Evaluating Long-Term Effects of Advertising

A Study Of The Current State Of The Art
And The Opportunities For Improvement

Conducted by Sequent Partners For The Council For Research Excellence

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The Question

Complete the thought:

- Tony the Tiger says “They’re ...”
- What do you deserve today?
- Got what?
- *What* stays in Vegas?
- What kind of beauty does Dove promise?
- 15 minutes will save you *what*?
- Who do P&G spokespeople say Thank You to?
- When it absolutely, positively has...

You don’t have to be a Quintile 5 media consumer to know the answers to most of those questions. They’re some of the most famous advertising taglines in history. Do you know the sponsor? Can you see the ad in your head? Do you remember the industry buzz when people recognized the simplicity and staying power of those big advertising ideas?

That’s what we’re talking about here. Staying power. The ability of an ad to do its job long after a flight wraps up. Long after the agency and the brand manager get bored. Long after its contributions to sales have been tallied in marketing mix models.

How do you quantify the long-term effects of advertising? How do you structure analytics to give advertising credit for staying in the minds and hearts of consumers – for driving sales, while creating tight bonds, preferences and associations between consumers and brands?

In today's ROI evaluations, for the most part, the focus is on short-term effects. The long term is not routinely considered – no one has time for it and few brand managers are incented to protect the long-term health of the brand. It's a short-term world.

But does advertising get all the credit due in marketing mix models and other methods of evaluating return on investment? Not if the focus is only on the short term.

Why the disconnect? Why isn't advertising's tremendous power to stick around in consumers' heads part of the routine evaluation of its contribution?

Read on!

The Long History of Long-Term Effects

Our world certainly knows about advertising's long-term effects. There have been hundreds of academic and commercial studies/papers on the topic in the past 50 years. Please see the appendix of this paper for the bibliography and enjoy this historical overview.

In the '70s, as scanner data drove the popularity of marketing mix models, advertising data scientists (though they weren't called that back then) and academics developed long-lasting concepts of adstock, half-life and decays ... and the Koyck lag co-efficient factor ... that are broadly used today. Some of you will know what that means.

Long-term was defined and validated ... papers cited solid evidence of an advertising effect occurring 3-9 months after the campaign ran -- and the impact was supported with actual market results. In the '70s!!

In the eighties, the long-term impact of advertising on brand equity was studied, and another long-lasting concept, advertising's impact on company stock prices was developed and advanced. Despite growing evidence of the long-term impact, the c-suite (they weren't called that back then, either) and brand managers remained steadfastly committed to short-term effects – next quarter – or by year-end. Driven to perform well, all of marketing was geared to read and react to short-term results.

The 1990s were probably the hey-days of long-term measurement. The concepts of "Purchase Reinforcement" and "Memory Effects" were introduced and the world-famous IRI "How Advertising Works" study showed long term effects were twice short term – 2x – and advertising still worked two years later. Penetration and repeat buying effects from consumer purchase panels were studied. More and more evidence supported advertising's ability to reduce price sensitivity and modelers reveled in discussions of how to "decompose base sales" – that behemoth chunk of sales that happen without any marketing stimulation – in order to account for advertising's long term effects.

By the 2000's, work continued on base sales evolution, price elasticity, penetration and repeat purchasing, and single source data showed promise for assessing long-term effects. And finally, the effect of advertising on long-term brand building was advanced again with the integration of equity measurement and purchase dynamics.

Interestingly, in looking at the academic and industry papers over the course of the last 30 years, the hand-off from academics to practitioners is evident. These days, there are fewer theoretical explorations and more evidence showing how long-term effects of advertising work. The mechanisms.

To summarize, the big ideas in the study of long-term effects of advertising are: impact on brands or buyers -- brand equity enhancements over time … or purchase dynamics and customer lifetime value over time.

But so far, there is no unified field theory here -- no fully integrated approach to advertising's long-term effects, spanning short term, intermediate term on buying behavior and brand attitudes.

With that historical perspective, we embarked on a mission to see just how modelers and marketers evaluate long-term effects of advertising today. Please see the appendix for the list of people we interviewed for this project.

Just What Is The Long Term?

Note the different ways modelers define and operationalize the long term:

- *"Our definition of long term depends on industry, but it's usually three to five years."*
- *"It depends on purchase cycle, loyalty in the category, and competitive activity. In automotive, long term is measured in years."*
- *"For us, short term is one year. Long term is Year 2 and part of Year 3. If you go dark, you lose some of the long-term effect. Five years is a long time -- things change."*
- *We look at results over 6-12 months … at most!"*
- *"Short term is one or two quarters. Long term is three years out. You've got to have enough data to see changes that affect this quarter or next quarter."*
- *"Long term is a year or five quarters -- compared to four weeks for short term."*

We see that the long term ranges from 6 months to three years – and everything in between. That's quite a range. It makes sense that category dynamics define the boundaries between short and long term, but it certainly hampers the industry's ability to develop and evolve standard measurement and analytic practices. Several modelers asked for a standard definition of long term.

Current Practices

Frankly, we were a little surprised to learn that modelers can, and do, look at long-term effects of advertising despite the overwhelming demand for short-term or intermediate-term analyses. For the most part, it doesn't happen routinely, but on request. Clients reach for long-term analyses when they need additional support for an element of the marketing mix that may have smaller short-term results than they need. Here's how modelers described the prevalence of the practice:

- *"It's standard practice to provide a perspective on long term, but there are costs to going deeper. We do it more than half the time -- it's bigger outside of CPG, but we also do it in CPG."*

- *"It's done a fair amount of the time. Not all the time. Looking at how marketing changes affect brand health long term is typically done when we have brand tracking studies."*

- *"We do it regularly when clients have continuous tracking – in more than half of our studies."*

- *"Measuring the long term will be the current practice. But it costs extra and advertisers don't believe it changes that often."*

- *"We do it sometimes, not always. Not every client is asking for it. Different client think differently about the long term. Sometimes they look at long term more from an ROI perspective, other times from a brand health perspective."*

- *"It depends on what clients are used to and their goals. If they just want to know the expected outcome next year, or the next few quarters, that's all they get."*

The data inputs to long-term models can be a real challenge – three to five years of data are required, and marketing variables can change a great deal in that timeframe. Many marketers keep only 52 weeks of data and Nielsen/IRI reportedly discard data after five years. And studying the long term can be an expensive addition to other modeling efforts.

Category Skews?

You would expect people to talk about long-term impact of advertising in long purchase cycle categories, like automotive. But interestingly enough, modelers are looking at long-term effects in a wide variety of categories and for a variety of reasons.

- *"Anyone with a brand looks at long term. Not so much direct marketers, and not so much retailers. The more marketers use TV, the more they look at long term. Digital is more short term."*

- *"There is more interest among brands with strong market share, where it's less about short-term gains and more about brand building and maintenance."*

- *"Financial services are different. There's a short-term/long-term trade-off -- they need to look at default rates 18-36 months out. They add risk when they widen the funnel and generate more short-term gains."*

- *"CPG clients really get it due to their familiarity with trial and repeat."*

- *"It's personality driven -- CPG guys know the Ad Works study and the 2x finding, so they ask the question."*

How Well Are Long-Term Effects Received?

We wondered how well marketers responded to modeler's reports on the long-term effects of advertising. After all, we are putting hard numbers to estimates of how long a campaign continues generating sales after it's done or how long it will stay in the minds of consumers. Are marketers skeptical? Do they believe the numbers?

Here's what modelers told us:

- *"[They react] generally pretty well. The most push-back comes when the results don't align with the brand's pre-conception."*

- *"Some clients get it and some don't. CMOs are comfortable with risk; some clients seem interested. A lot of heads nod when you talk about the longer term outcomes, but not everyone is willing to act on them."*

- *"We're bringing these findings to brands now – and talking about how to position and build this analysis into long-term plans and sales forecasting."*

- *"There is a human factor. Some individuals just don't believe in long-term effects, and then there are those who have made long term investments and need to justify them."*

On Average, How Big Is The Long Term Effect?

The "How Advertising Works" study taught the industry that the long-term sales effect of CPG advertising was equal to the short-term effect. That means over the course of the next two years, advertising campaigns continued to produce sales that eventually, in total, doubled the short-term sales. So … how close or how far off this "norm" are long term effects the modelers see these days?

Their answers surprised us…

- *"2x is not a bad estimate."* (Whoa, what? Wouldn't that be surprising if it were really that simple?)

- *"1.6x is so prevalent – but I don't believe it – it has to differ by brand and campaign."* (Surprising how close 1.6x is to 2x!)

- *“We don’t really have a quotable benchmark – long-term effects range from 0.5 to 2x or 3x the short-term effect.”* (There’s that 2x again! But the range is good, and what we’d expect to see across brands and categories.)

- *“It varies – the long term multiplier can range from -2 to 9x! Low equity, price-driven brands have low multipliers, while other brands have higher.”* (Ah ... a big range that doesn’t average out to 2x. And an observed effect of brand equity on sales!)

We learned that in general, the long-term effects of advertising either vary considerably by brand and category or hover around 2x. While we expected to hear reports of a lot of variation by campaign and category, and a lot of precision, perhaps we need to be open to the idea that the long-term effect of some ad campaigns is about 2x – even if it seems too easy. It makes us think, though. Is the 2x a product of some central tendency in data or analytics approach, or the inexorable pattern of repeat-purchase behavior? We don’t know yet.

But it seems, as an industry, we’re a long way from knowing the answer to the size of long-term effects of advertising in aggregate. And maybe the aggregate shorthand answer isn’t really important. So many variables – brand history, the media and marketing mix, message and creative quality – contribute to short-term sales, and we would expect the same over the long term, too. We occasionally heard the question, “how should management use these results?” Currently they are most often used to provide a more positive ROI for financial justification of a strategic marketing decision. We rarely heard them used to make strategic marketing decisions toward building, or maintaining, profitable brands.

How Do Long Term Effects Build?

We were particularly interested in the mechanism of long-term effects in order to understand how marketers can manage the long term. Our investigation confirmed the How Advertising Works conclusion that there must be a short-term sales effect in order for there to be a long term effect. That's useful to marketers. And we learned the effect builds and decays, but beyond that, there are few rules of thumb we can cite.

- *"We only measure some of the long term effect in the short term – especially if there is a sustaining value such as repeat purchase. But there is only long term if there is short term, so we see the beginnings of the effect right away."*

- *"There is a build up and a decay, but it's hard to generalize."*

- *"We've seen advertising half-lives of 0.5 for one or two years. Effects build quickly, but it's a cumulative effect. If there's no short term effect, there is no long term effect."*

- *"If we have only one brand metric like unaided ad awareness, we see long term move pretty quickly, but a lower funnel metric may take longer. It's an s-shaped curve."*

- *"Long term flows from year to year over a 3-5 year period. With continuity of strategy and messaging, the flow continues."*

- *"We're struggling with this right now. We're not clear on what causes declines in the effect. Baseline seems to naturally erode without support – due to competitors, strategic wear-out or category growth dynamics."*

How Big A Factor Is The Creative?

It is reasonable to assume certain types of creative appeals last longer than others. But surprisingly, we learned that this is not uniformly true. Perhaps this finding underscores the incredible complexity of marketing and advertising and the difficulty modelers have isolating specific variables. Or perhaps there's another reason. In study after study, we have found that creative approach and strength are not routinely factored into marketing mix models. And yet, creative explains something like 70% of advertising effect. What will it take for creative power and message strength to become standard inputs into marketing mix modelers? Who will lead this charge?

Anyway ... some modelers have seen a difference between different types of creative approaches.

- *"Branding ads have longer term effects than promotional ads. Celebrity and sponsorship benefits can be longer term – they create resonance in the marketplace."*

- *"Call to action is more short term. Branded equity building ads have a more sustained flow from year to year."*

- *"Creative is a big factor. Think of the Dove "Real Beauty" campaign. Emotional appeals do better, but we don't see any other consistent patterns."*

Other modelers have seen no differences in creative approach.

- *"There is no difference in long-term effects by nature of ad. It both drives penetration and enjoys the long-term consequence of repeat purchases or it doesn't.*

- Others simply aren't sure.

- *"We don't usually look at this. Advertising is a multiple exposure effect, so it's hard to know which ad is responsible for the effect."*

- *"Adstock depends on creative (and flighting). We see holiday ads in short bursts – and the half-lives are terrible. But they have a long-term effect because of the holiday tie-in. Sometimes emotional ads don't break through. It's hard to generalize."*

- *“I don’t know about creative effect. Usually a change of creative strategy is accompanied by many other changes, so it’s hard to parse out the creative effect.”*

Category Dynamics

We learned a bit about particular brands or category conditions on the long-term effects of advertising. We learned about purchase cycle, but not as much as we would have liked. In a few cases we heard the notion that faster purchase cycle brands produce the total yield of incremental sales faster, but those lifts don’t last as long. It’s almost as if the total yield is fixed and is harvested faster or slower depending upon the repurchase rate.

- *“In a short purchase cycle situation you get more in the sales model, in a long purchase cycle case, you get more in the brand metrics model.”*
- *“Shorter purchase cycles will yield results faster, but less persistence.”*
- “*We haven’t really noticed any effect.”*
- *“I’m not sure.”*
- *“We don’t have enough cases yet.”*

Brand share dynamics are quite interesting.

- *“Big brands get greater ROI, but short term equals long term, more or less.”*
- *“More competitors in a category eat up the gains, so there’s less long-term gains in the category.”*
- *“Category leaders may have a smaller effect overall, but more persistence. It’s hard to grow when you are already big; but you have lots of users and more opportunity for persistence.”*

- *"Smaller share brands benefit more because of the diminishing returns as penetration grows.*

- *"Difference is small but larger brands get more long-term in proportion short-term than smaller brands."*

Approaches For Modeling The Long Term

Many modelers tend to be technique agnostic. The approach they take to evaluating long-term effects is driven by the interests of the client, the marketing strategy and the quality and availability of longer-term data.

- "*We've looked at panel data, but the panel gets small. Generally we either use brand tracking data or sales data."*

- "*We're looking at specific brand perceptions -- generic metrics (awareness, consideration) never link to sales. Purchase Interest doesn't move enough. But in some cases, we factor-analyzed 30 brand metrics and created key drivers."*

- *"We're working now with a client's brand tracking data. The issue is not so much about long-term effects of advertising, but more about what metrics advertising drives and whether those metrics drive sales.*

In the literature search, we learned there are a number of modeling approaches for looking at the long-term effects of advertising. And we saw these approaches in action today.

- Repeat purchase model (Ehrenberg, vonGonten, Hess/Ambach, Wood)
- Price elasticity effects (Mela)
- Baseline decomposition/drivers model (Mela, Cain)
- Brand tracking (Millward- Brown/Vermeer)
- Brand value (Accenture, Bera)

Repeat Purchase Model

One of the most common approaches to measuring long-term effects, especially in CPG, is modeling repeat purchase patterns. It's associated with a classic benefit of advertising -- advertising helps keep consumers in a brand franchise – and keeps them buying over time. Modelers tend to fix a point in time, say at the beginning of a campaign, and monitor the effect of advertising on subsequent purchases.

- "*We use single source data analysis of individual household exposures and purchases, looking at the string of purchases generated by an ad-driven initial purchase."*

- *"It's about the future value of moving a household into trial or a higher depth of purchase – a form of customer lifetime value looking out a year or year and quarter."*

- "We *look back 6 months to define non-brand purchasers. And we can look at promotion-driven purchases as well."*

- *"We do trial and repeat modeling – also look at direct consumer sales. We segment the consumers into value segments to see whether we are driving stronger loyalty. We look at the repeat effect in the second year – but a lot of times, there are other factors intervening*."

Baseline Drivers Approach

In marketing mix modeling, incremental sales are separated from the brand's baseline sales. Sales associated with all advertising and promotion efforts drive incremental on top of a massive amount of baseline sales. For the most part, the baseline is largely unexplained. It just *is*. Because it's unexplained, it's also unmanaged by marketers.

Another popular approach to measuring long-term deconstructs the baseline – it looks at what drove the baseline, what created it, and what's in it. With this understanding, marketers can manage and improve the baseline. Baseline sales are undiscounted, un-promoted sales – high value sales that a brand receives in the absence of advertising or promotional discounting efforts. It would stand to reason that the long term effects of advertising would be found in the baseline – presumably advertising creates awareness, differentiation, likeability and preference for a product that persist over time.

- "*We use the Carl Mela approach -- at any point in time, we get a measure of the baseline. Then we model the impact of marketing on those movements in baseline.*"

- *"Mela's 2010 paper is a good write-up of his approach -- but it may be too complex. It involves using dummy variables to get quarterly estimates of baseline measured through price elasticity, and then determining how advertising drives those dummies."*

Price Elasticity Approach

Closely linked to the evolving baseline approach, another analytical approach looks at analyses of advertising's impact on long-term price elasticity. This approach is founded on one of the most pervasive beliefs in marketing -- that over time, advertising creates differentiation, brand preference and a willingness on the part of the consumer to pay more for a product. Advertising reduces price elasticity. Several modelers look at the long-term effects of advertising through this lens.

- *"We run the model at the household level, then for every purchase, see how much they stay with the advertised brand."*

- *"We use at least 104 weeks of data, which we smooth for the Mela method – and look at price elasticity and core volume changes over time. Then we use a second model that predicts those things."*

- *“Repeat purchase pattern and evolving base are views of the same underlying consumer behavior.”*

Brand Tracking Approach

Though it is a challenge, modelers also look for long-term effects of advertising in brand tracking data. They work to determine how advertising impacts brand health and consumer attitudes towards the brand over time. Presumably advertising messages are motivating, interesting and entertaining, and enhance consumers’ thoughts and feelings towards the brand. We should see a long-term effect of advertising played out in brand tracking data. Stronger brand attitudes should lead to stronger brand sales. However, a direct measure of advertising, branding and short-short-term and long-term sales remains elusive.

- *“We combine behavioral data and attitudinal data. We look for leading indicators and the structure of how these variables interact.”*

- *“Our model works best when we have multiple brand metrics – upper funnel measures move quickly, lower funnel measures build slower, but sustain longer.”*

- *“There has been a lot of work on latent factors affecting the baseline, e.g., state-based modeling. We’ve found that if you have a viable brand tracking measure, it works better rather than trying to extract a latent metric.”*

- *“We look at how brand metrics drive sales in the current period. Brand metrics explain changes in the baseline. We don’t look at brand interactions with advertising -- they’re hard to tease out of the data.”*

Brand Value Approach

Brand value – assessing advertising's contribution to a brand's financial value – is an approach several modelers discussed. The operational model is that advertising entrances consumers to stay in the brand franchise. Their purchasing power over time has a value, in financial terms, the net present value of which is attributable to advertising.

- *"We look at intangible value, free cash flow and brand equity – we look to see how marketing affects band value in a 5-10-15 year outlook. It is an entirely financially focused analysis. We model marketing impact on sales and on brand value, without using any consumer metrics. Mechanically, it's simple logistic regression."*

- *"We look at how advertising spend drives differentiation (distinctiveness) and relevance (meaningfulness)." Then we see how those two key metrics drive brand value. It's an aggregate time series model with two layers – perception (how it's driven by the marketing mix) and spend (which impacts margin, ROI, P/E ratio.) It's mostly about making the company more profitable – better elasticities, pricing power, ROI and growth."*

Are the Approaches Validated?

We were interested to learn whether the results of long-term effects analyses hold up -- whether they are routinely validated, and how they are validated. If we want marketers to consider the long-term effects of advertising, it's important that the forecasts hold up. Here's what we learned:

Some modelers definitely have an approach for validating their long-term forecasts.

- *"You can compare forecast results with actual results for any long term projection. We routinely do this. Take data from out-years and use them to predict Years 1 and 2. Then use the actuals to see where the model is over/under representing."*

However, validation is a challenge.

- *"We've done validations, but they're hard to do. We look across different approaches for convergence – and see how our analyses play out across the marketplace – a lot of times, new competitors enter or changes in the economic environment intervene."*

Generally, estimates from the models are self-validated over time.

- *"We see if results match the forecast. One year, three to five years typically, forecast well."*

- *"We look at face validity. When we have upper funnel models and forecast businesses, the forecasts tend to be better."*

- *"It's self-validating. If you get the model right, what you forecast is almost ordained in the aggregate."*

Final Thoughts

We learned a lot throughout this exploration and see a number of ways to advance the industry's thinking on how to measure long-term effects.

First, let's share more learning. Many modelers have specific brand case studies and would be willing to share their learning (pending client permission, of course.)

We think there's an opportunity to take all the case studies modelers share and see if there are any normative effects on the size of the long-term effects and the processes with which they are modeled.

In addition, we'd like to see renewed interest in brands, brand equity, brand value and the role of advertising. There's an opportunity to develop a management learning event and promote long-term vision. The ANA could also participate and engage marketers directly.

And finally, the industry needs to keep going – advance technically. Store level data, the fuel of most marketing mix models, will never reveal the importance of advertising long term, so we need a true consumer-level understanding. We need to understand repeat purchase behavior and other behaviors – as well as consumer attitudes and perceptions on the value of brands. We need to unify definitions – especially on something as straightforward as what is the long term? And we believe there is room to study more thorough validation approaches.

Thank you,

Sequent Partners
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Alice K. Sylvester

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Appendix -Contributors

- Many thanks to Leslie Wood and MASB, WARC and all the experts who pointed us in the right direction for the literature review and discussion guide

Nielsen	Carl Mela
Analytic Partners	IRI
MPhasize	Marketshare
Brand Science	NPD
Georgia Pacific	Kellogg
Accenture	Nielsen MBI
NCS	ThinkVine
Concentric	P.M. Cain
Bera Brand Management	Mike vonGonten
Millward Brown	Marketing Evolution