cell	30	30	40	<i>d</i>	
5						
6	Constraint #1: Budget	30	40	60	<i>e</i>	<i>f</i>
7	Constraint #2: D ≤ 30	1			<i>g</i>	<i>h</i>
8	Constraint #3: P ≤ 20		1		<i>i</i>	<i>j</i>
9	Constraint #4: S ≤ 10			1	<i>k</i>	<i>l</i>

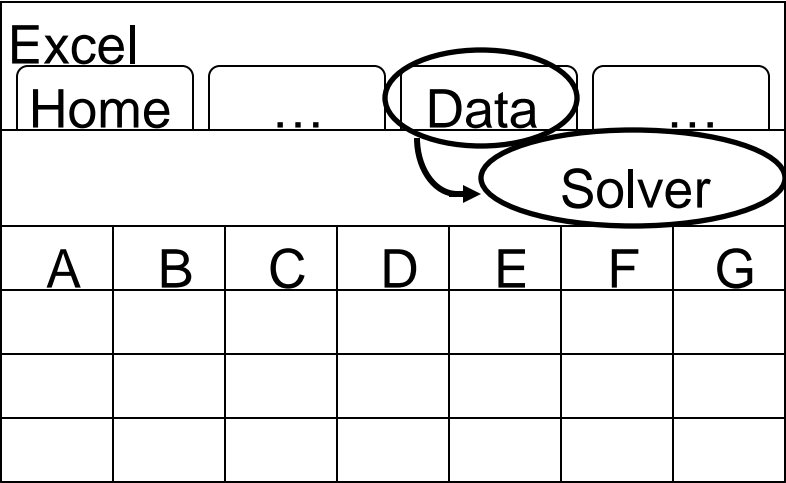
Changing cells for D, P, and S

Target Cell
(Contains objective equation)

Constraint, Left Side
(Contains constraint equation)

Constraint, Right Side
(Contains constraint value)

Promotion Allocation: Execution



Promotion Allocation: Execution

Solver Parameters

Set Target Cell:

Equal To: ☒ Max. ☐ Min.

By Changing Cells:

Subject to the Constraints:

\$E\$6 <= \$F\$6
\$E\$7 <= \$F\$7
\$E\$8 <= \$F\$8
\$E\$9 <= \$F\$9

Solve

Options

Add

Add Constraint

Cell Reference:

<=

▼

Constraint:

OK

Promotion Allocation: Execution

Columns for D, P, and S parameters

	A	B	C	D	E	F
1		D	P	S		
2	Changing Cells	30	20	5		
3						
4	Target Cell	30	30	40	170	
5					0	
6	Constraint #1: Budget	30	40	60	200	200
7	Constraint #2: D ≤ 30	1			30	30
8	Constraint #3: P ≤ 20		1		20	20
9	Constraint #4: S ≤ 10			1	5	10

Changing cells for D, P, and S

Target Cell
(Contains objective equation)

Constraint, Left Side
(Contains constraint equation)

Constraint, Right Side
(Contains constraint value)

Promotion Allocation: Interpretation

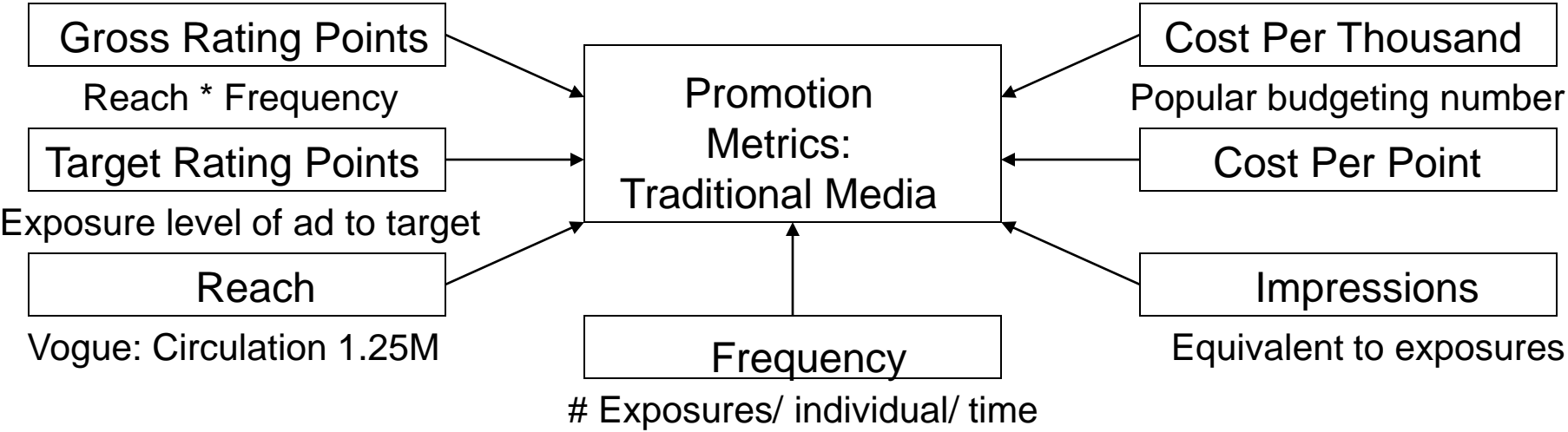
Promotion Vehicle	Solver Result	Cost/Ad	Total Cost per Vehicle
D: Direct Marketing	30 (30 max.)	\$30/Ad	\$900
P: Pay Per Click	20 (20 max.)	\$40/Ad	\$800
S: Social Media	5 (10 max.)	\$60/Ad	\$300
<i>Total Spending</i>			<i>\$2,000</i>

Solver Results: Summary

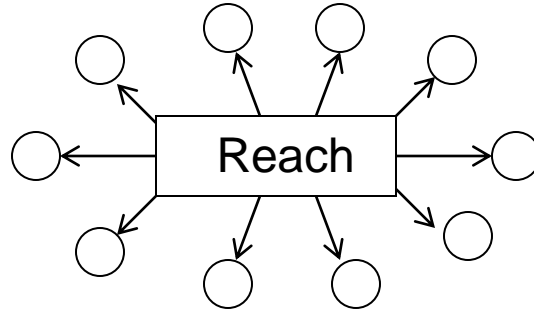
Promotion Vehicle	Solver Result	Max. Allowable	Status
D: Direct Marketing	30	30	Binding
P: Pay Per Click	20	20	Binding
S: Social Media	5	10	Not Binding
Budget	\$2,000	\$2,0000	Binding

Solver Results: Constraints

Promotion Metrics for Traditional Media



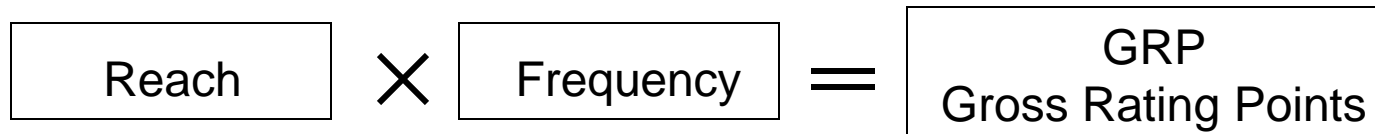
Promotion Metrics for Traditional Media



Reach = size of intended audience targeted by promotion



Frequency = # exposures per individual in target market over given time period



$$\text{GRP} = \text{Reach} * \text{Frequency}$$

Promotion Metrics for Traditional Media

Target Audience
Total Audience

×

GRP
Gross Rating Points

=

TRP
Target Rating Points

Exposure level of ad to the target market

Audience Data	Vogue	Elle
Total Audience	11,398,000	6,302,000
Circulation	1,250,000	1,145,000
Gender: Female %	89%	87%
Education: Any College	64%	70%
Employed	64%	67%

Vogue: %College * %Employed * %Female = 64% * 64% * 89% = 36.5%

Elle: %College * %Employed * %Female = 70% * 67% * 87% = 40.8%

Target Rating Points = (Target Audience) / (Total Audience) * Gross Rating Points
= 36.5% * 50 = 18.25 Target Rating Points

Promotion Metrics for Traditional Media

$$\boxed{\begin{array}{c} \text{CPM} \\ \text{(Cost Per Thousand)} \end{array}} = \boxed{\frac{\text{Cost of Media Buy (\$)}}{\text{Target Audience (in 1000s)}}}$$

Vogue Example:

Circulation = 1.25 million people

4-Color Ad Cost = \$165,000

$$\text{CPM} = (\text{Cost of Media Buy}) / (\text{Target Audience} / 1,000)$$

$$= (\$165,000) / (1.25 \text{ million} / 1,000) = \$132$$

Promotion Metrics for Traditional Media

CPP
(Cost Per Point)

=

Cost of Media Buy (\$)

Vehicle Rating

Magazine	Cost/ Ad	Circulation	CPM	Rating	CPP
Vogue	\$165,000	1,250,000	\$132	36.5	\$4,520
Elle	\$148,000	1,145,000	\$129	40.8	\$3,627

Cost per Point Calculations: Vogue and Elle print magazines

Promotion Metrics for Social Media

Source	Social media conversion sources and events
Blog Subscription	Prospect signs up to be notified of new blog posts
Call Back Requests	Prospect requests callback
Contact Forms	Prospect enters information and clicks Submit
Content Downloads	Prospect requests download of report or other content
Contest Entry	Prospect enrolls in contest by filling out form
Demo Signup	Prospect signs up for live demo or other event
Live Chat	Prospect engages in live dialog with company agent
Purchase	Prospect places online order for product or service
Subscriptions	Prospect requests subscriptions to newsletters
User Registration	Prospect registers to receive ongoing access
Video Viewing	Prospect watches featured video on website
Webinar Signup	Prospect signs up for web-based seminar

Promotion Metrics for Social Media

Category	Description, Target User, Example
Built-in Tools	Metrics capabilities included with social media application Target: Small businesses or personal use Example: Metrics within Facebook, LinkedIn, Twitter
Aggregators	Combines metrics from multiple sources Target: Small businesses Example: Hootsuite, Klout, SocialMention
Professional	Provides deep dive into significant data Target: Dedicated social media professional Examples: Cision, Cymfony, Radian6, ScoutLabs

Social media measurement tool categories

Promotion Metrics for Social Media

Vehicle	Sample Measurement Capabilities
Facebook	Fans: Total fans; New fans; Removed fans Subscribers: Un-subscribers; Re-subscribers Interactions: Total number of comments; Wall posts
LinkedIn	Personal account, standard: Profile views Personal account, Business Plus: Traffic sources LinkedIn Groups: Total members; New postings
Twitter	Number of followers; Number of followings; Number of tweets
YouTube	Views: Total views; Unique viewers Popularity: Relative popularity; Top videos Hot Spots: Viewership compared to other same-length videos

Social media measurement tools: Native (built-in) tools

Promotion Metrics for Social Media

Tool	Sample Measurement Capabilities
Hootsuite	Social media dashboard to manage & measure social networks Tracks brand mentions and analyzes social media traffic
Klout	Estimates level of influence based on data from Facebook, etc. Displays list of most influential followers
Socialmention	User-selected sources: Facebook, Twitter, YouTube, etc. Social media insight: Strength, Sentiment, Passion, Reach

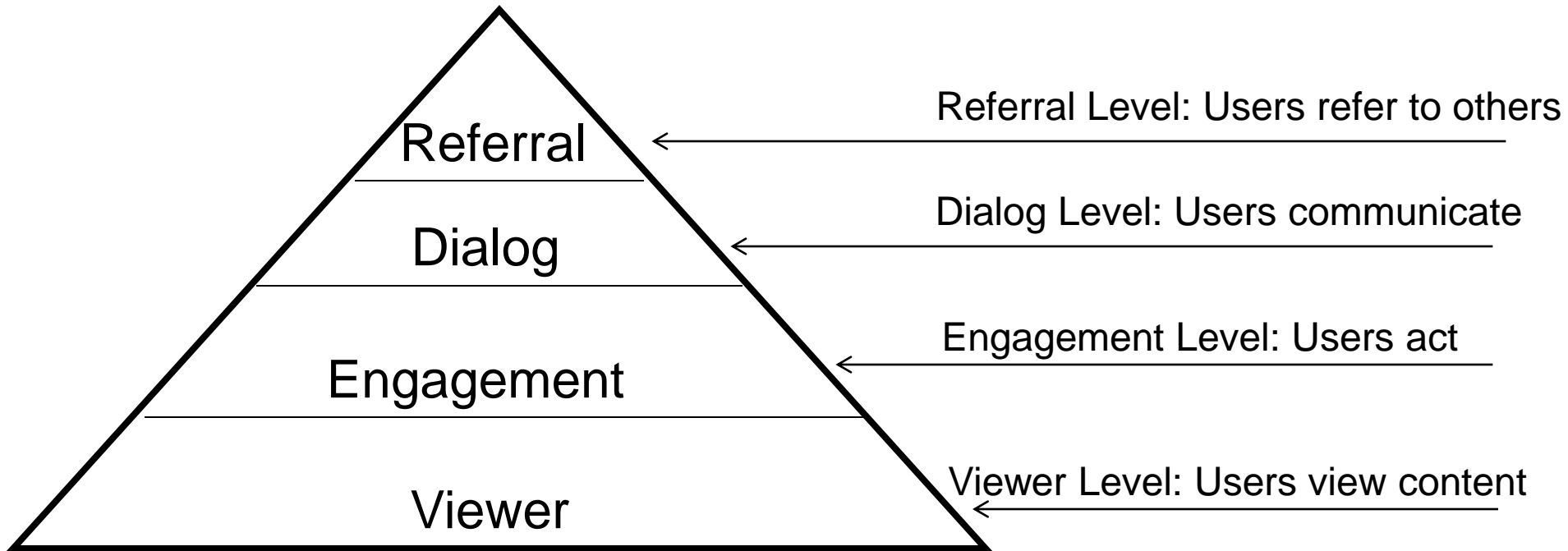
Social media measurement tools: Aggregators

Promotion Metrics for Social Media

Tool	Sample Measurement Capabilities
Cision	Tailored to public relations, marketing, and media relations Includes media monitoring and other PR tasks
Cymfony	Social media monitoring and analytics Acquired by Visible Technologies in 2012
Radian6	Social media dashboard and console Acquired by Salesforce.com in 2011
Scout Labs	Scans Web, analyzes data, identifies trends Acquired by Lithium in 2010
Techrigy	Searches Web and analyzes data for relevant trends Acquired by Alterian in 2009

Social media measurement tools: Professional-level tools

Promotion Metrics for Social Media



Promotion Metrics for Social Media

Measurement	Equations and Examples
Activity	Corporate websites: Views by page Social networking sites: Total views Photo and video sharing sites: Number of pictures and videos viewed

Sample Metrics: Viewer Level

Promotion Metrics for Social Media

Measurement	Equations and Examples
User Count	Email: Number of opt-ins over time Twitter: Number of followers Facebook: Number of fans Websites: Number of registrations
User Growth	$\frac{(\text{End Number of Users}) - (\text{Beginning Number of Users})}{(\text{Beginning Number of Users})}$
User Relevance	$\frac{\text{Number of Target Market Users}}{\text{Number of All Users in Community}}$
User Influence Level	$\frac{\text{Users with Above-Average Influence}}{\text{Quantity of All users in Community}}$

Sample Metrics: Engagement Level

Promotion Metrics for Social Media

Measurement	Equations and Examples
Activity	Blogs: Number and depth of blog comments UGC Sites: Amount and relevance of content Themes: Number of brand discussions using Twitter hashtags Mobile: Number of local spot check-ins in Foursquare or QR code scans
Brand Discussion	<u>Mentions of Company Brand in Past 30 Days</u> All Brand Mentions (Company & Competing Brands)
Dialog Level	<u>Dialog Level (Postings, Comments, etc.)</u> Total Quantity of User Views
Dialog Sentiment	<u>Positive/ Neutral / Negative Mentions</u> All Company Brand Mentions
Topic Intensity	<u>Number of Mentions of Company Brand</u> Quantity of All Messages in Community

Sample Metrics: Dialog Level

Promotion Metrics for Social Media

Measurement	Equations and Examples
Referral Level	<u>Re-Tweets + Facebook Shares in Past 30 Days</u> Quantity of All Messages
Referral Influence	<u>Influence Level of Referrers</u> Average Influence Level
Referral Depth	<u>Quantity of Words in Referral Messages</u> Average Message Length

Sample Metrics: Referral Level

Check for Understanding

Topic	Description
Estimation	Explain how to estimate the total promotion budget
Allocation	Describe how to allocate promotion budget across vehicles
Traditional	Address performance metrics for traditional media
Social	Describe tracking metrics for social media