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# What is Known about Measuring (Forecasting & Improving) the Long-Term Impact of Advertising

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Chicago



**Marketing Accountability Standards Board**  
**of the Marketing Accountability Foundation**

# Overview

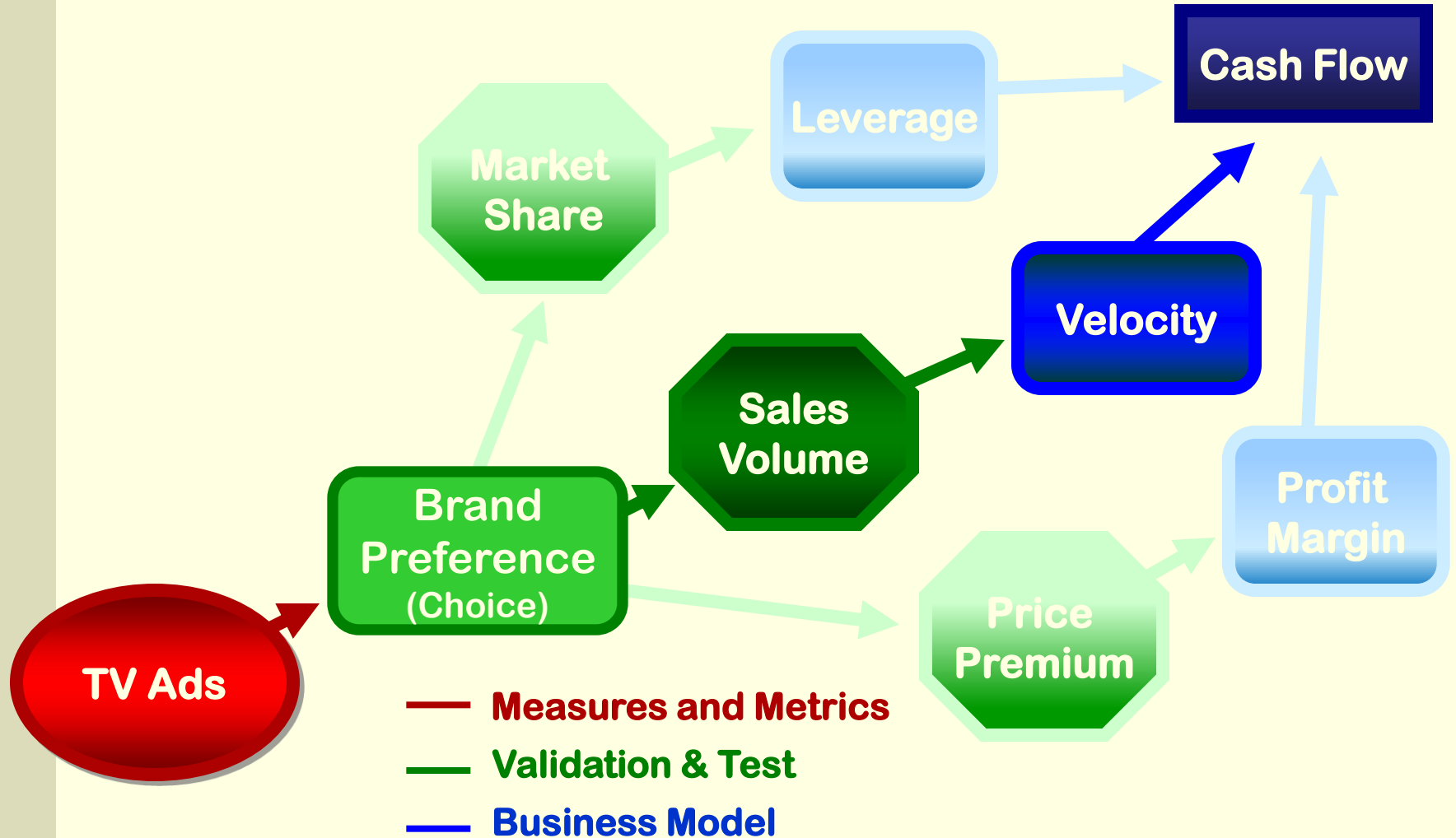
- **Metrics**
- **Definitions**
- **What is known**
  - **How long-term impact builds up**
  - **Examples**

# Metrics

- **Attitudinal (eg awareness, preference)**
  - **High inertia, slow moving**
- **Transactional (eg sales, market share)**
  - **Low inertia, fast moving**
- **Financial (eg revenue, profits, cash)**
- **MASB's focus is on the causal relationships among these measures:**
  - **Attitudinal to transactional (eg preference to sales)**
  - **Transactional to financial (eg sales to velocity to cash)**

D. Lehmann and D. Hanssens (2010)

# MMAP TV Example: Activity, Measures & Conceptual Links



Source: MASB (2008)

# Definitions

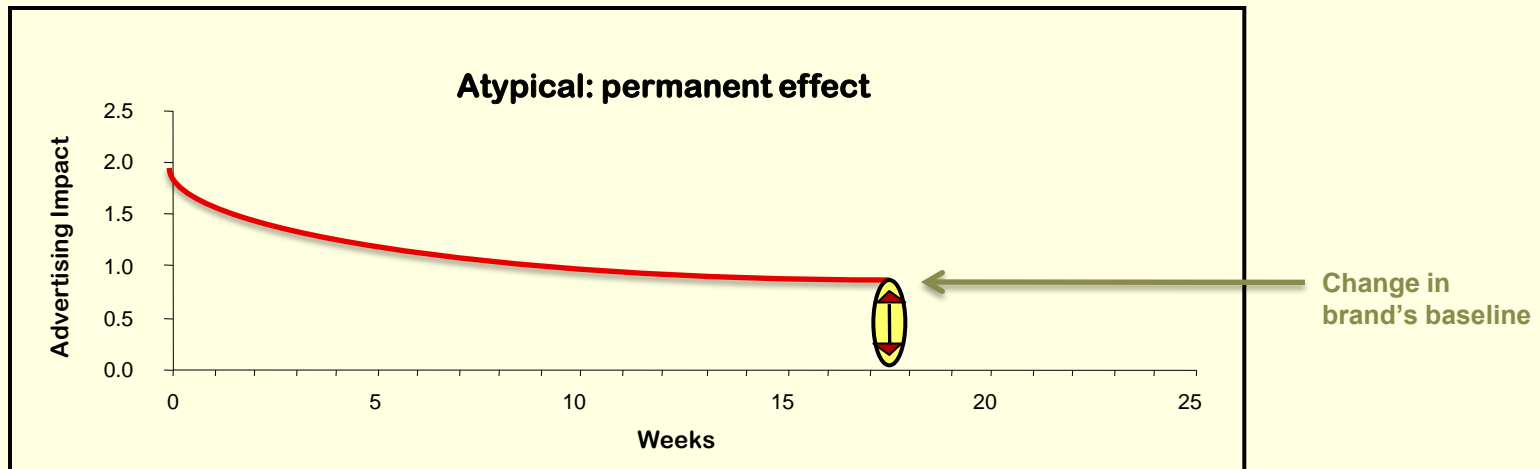
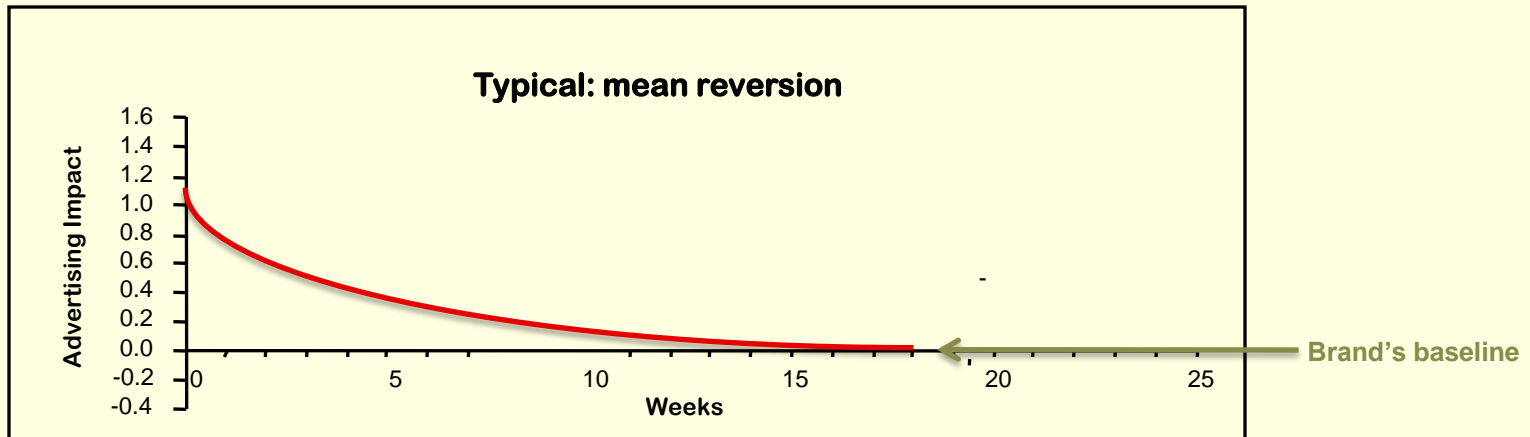
- **Temporary Lift: Immediate effect, distributed lag effects followed by mean reversion (often referred to as a short-term effect)**
- **Permanent Lift: Persistent effect with no mean reversion (often referred to as long-term effect)**
- **Definitions are not tied to specific time periods (even though temporary lifts from advertising generally last longer than temporary lifts from promotion)**

# What Is Known

# Overview

- Compare performance before and after, over time, after the “dust has settled”
- Question: does performance eventually return to pre-action levels?
  - **Yes:** Temporary effects dominate (can be distributed over time). Elasticities average 0.1, and normally range from 0.0 to 0.3.
  - **No:** Permanent effects (true long-term) are rare
- Good measures/good data + modern time-series econometrics provide good answers

# Dynamics of Advertising Impact





# Key Learning

- **Return-to-the-mean is the rule; permanent effects are the exception.**
- **Permanent effects occur almost exclusively in emerging, evolving markets . . .**

# Permanent Effect Examples

**When customers are still learning and marketing support coincides with a competitive product advantage:**

- **Introduction of Apple iPhone, coupled with aggressive marketing**
- **Continuous innovation & marketing support of Apple iPhone over time**

# Advertising Impact

- Most common: smooth decay to mean reversion
- Average short-term elasticities: 0.10
  - Up to 0.30 for new products
  - Usually 0.05 or less for established products
- Size of lift depends on nature of communication
  - New products
  - Product improvements
  - Brand differentiation (new or established brands)\*
- Duration of impact  $\approx 2x$  temporary lift\*\*
  - Customers learn quickly, forget slowly
  - Duration of economic effects: a few months

\* D. Stewart (1986)

\*\* L. Lodish (1991)

Note: For more information, see Y. Wind and B. Sharp (2009) or D. Hanssens (2009)

# Guiding Principles

- **As most ad campaigns have a temporary lift, long-term impact generally requires sustained activity**
- **Decline in temporary consumer response can result in unprofitable spending escalation.**
- **Continuous monitoring of temporary impact is therefore important**
- **Along with an understanding of the causal drivers of the impact**

# Importance of Corporate Behavior

- When you include firm behavior, the long-term impact can be up to five times stronger and longer-lasting than the temporary consumer response\*
- Difference is driven mainly by strategic company behavior, *not* by consumer or competitor response.
  - Support by other marketing-mix variables (such as product improvement when needed to maintain differentiation)
  - Inertia

\*K. Pauwels (2004)

# How Long-Term Impact Builds Up

**There are six main factors\*:**

- 1) Immediate response**
- 2) Carry-over effects**
- 3) Purchase reinforcement**
- 4) Feedback effect**
- 5) Decision rules**
- 6) Competitive reaction**

\*M. Dekimpe and D. Hanssens (1995)

# For Each of the Six Long-Term Factors

- **Definition**
- **Key metrics**
- **Available analytics**
- **Processes to be targeted**
- **Examples**

# Long-Term: Factor 1

- **1) Immediate response, as described in the MASB TV advertising document.**
  - Temporary lift
  - Focus of most advertising research
  - *Is essential for the creation of long-term impact*



# Long-Term: Factor 2

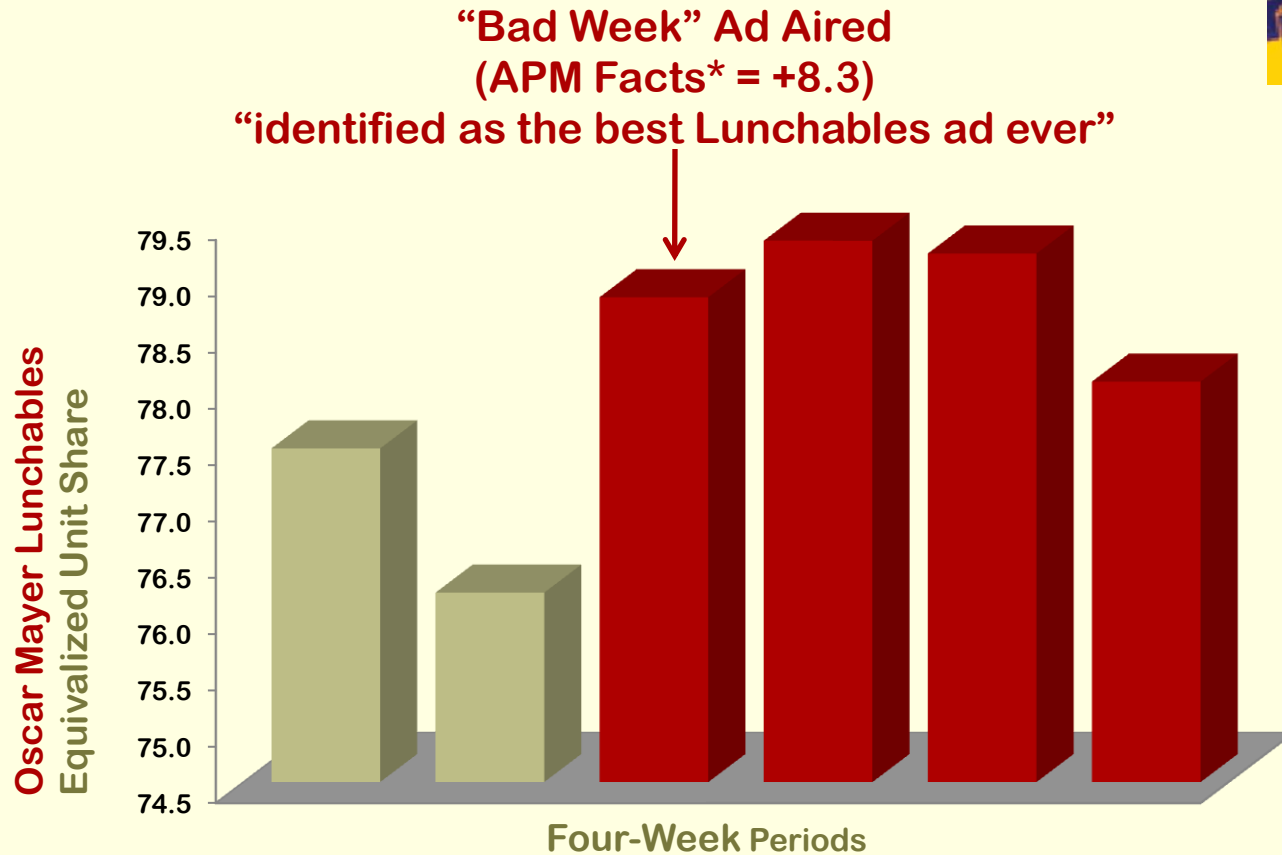
- **2) Carry-over effects** reflect delayed buyer response, especially in durable-goods markets. It is often determined either with distributed-lag models, or with intermediate performance metrics (eg leads in B2B markets).
  - Result in time-shifting of impact (“dust settling”)
  - Not fundamentally different from temporary lift
  - Immediate + carryover = total temporary lift

# Factors 1 & 2 :

## Immediate + Carryover = Temporary Lift

- **Metric: lift in a performance metric that is known to be financially relevant**
  - Examples: market share, unit sales, leads, etc.
- **Analytics: market-response model and/or controlled experiment**
- **Process: periodic review with tangible action**
  - Shift resources toward marketing that provides tangible lift
  - Discontinue unproductive marketing

# Temporary Lift: Lunchables Example

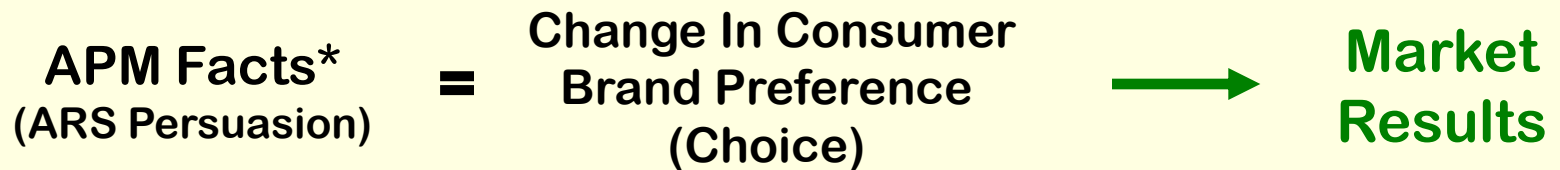


\* APM Facts = ARS Persuasion Metric for ads that actually air.

Source: Bill Bean [Oscar Mayer] (1995)

# APM Facts

Examples using APM Facts are based on a specific *behavioral* measure of *consumer brand preference*



\* APM Facts = ARS Persuasion Metric for ads that actually air versus the same methodology used at other stages of the advertising development process.

# Temporary Lift: Lunchables Example

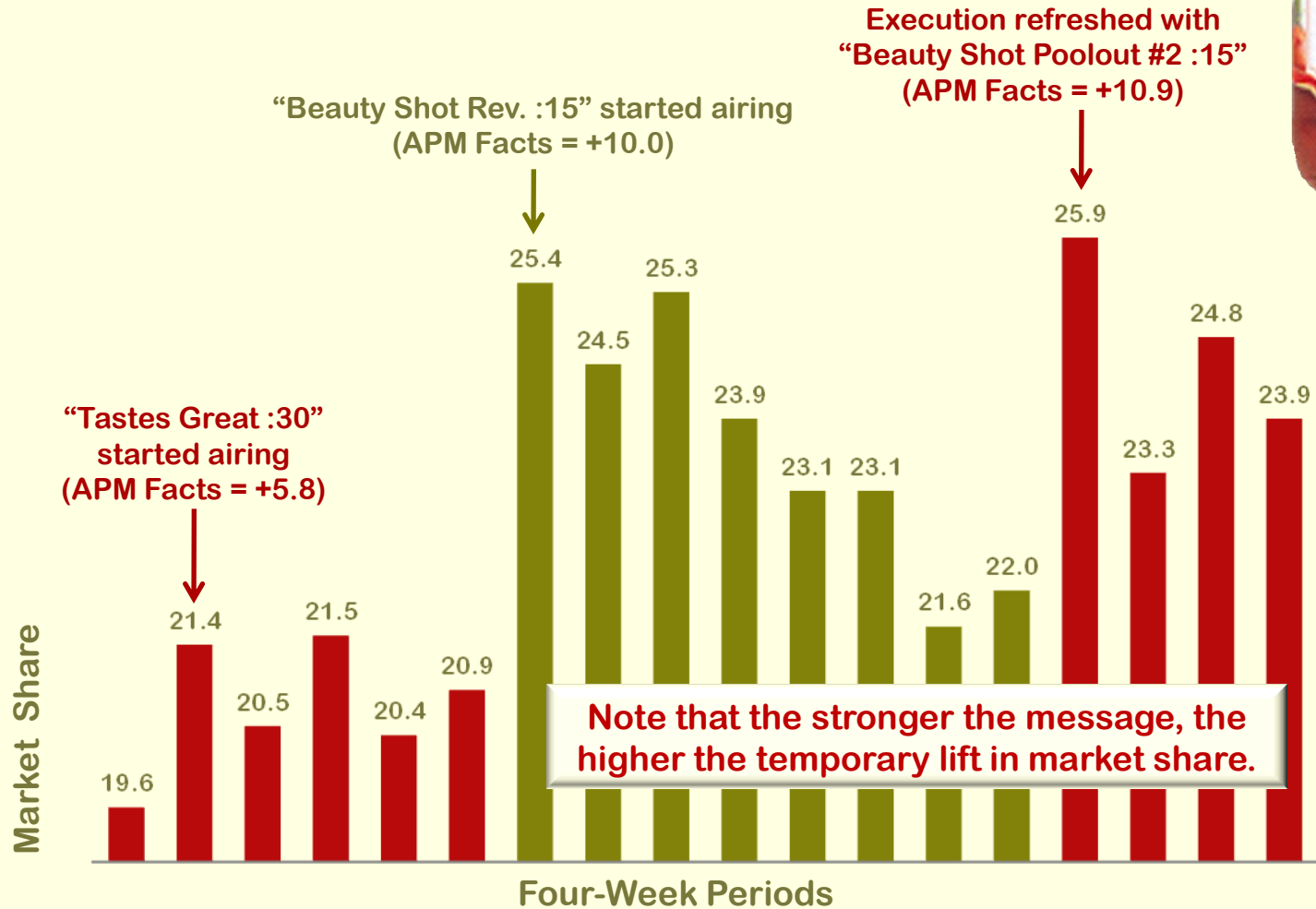


“Subsequent sales decomposition modeling revealed that ‘Bad Week’ accounted for 15 percent of the total Lunchables volume, the largest incremental sales increase Oscar Mayer and A.C. Nielsen had ever seen from television advertising!”

**Bill Bean**  
Category Information Manager  
Oscar Mayer Foods Corporation

Source: Bill Bean [Oscar Mayer] (1995)

# Temporary Lift: Prego Example



Source: A. Adams [Campbell Soup Company] and M. Blair (1992)

# Long-Term: Factor 3

- **3) Purchase reinforcement** refers to repeat-buying as a result of the initial, advertising-induced purchase. It is equivalent to “customer retention” in relationship businesses. It can also build word-of-mouth.
  - Builds long-term potential
  - Without purchase reinforcement, long-term impact cannot materialize

# Factor 3: Purchase Reinforcement

- **Metric: improvement in a reinforcement variable**
  - Examples: repeat-purchase rate, retention rate, customer referrals, customer satisfaction
- **Analytics: monitoring the metric or dynamic market response models**
- **Process: periodic monitoring with diagnostic action when needed (red flags)**
  - Example: repeat rates are down. Why?  
What has been done to correct the problem?



# Purchase Reinforcement: Starkist Example



**New Starkist Tuna in a Pouch**

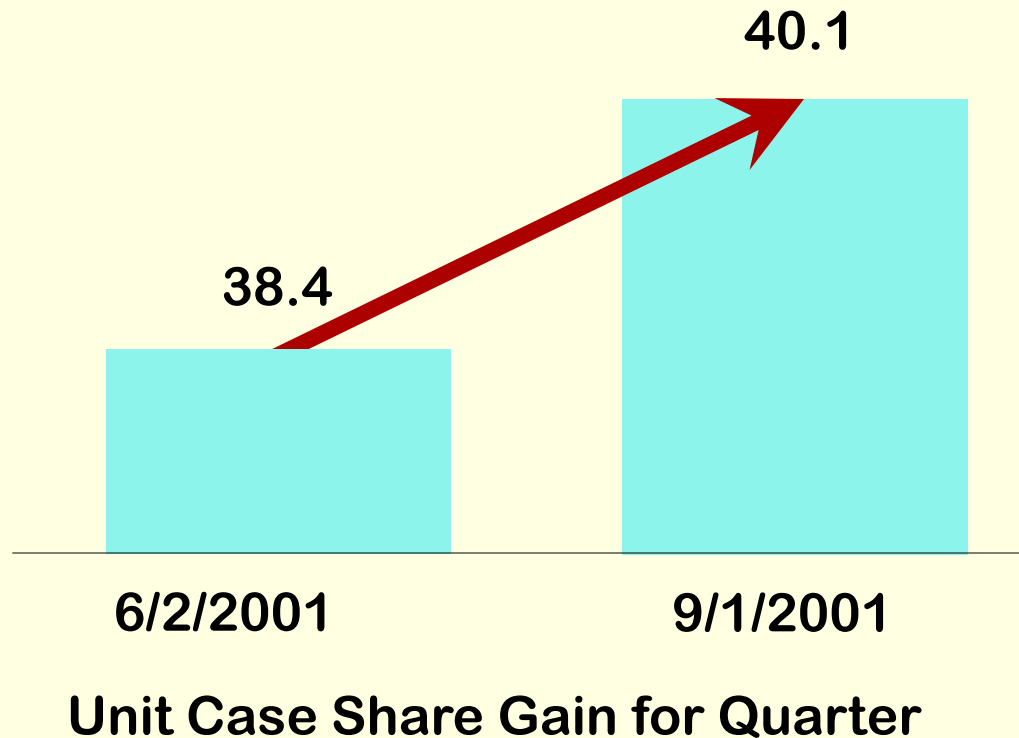
# Purchase Reinforcement: Starkist Example



	Concept	After use	Percentile score vs. BASES database
Top two box purchase intent	74%	90%	Top 20%
Liking	4.3	5.0	Top 20%
Uniqueness	3.9	4.0	Top 20%
Value	3.7	4.3	Top 20%

**BASES results show consumers loved it!**

# Purchase Reinforcement: Starkist Example



**StarKist total line**

# Long-Term: Factor 4

- **4) Feedback effect** is the influence of the initial sales lift on subsequent advertising spending. For example, is the advertising limited to a single campaign, or does it become “policy” as a result of its initial success?
  - Also helps build the long-term impact
  - However, it can result in escalation if the response effect wanes, yet spending continues

# Factor 4: Feedback Effects

- **Metric: evolution of budget allocations as a result of market response insights**
  - Continuing a successful campaign (per Factors 1–3)
  - Discontinuing or rejuvenating a worn-out campaign
- **Analytics: monitoring the metric, or advertising decision modeling**
- **Process: from tradition-based to response-based marketing**
  - Recognizing past allocation errors
  - Implementing learning
  - Resulting in better business practice . . .

# Feedback Effects: Starkist Example



Advertising  
ROI\*

**Traditional approach: Quarter A only**

**-1%**

“ ‘Break-even’ ROI we had expected for the quarter using a traditional (advertising) approach . . .” (calculated from test market data)

**Feedback-based approach: Quarter A only**

**76%**

Airing only ads with high APM facts for “the initial advertising quarter”

**Feedback-based approach: Quarters A & B**

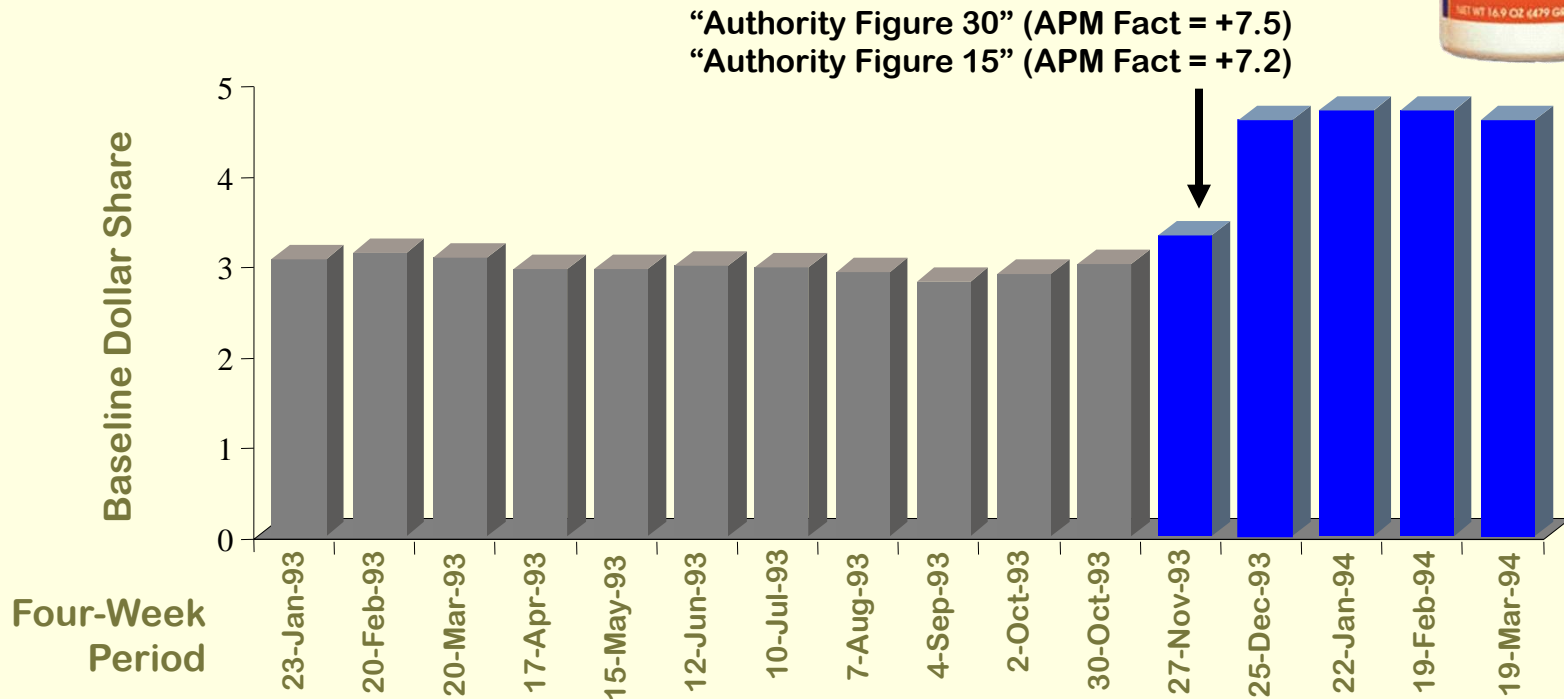
**368%**

Ads still had power left, so “with the unplanned—or second— flight (Quarter B), we were up to 368 percent return on our TV advertising activity.”

\* Return on investment based on incremental profits achieved less costs of the activity (production, media, APM Facts, etc.)

**StarKist ROI**

# Feedback Effects: Citrucel Example

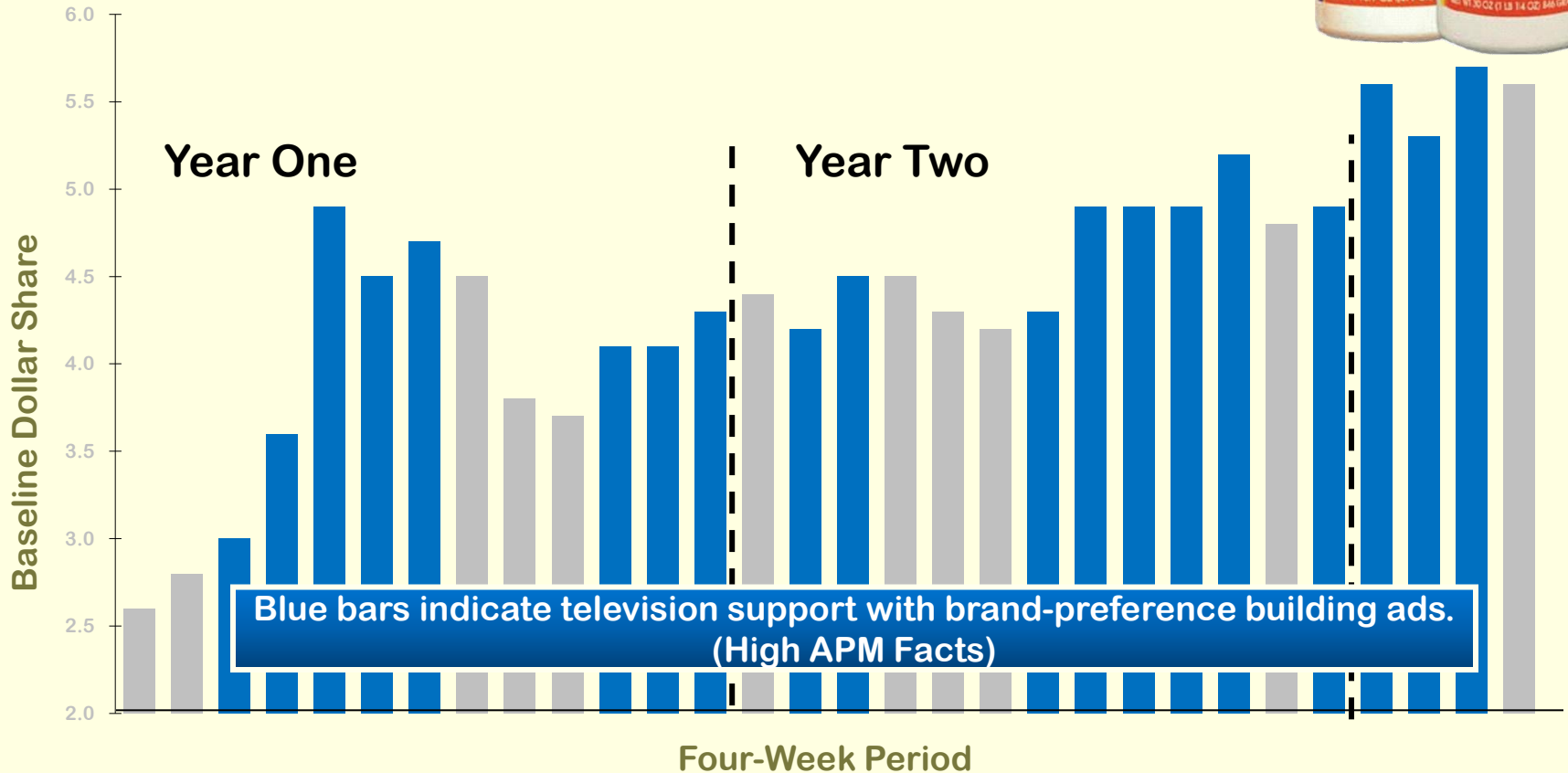
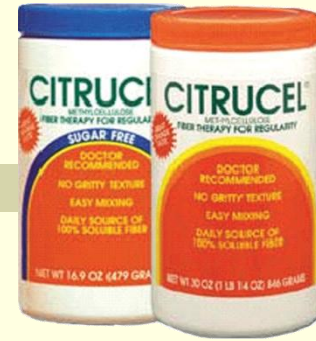


The persuasive 15- and 30-second advertisements began airing at the beginning of November. Share responded immediately—increasing over 70 percent from the pre-airing base period. This was the only marketing activity for Citrucel over that time period.

Based on this initial success, the brand team received funding for more TV advertising.

Source: D. Shirley [SmithKline Beecham Consumer Healthcare] (1995)

# Feedback Effects: Citrucel Example



Results were outstanding for Citrucel the first year, the second year, and beyond. Citrucel's brand share kept moving up, while holding price steady.



# “Best Practice”

## Definition\*

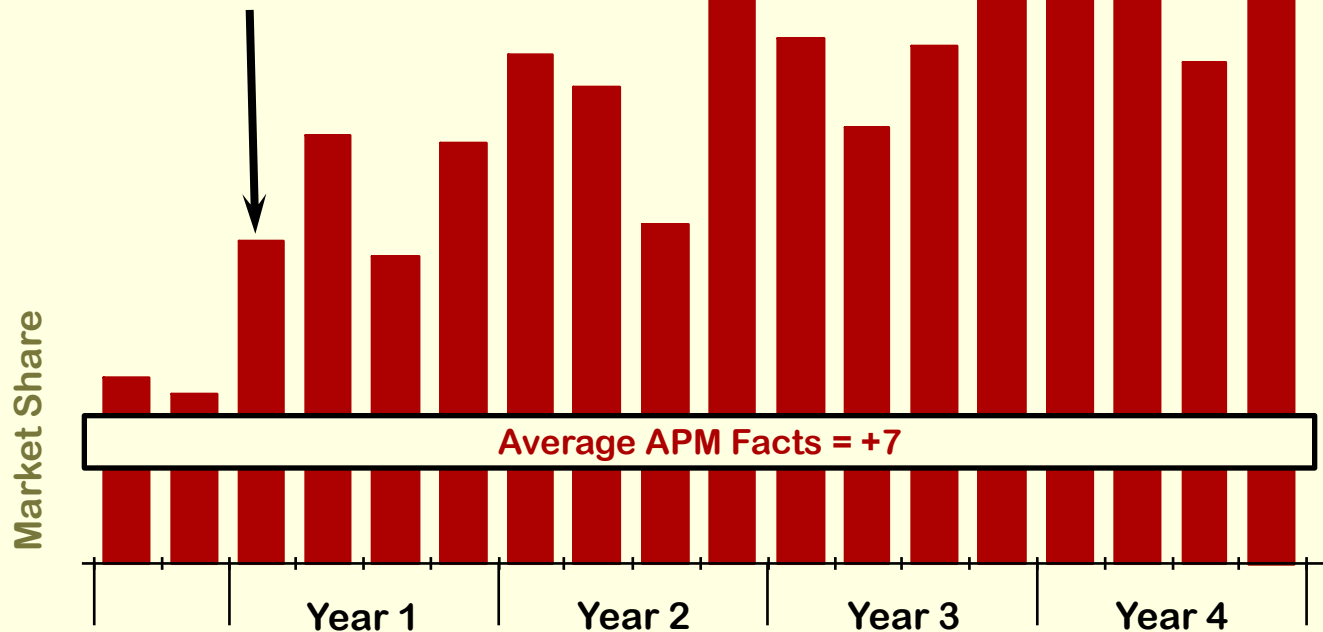
**A documented method of operating behavior that yields a higher level of performance than other operating behaviors.**

\*ESOMAR & ARF (2001, 2002, 2003)

# Better Practice: Prego Example



Prego brand group forms a “better practice team” to monitor advertising feedback effects and implements learning into better practice



Source: A. Adams [Campbell Soup Company] (1997)

# Better Practice: Prego Example



**“What underlies this five-year-long success story?  
A fundamental change in the advertising strategy  
and research process.**

**Prego is the only Campbell’s brand in the past five years to consistently stay with the same strong selling proposition (ARS Persuasion), measure every pool out prior to airing (APM Facts), establish hurdles and stick to them, and utilize (ARS wearout learning) to create an awareness of when to refresh creative.”**

**Dick Nelson  
Campbell Soup Company**

Source: A. Adams [Campbell Soup Company] (1997)

# Better Practice: Prego Example



## Payout Analysis for Five-Year Case Study

<b>Average market share increase over baseline</b>	<b>4.5 points</b>
<b>Estimated incremental gross profit</b>	<b>\$112,500,000</b>
<b>Incremental cost of testing (15 more)</b>	<b>\$225,000</b>
<b>Estimated incremental cost of production</b>	<b>\$1,875,000</b>
<b>Payout (ROI)</b>	<b>5,357%</b>

Note: No change in media spend

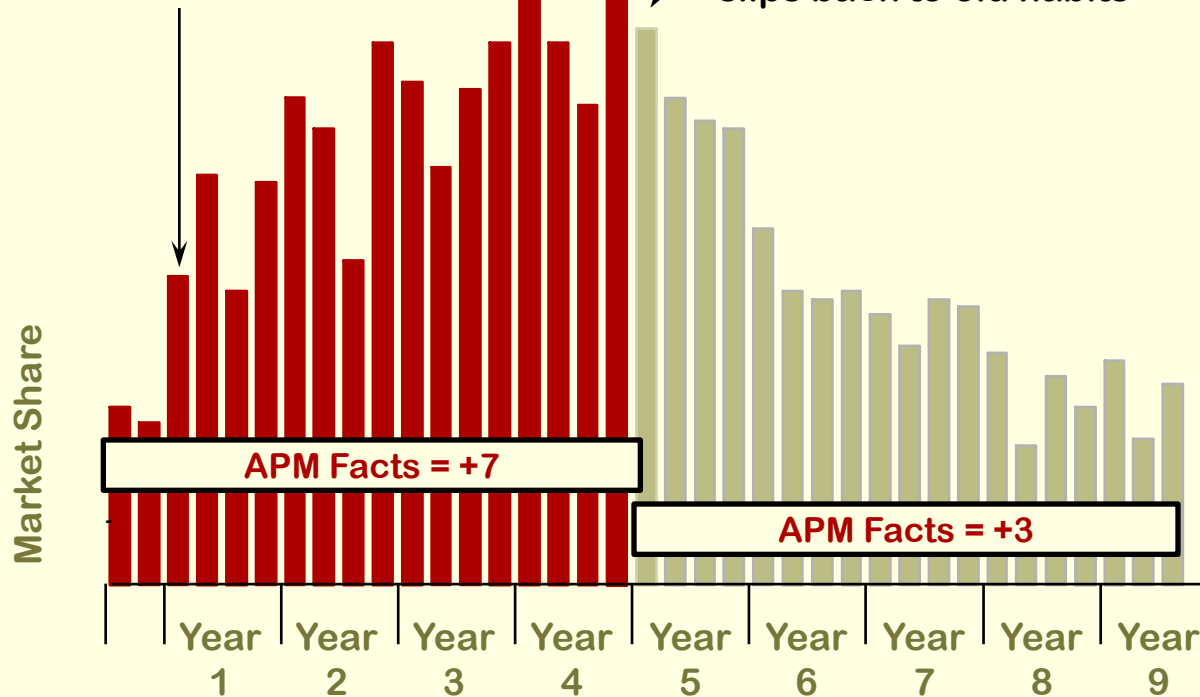
Source: A. Adams [Campbell Soup Company] (1997)

# Better Practice: Prego Example



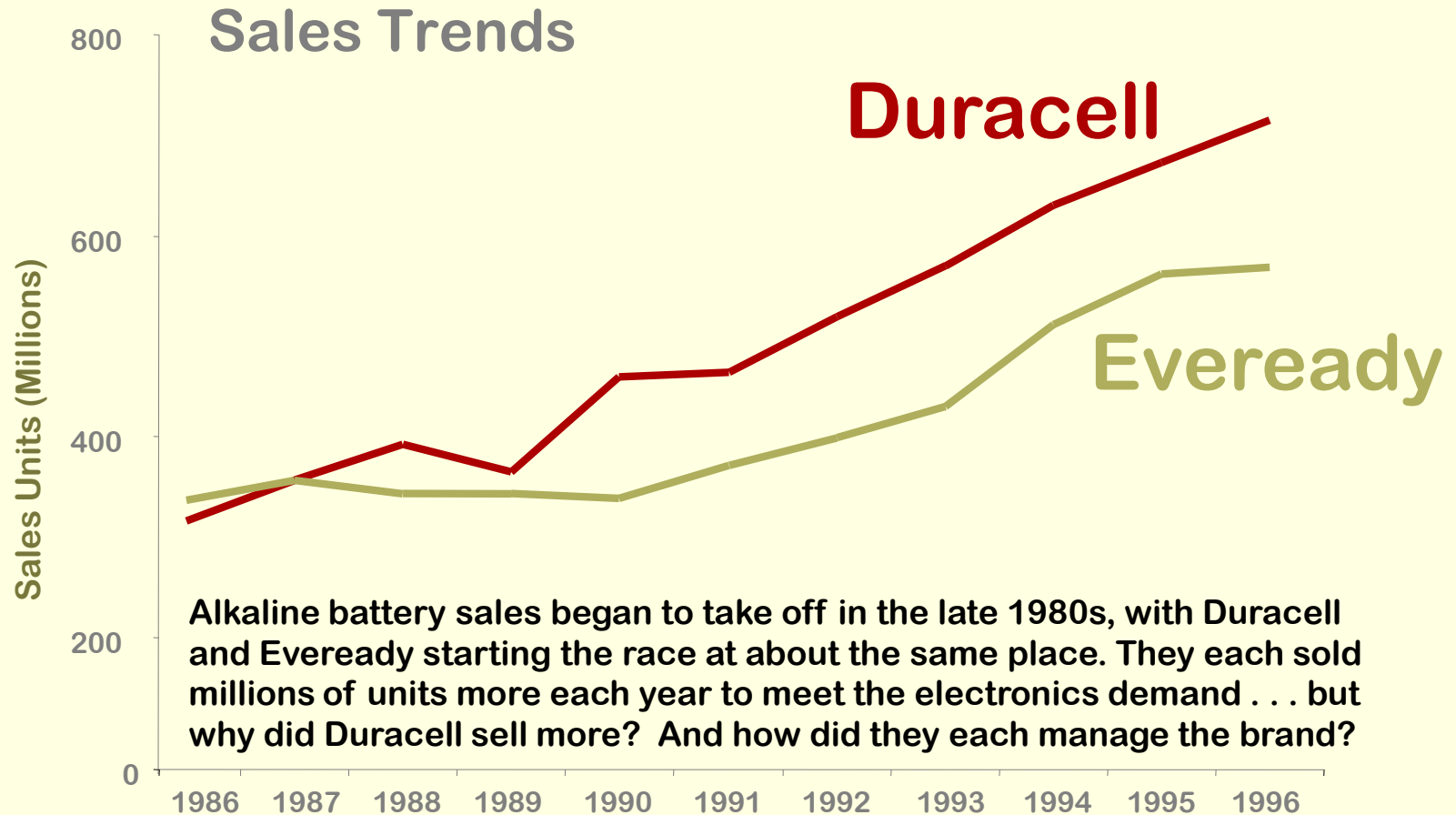
Prego brand group forms “better practice team” and implements learning

Prego brand group turns over, cancels team, slips back to old habits



Source: M. Blair and A. Kuse (2004)

# Better Practice: Duracell Example

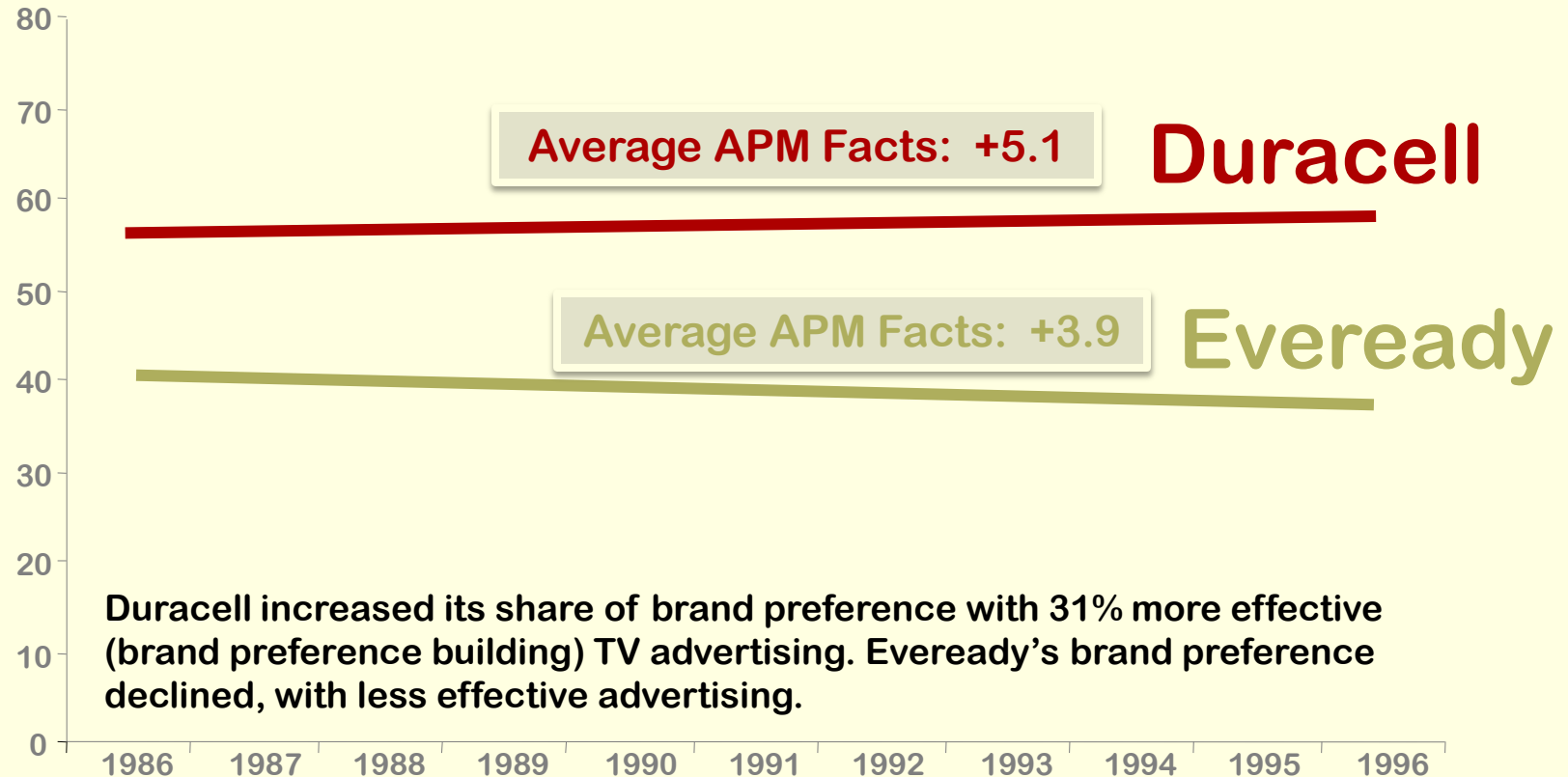


Source: M. Blair and A. Kuse (2004); D. Stewart (2005)

# Better Practice: Duracell Example



## Brand Preference Trends\*



Duracell increased its share of brand preference with 31% more effective (brand preference building) TV advertising. Eveready's brand preference declined, with less effective advertising.

\* Brand Preference Trends are based on same Brand Choice methodology as ARS Persuasion & APM Facts  
Source: M. Blair and A. Kuse (2004); D. Stewart (2005)

# Better Practice: Duracell Example



## Post Script

“At the end of this successful 11-year run, the Duracell brand was sold to The Gillette Company. The new members of the brand and agency team did not adopt—and may not have even known of—the measurement and research practices that had supported Duracell’s success. Subsequently (sales) eroded.”

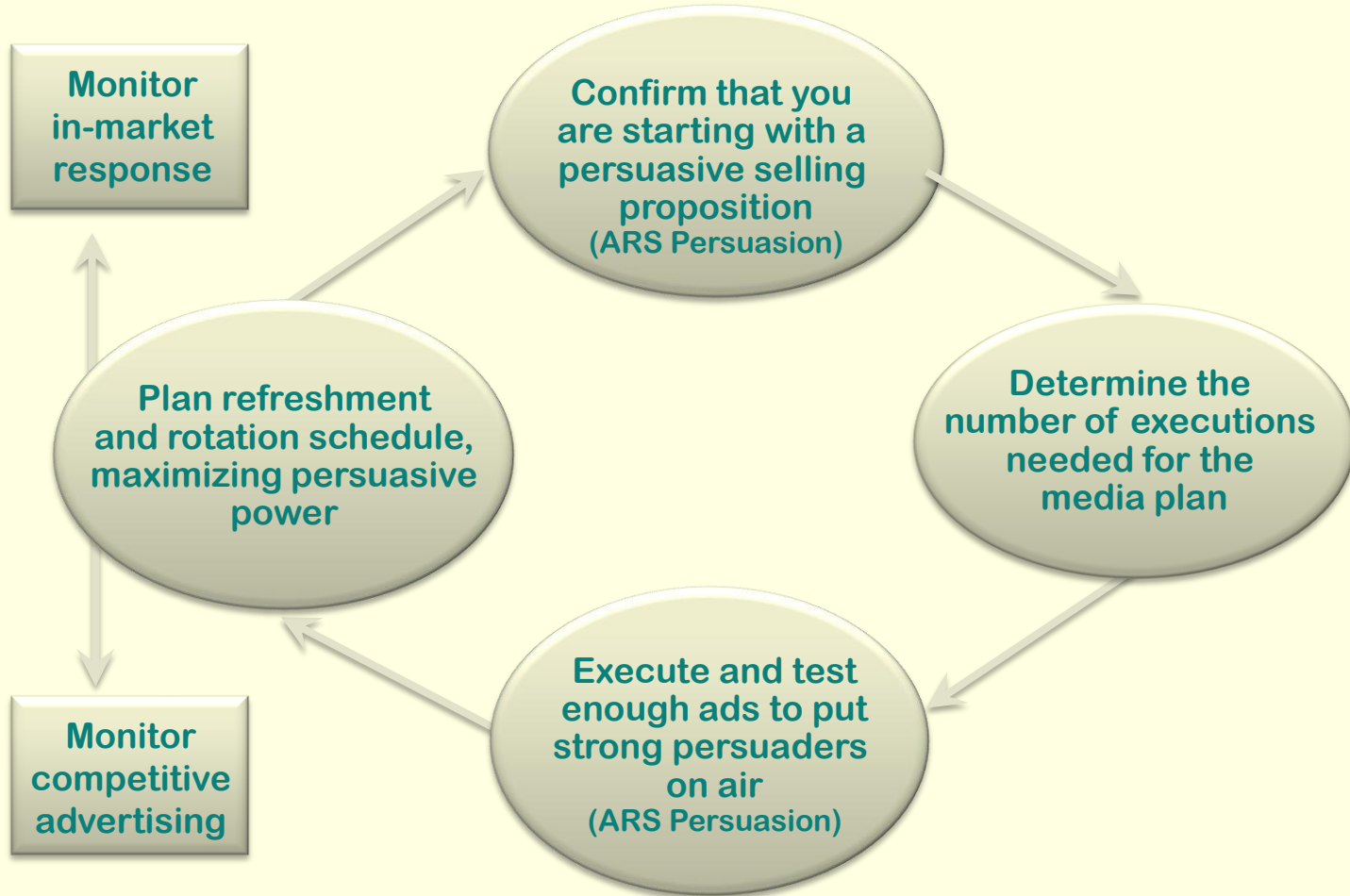
Source: M. Blair and A. Kuse (2004)



# Better Practice: OTC Example

Large  
Pharmaceutical  
Company:  
OTC Division

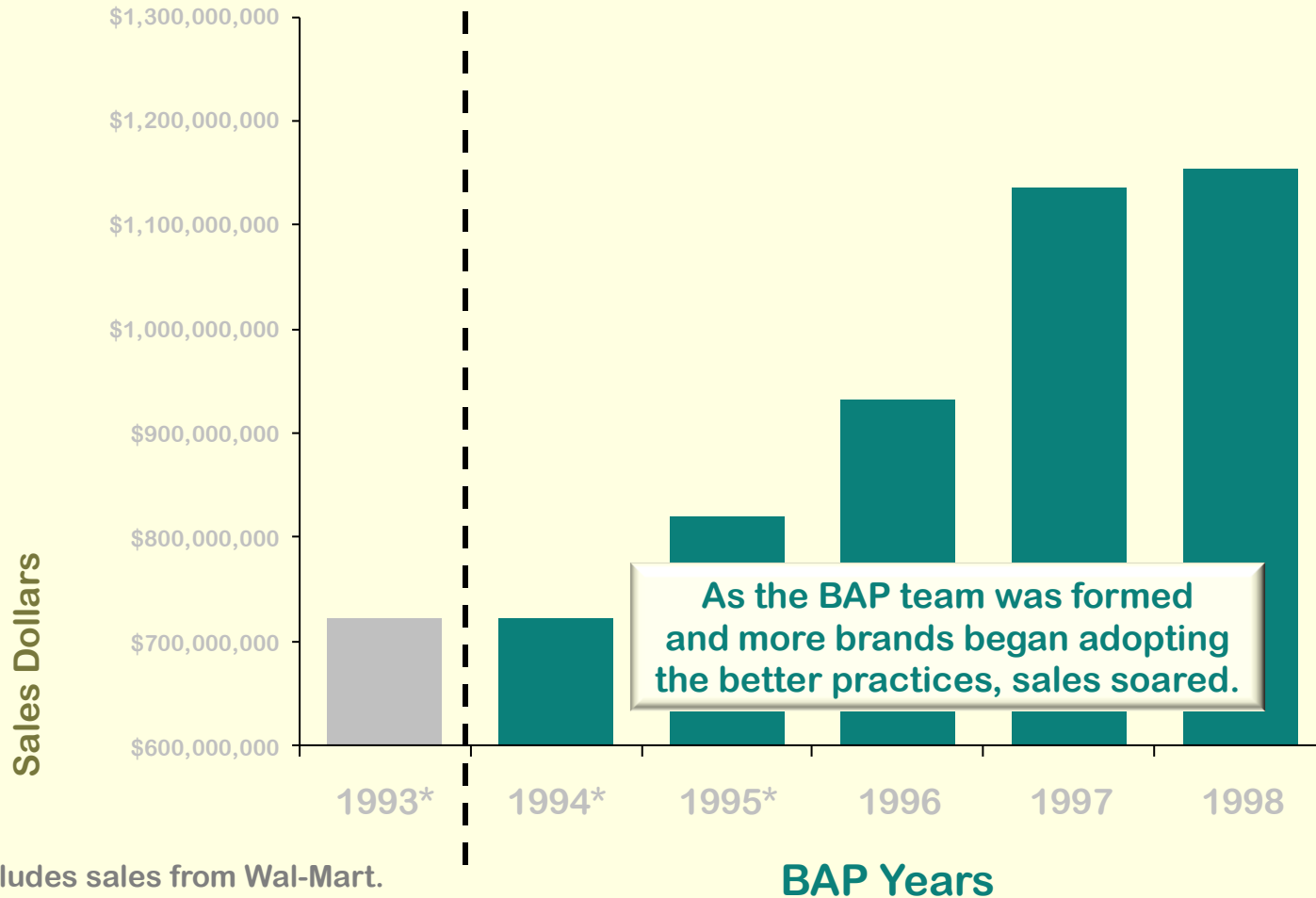
## “Better Advertising Practice” (BAP)



Source: Blair (2004)

# Better Practice: OTC Example

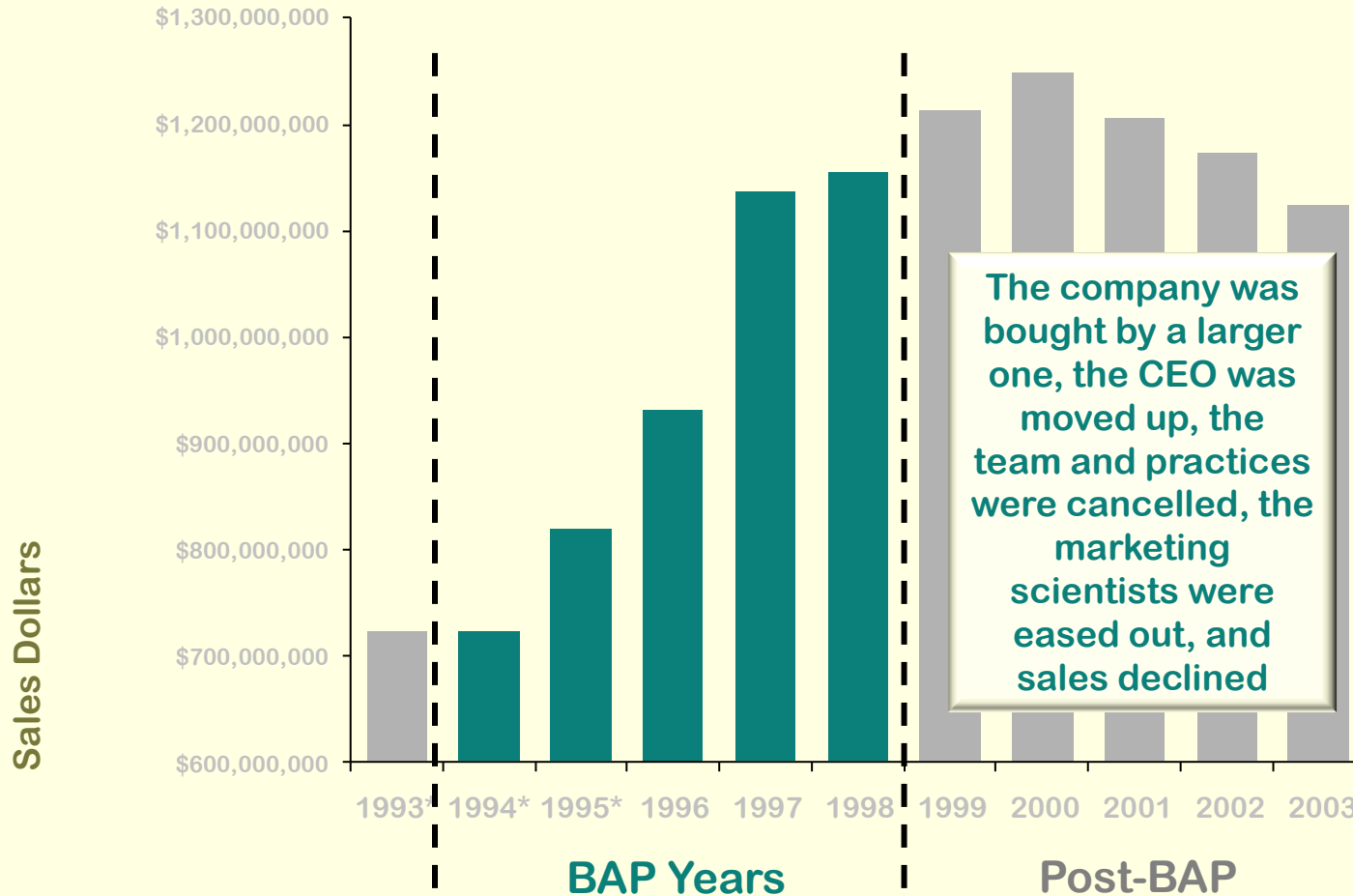
Large  
Pharmaceutical  
Company:  
OTC Division



\* Includes sales from Wal-Mart.  
Source; Blair (2004)

# Better Practice: OTC Example

Large  
Pharmaceutical  
Company:  
OTC Division



\* Includes sales from Wal-Mart.  
Source: Blair (2004)

# Long-Term: Factor 5

- **5) Decision rules** refer to the effect of advertising spending on the other parts of the brand's marketing mix. For example, reductions in trade promotions to offset ad spending, or increases in sales calls or retail price to capitalize on positive consumer response to advertising.
  - Together, they shape the firm's overall marketing strategy
  - Inertia in decision making is part of this
  - Opportunity to create synergy

# Factor 5: Decision Rules

- **Metric: degree of coordination across the marketing mix**
  - Example: correlation between sales calls and advertising support should be positive if synergistic
- **Analytics: market-response models with interaction effects; marketing decision models**
- **Process: cross-functional decision teams**
  - Coordination when there is synergy
  - Clutter avoidance when there is competition

# Decision Rules: OTC Example

Large  
Pharmaceutical  
Company:  
OTC Division

- The OTC Division selected an ARS Persuasion/APM Facts level of 4.0 as the action standard across its 22 OTC brands:
  - A score of 4 or higher for the “selling proposition” was required to allocate creative/production dollars
  - Then only ads 4+ were allocated media dollars
- The CEO received systematic reports showing scores for ads being aired by brand to determine how well the airing hurdle was being followed.

Source: Blair (2004)

# Decision Rules: Multi-Firm Pharmaceutical Example

- “In theory, a multi-division firm can deploy volatile marketing tactics that do not affect portfolio volatility by strategically coordinating marketing campaigns across brands and regions.”
- “In that case, we would expect marketing expenditures to be predominantly negatively correlated.”
- But in practice they are not . . .

Source: M. Fischer, H. Shin, and D. Hanssens (2009)

# Decision Rules: Multi-Firm Pharmaceutical Example

## Correlation pattern of marketing expenditures for pharmaceutical firms

		Expenditures in levels		
		Significant ( $p < .05$ )		Insignificant
	Number of products	$\rho < 0$	$\rho > 0$	$\rho = 0$
Firm 1	13	5%	37%	58%
Firm 2	9	8%	25%	67%
Firm 3	7	5%	14%	81%

For these three large pharmaceutical companies, the correlation for marketing spending across brands is predominantly zero. Although spending for individual brands may be effective, there is no coordination across brands or divisions.

Source: M. Fischer, H. Shin, and D. Hanssens (2009)



# Long-Term: Factor 6

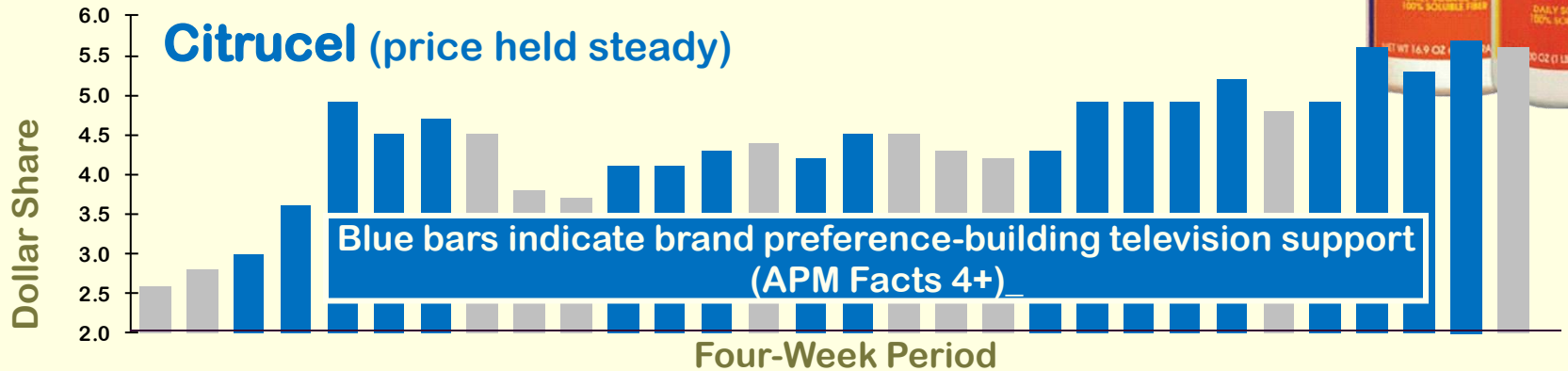
- **6) Competitive reaction with advertising (which can be share-stealing or category-expanding) and other competitive marketing tactics. The intensity of these reactions can determine the ultimate level of marketing rivalry in an industry.**
  - The predominant form of reaction is NO reaction\*
  - If reaction, often category-enhancing in new markets and share-stealing in established markets

\* Source: J. Steenkamp, V. Nijs, D. Hanssens and M. Dekimpe (2005)

# Factor 6: Competitive Reaction

- **Metric: cross-elasticities**
  - Examples: cross-sales effects, reaction elasticities
- **Analytics: competitive market-response models with competitive effects, reaction functions**
- **Process: decision rules for optimal competitive behavior**
  - If no negative cross-sales effect, don't react
  - If negative cross-sales effect, react only with effective instruments

# Competitive Reaction: Citrucel Example



## Metamucil (price was lowered)



Metamucil lost share to Citrucel despite spending more media dollars, cutting retail price 15 percent, promoting more heavily (retailer displays and feature ads) and airing more ads.

# Competitive Reaction: Prego Example



## Five-Year Overview

	Prego		Ragu
Total GRPs	15,034	←	20,400
Average displays	22	←	43
Average retailer ads	29	←	37
Average selling price	\$1.80	←	\$1.64
<b>Total TV power (PPDs)*</b>	<b>679</b>	→	<b>448</b>
<b>Sales gains (units)</b>	<b>+22%</b>	→	<b>-19%</b>

“Looking at the entire five year period, Prego’s advertising managed to overcome Ragu’s heavier spending, retailer support, and lower price. The estimated return-on-investment over the five year period shows the long-term payout of Prego’s process change of over 5,000 percent.”

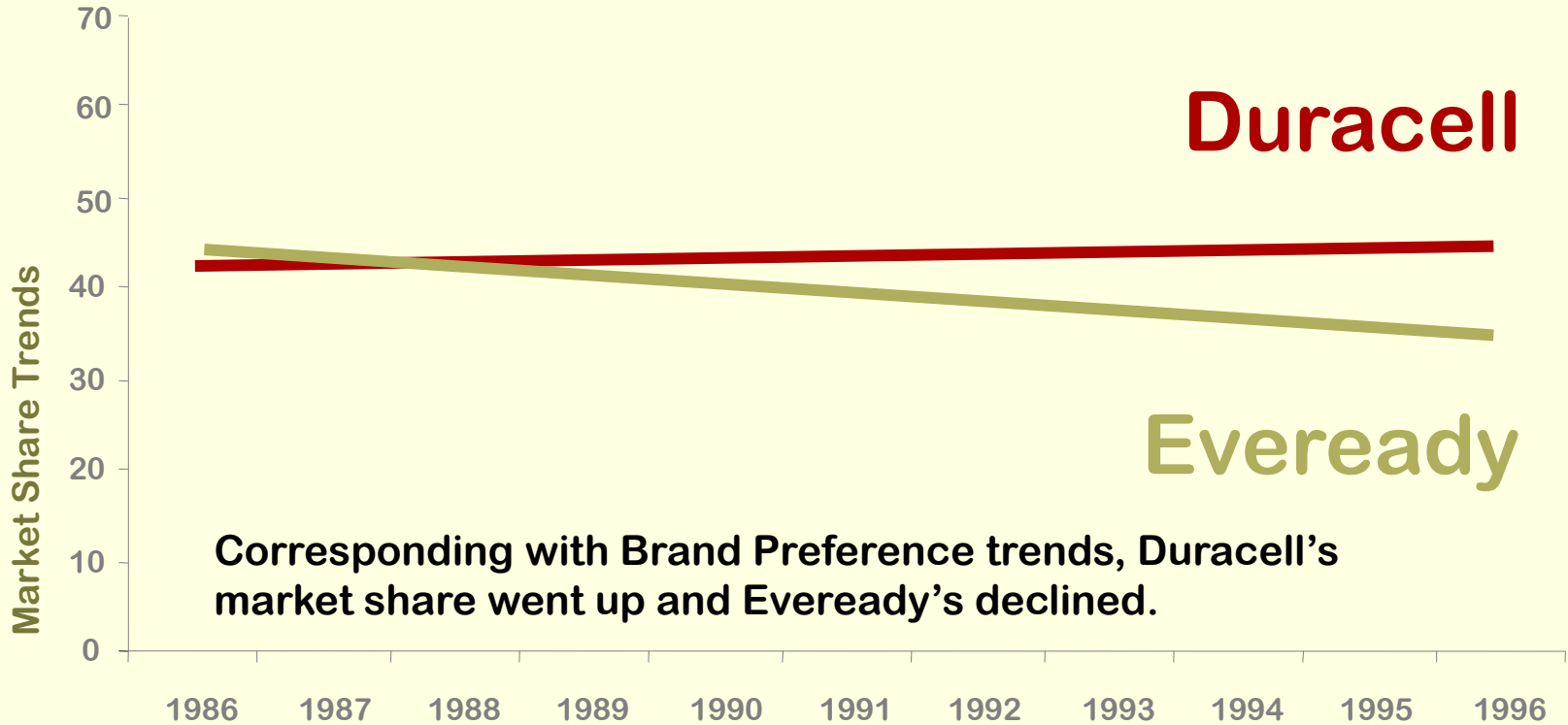
\* Persuasive Points Delivered (calculated from APM Facts and media spending)

Source: A. Adams [Campbell Soup Company] (1997)

# Competitive Reaction: Duracell Example



## Market Share Trends



Corresponding with Brand Preference trends, Duracell's market share went up and Eveready's declined.

Source: D. Stewart (2005)

# Competitive Reaction: Duracell Example



	Duracell		Eveready
Sales (units)	715M	→	568M
Brand Preference	57%	→	37%
Market share	44%	→	35%
Price per unit	\$1.02	→	\$.86
Profit	\$609M	→	\$275M
Market value*	\$8B+	→	\$3B

While both brands began the alkaline race at the same unit sales starting level, Duracell built the brand by continually **building consumer brand preference, sales, and market share while charging a premium price**. The prize at the end of the 10 years was nearly a **3-to-1 market value** of the Duracell Company over Eveready.

\* The companies were sold for approximately these prices at about a year after the end of the study.

Source: D. Stewart (2005)

# Summary & Conclusions

- The “long term” develops as a result of six main factors:

- Immediate response
- Carry-over effects
- Purchase reinforcement

**Consumer Response to  
Ads & Delivery to Promises**

- Feedback effect
- Decision rules
- Competitive reaction

**Corporate Behavior  
Learning & Better Practice**

# Summary & Conclusions (Consumer Response)

- Temporary lift in sales/market share is the rule
- Size of lift depends on nature of the message
- Temporary lift is essential for creation of long-term impact
- Residual effect years 2+3 = ~ two times year 1
- Given competitive markets, net positive results over long-term requires sustained activity
- Pre-market measures exist to predict consumer response
- Analytical methods exist for disentangling factors after the fact



# Summary & Conclusions (Corporate Behavior)

- Can result in 5+ times stronger and longer-lasting impact than consumer response when organizations:
  - Use advertising consumer response metrics that are predictive of transactional and financial returns
  - Spend on activities that create the desired temporary lifts necessary for long-term build-up
  - Repeat the behavior
  - Turn into better business practices (process management)

# Implications for Practitioner Action

- **Select pre-market methods that are demonstrably predictive of consumer & market response tied to financial returns (ARS Persuasion/APM Facts & BASES are ones used in this study)**
- **Spend on the activities that will create the desirable temporary lifts necessary for long-term build-up**
- **Continually monitor consumer responses & market impact**
- **Learn from the feedback, document the behavior, repeat the behavior, and turn into better business practices for the brand and for the enterprise**
- **Stick with the practices through personnel changes**

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# Thank-you!



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