Identifying Metrics That Matter:
What Are the Real
Key Performance Indicators (KPIs)
That Drive Consumer Behavior?

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What is important to consumers? /// A significant body of consumer research is devoted to answering the deceptively simple, yet highly elusive question of “Why did a customer or prospect do what he or she did?” or, taking it one step further, “Why is a customer or prospect intending to engage in some future action?” In the search for answers, market researchers typically investigate consumer attitudes, beliefs and opinions, or underlying needs and wants, and seek to relate those insights to reported past or future consumer behavior. These findings then assist companies in understanding and, ultimately, in forecasting expected future consumer responses to various marketing initiatives.

The difference between being important and driving sales ///

To determine the importance of attributes, benefits or claims (ABCs) and thereby identify KPIs, it is common for market researchers to use either open-ended questions or ratings and rankings. More sophisticated statistical methods of inferring the importance of each ABC include correlation, regression and conjoint techniques. However, such traditional techniques do not establish whether a metric actually *drives* sales. They claim to identify and quantify what is important to the consumer from data typically collected at a single point in time and thereby can leave market research analysts “fooled by association.” At its essence, correlation does not equal causation.

Using VAR models to identify true sales drivers or brand health indicators ///

The only way to demonstrate likely causality is through experimental design or by collecting multiple measurements over time and applying time-based analytic techniques to that data. For most companies, the latter option will be the most practical. Through repeated measurement over time, cause and effect associations can be analyzed using *vector autoregression (VAR)*, a form of econometric modeling that is receiving increased attention in marketing research applications. A VAR model is a system of equations in which multiple variables evolve over time, interact with one another and influence such defined success measures as sales, market share and customer retention. Candidate KPIs from management experience or traditional techniques go into the VAR model, which then provides evidence on which metrics drive performance and thereby deserve the designation as metrics that matter (MTMs). A VAR model is structured to attribute performance lifts (and declines) correctly across drivers and over time, differentiating between immediate and dynamic effects, and between direct and indirect influence. For instance, television advertising can both directly lift sales over several weeks and stimulate social media conversations, which in turn can drive sales for months to come. When available, consumer actions (e.g., search, click-through, website page views, likes, postings) are

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included with competitive and market environment variables in VAR models to demonstrate how consumers respond to changing market conditions, competitive activity and marketing initiatives. What emerges from a VAR analysis are MTMs that have been empirically demonstrated to drive sales and/or market shares over a defined time period within a real competitive landscape. Figure 1 shows how different market research input ultimately generates MTMs.

Rigorous and continuous tracking of what drives market share and sales can provide marketers with a competitive advantage for planning marketing initiatives. The authors present multiple examples from ongoing brand-health tracking programs to demonstrate how VAR models identify the consumer metrics that have the greatest impact on sales and market share. In each case, they show how the information from such analyses gives clearer and more unambiguous direction for optimal marketing resource allocation than any other traditional approach.

In a study of *personal hygiene products*, the analysis showed that promotion awareness had nearly 10 times the impact on base sales than any of the other KPIs. This MTM did not emerge as statistically significant in a traditional derived importance analysis. In addition, the VAR analysis showed which type of user imagery was most effective and should be emphasized in future promotions.

{ Box 1 }

HOW VAR MODELS WORK

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Vector autoregression techniques model the interdependencies among multiple time series for more than one evolving variable (e.g., for sales and single instruments within the marketing mix). They combine the benefits of cause and effect in modern econometric models with the time series benefits of traditional autoregression (AR) models that are restricted to one single variable. In VAR analysis, each variable has an equation explaining its evolution on the basis of its own lags and the lags of the other model variables. By using this method, the same metric can be a dependent variable in one equation (e.g., explaining social media by TV ads and other drivers) and the independent variable in another equation (e.g., explaining sales by social media and other drivers). A precondition for conducting VAR analysis is the availability of time series data.

Theory and experience help inform researchers' decisions on which candidate metrics to include in VAR models, but no assumptions are needed on the relationship of the variables or their time dimensions (e.g., wear-in and wear-out of effects). In this respect, VAR analyses differ from most structural equation modeling, which is driven by theoretically founded assumptions with respect to variable interactions.

VAR modeling...

- > filters MTMs from a whole set of potentially relevant ABCs and KPIs
- > quantifies the sales impact of each MTM
- > identifies which MTMs drive different aspects of sales (base, incremental and TV advertising-driven sales)
- > observes lead and lag effects that cannot be tracked when measurement is done at a single point in time

FIGURE 1:
Funnel of marketing research output

ABCs = attributes, benefits or claims

KPI = key performance indicator

MTMs = metrics that matter

Modeling of three years of sales data on a *snack product* showed which indicators caused immediate or lagged effects. Short-term sales turned out to be driven more by product/brand features whereas total sales were driven more by occasions of use – not an unexpected finding in what is generally considered to be an impulse-driven category. Product satisfaction, a KPI widely considered to drive snack product consumption, was identified as an MTM, having both short- and long-term effects. Overall satisfaction had the directionally strongest relationship with purchase interest and the significantly strongest with overall liking.

An application in the *over-the-counter (OTC) drug category* showed how symptom appropriateness (a well-accepted driver of brand selection in the pharmaceutical industry) impacted sales. Derived importance analyses, with purchase intent, liking and satisfaction as the dependent variables, did not show statistically significant differences between the 10 symptoms and therefore did not provide a clear road map for setting symptom priorities for future marketing communication efforts. All symptoms were observed to be essentially equivalent, with each accounting for between 9 % and 13 % of the “importance” variance.

Figure 2 shows the results of VAR modeling that parsed out the effects of total unit sales and advertising-driven incremental sales for this drug. It shows the impact on average four-week unit sales, on total unit sales and on incremental sales solely due to advertising.

A clear MTM priority was apparent. Improvement in perceived effectiveness in alleviating migraine headaches, muscle aches and backaches was shown to have a greater effect on sales than relief for general aches and pains, regular headaches, cold or flu symptoms and, especially, general strains and sprains. In terms of sales directly associated with advertising, relief was less differentiated but was related to higher ratings on appropriateness for joint pain and stiffness, general aches and pains, and muscle pain.

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VAR modeling enables marketers to focus marketing initiatives on those MTMs that promise the highest returns.

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How managers benefit from VAR-analysis

> Leveraging marketing initiatives to optimize sales

/// VAR modeling enables marketers to focus marketing initiatives on those MTMs that promise the highest returns. The partitioning of sales effects in the model helps to allocate marketing and promotion budgets most effectively. Using the VAR results, managers can further implement a formal return on marketing investment (ROMI) analysis to drive resource allocation decisions.

> Analyzing effects at the competitive brand and line-extension level

/// Competitive brands can also be modeled. This usage of VAR models can directly address how well different brands meet MTM standards. Line extensions can also be independently evaluated with the goal of identifying MTMs that can facilitate parent brand differentiation and portfolio optimization. Private-label and store-brand products can be modeled either aggregately or individually, allowing researchers to observe the existence of any interactions. “In the snack study we found an unexpected sales lift for private-label products because of positive spillover effects from the marketing initiatives for a leading, branded snack product,” co-author Martin Lautman notes.

FIGURE 2:
Brand attribution symptom appropriateness

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The VAR analysis can also check whether the same MTMs that drive a category also fuel the sales of each of the brands in that category. “The increasing proliferation of alternative product options, multiple need states and alternative distribution channels have all led to somewhat fuzzy categories and competitive sets. VAR models are able to identify alternative drivers for different brands,” co-author Koen Pauwels explains.

- > **Observing effects over time** /// Assessments of importance at a single point in time cannot take into account lead or lagged effects. Moreover, theory almost never specifies *when* expected effects are supposed to materialize. Finally, asking consumers what drives their decisions assumes these consumers are able and willing to recall and verbalize what influences their behavior. For instance, “promotion” and “advertising” awareness have consistently been shown to drive future sales in VAR models across many categories but are typically not mentioned at all by consumers.

It is reasonable to assume that the relative importance of MTMs for a brand will vary as it evolves over time. This would suggest that consideration should be given to updating VAR analysis on a regular schedule reflective of a brand’s evolution and changes in its competitive set. “Even slow-moving signals, particularly those directly related to a brand experience, can be monitored in a long-term tracking program, and their influence, even if only gradual, can be detected,” the authors explain.

> **Measures of advertising effectiveness can be included**

/// Another advantage of this type of modeling is the possibility of including metrics for advertising and promotion effectiveness (awareness). VAR analyses can assess their sales impact relative to other metrics of brand health if they are all incorporated into a single brand health survey instrument. Consumer recognition and recall of actual advertising, promotions and even a core positioning can be included in the VAR analysis. This helps companies set spending and message priorities. VAR models can confirm copy testing results by determining whether the messages with the greatest sales impact are also generating the most consumer registration and the greatest payback in a pretest. In a VAR approach, the impact of brand and user-oriented imagery and emotional MTMs can be compared directly with the sales impact of more product- and feature-based MTMs. In a number of analyses documented in this study, emotional MTMs were found to be much more influential than product-based MTMs in driving sales.

— **Managerial summary of an article published in the top academic journal “Journal of Advertising Research”:**

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