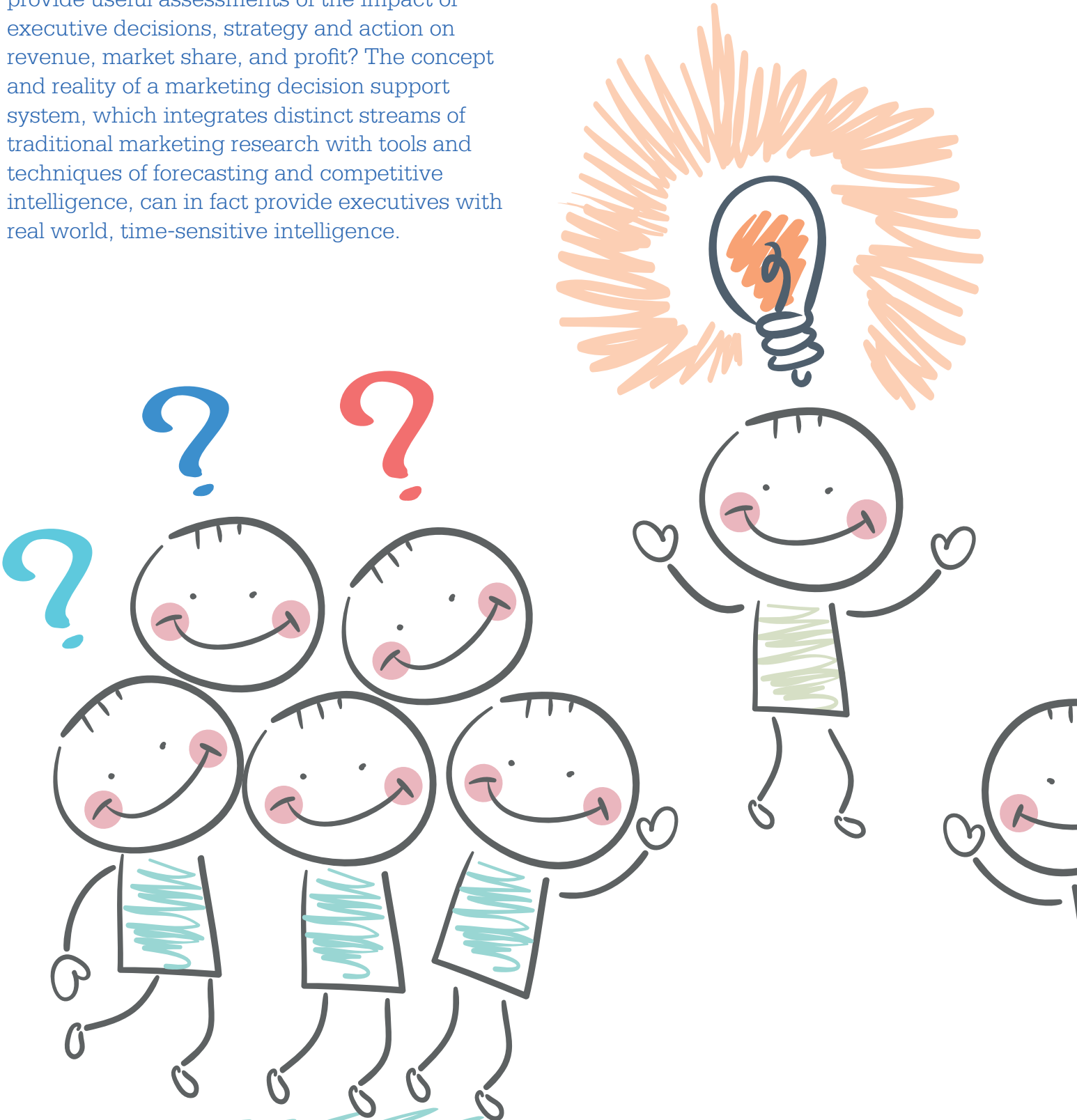


EFFECTIVE EXECUTIVE DECISION MAKING WITH MARKETING DECISION SUPPORT SYSTEMS

By Sanjay Kumar Rao, Ph.D.

Is traditional marketing research designed to provide useful assessments of the impact of executive decisions, strategy and action on revenue, market share, and profit? The concept and reality of a marketing decision support system, which integrates distinct streams of traditional marketing research with tools and techniques of forecasting and competitive intelligence, can in fact provide executives with real world, time-sensitive intelligence.



Event impact modeling injects much needed realism into an MDSS that can help to fine tune its key components.

Consider the following situation. A manufacturer of digital communication devices is in the midst of developing a revolutionary product that combines the best in office productivity software, entertainment experience and telecommunication. The product represents one of several variations which together can define a new generation of products that serves the rapidly evolving needs of a large group of consumers with distinct American and global market segments.

While the product is about five years away from launching, development executives are looking to answer questions such as:

- Which types of product features are likely to have the most impact on product trial, revenue and growth in a three year window of time after launch?
- If the product was offered with distinct features for each of the five largest segments, e.g. five distinct products were launched, what would be the incremental impact on revenue?
- What types of marketing investments, i.e. TV advertising, online outreach, print advertising, in-store promotions, direct to consumer marketing, would yield the most revenue within three years of launch?

- What would be the estimated impact on profits of alternative courses of action, such as launching with alternative product configurations aimed at distinct segments, supported by varying levels of marketing investments?

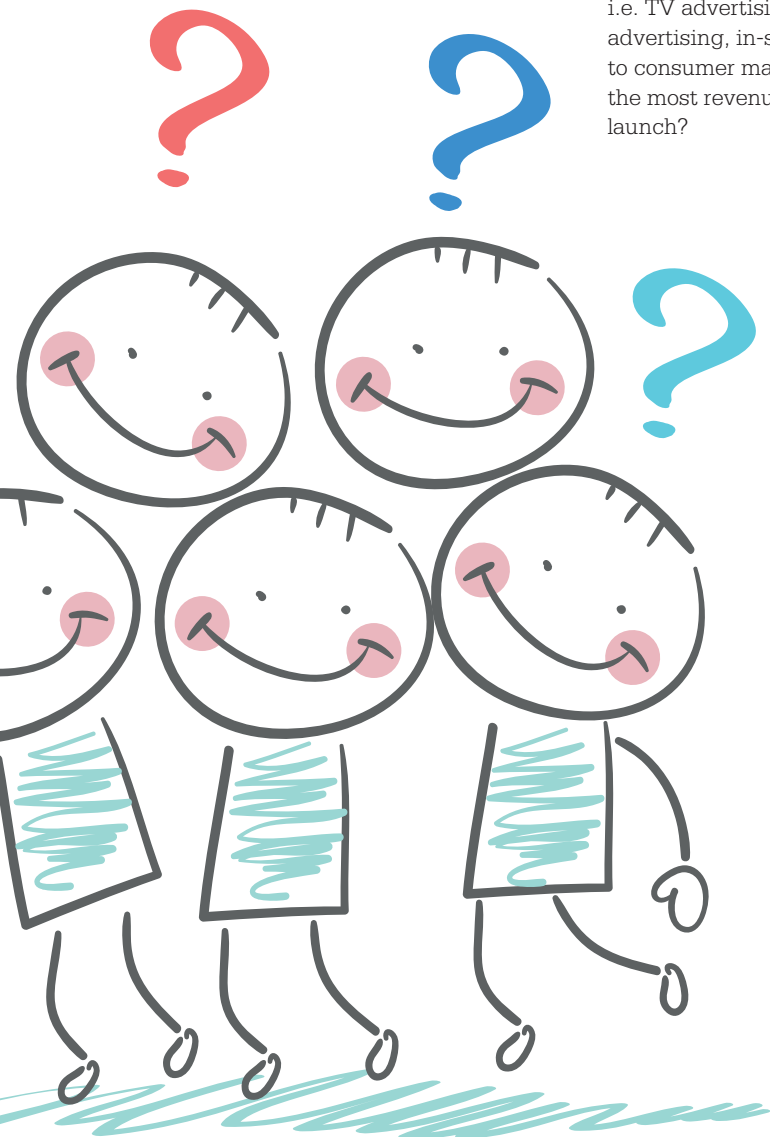
The questions represent challenges faced by executives in several industries that rely on innovation to sustain growth and serve the rapidly evolving needs of its markets. For the marketing team, the questions represent a need to integrate diverse streams of research on consumers with information on the market and the ability of marketing actions to generate desired response. Further, the challenges demand the strategic marketing researcher to deploy technical skills that demonstrate proficiencies in market research, marketing modeling, forecasting and financial analysis.

A common misperception prevailing in some industries is that such questions cannot be answered by marketing research. Another erroneous perception is that answering such questions requires piecemeal research, analysis and predictive modeling conducted over several years, if at all, much of it fraught with uncertainties that may only serve to reduce the reliability of results.

Advances in the fields of market research and marketing models coupled with the availability of detailed micro-level data on consumer behavior and market performance, however, have made possible the development of marketing decision support systems (MDSS). Such systems are designed to integrate seemingly disparate data, research, analysis and predictive capabilities toward making reliable assessments of the impact of a range of marketing strategies on product performance.

Marketing Decision Support Systems

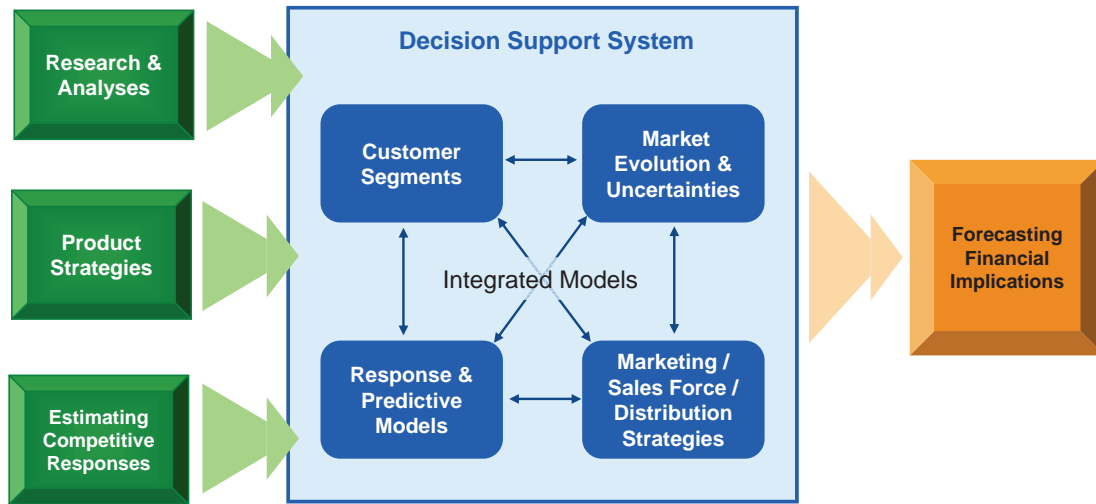
An MDSS is a system of interlinked marketing models calibrated on customer, market and corporate research. The models seek to represent a realistic market environment, customer segments of relevance to the product under consideration, segment decision making processes, and the influence of marketing effort on such decisions. By definition and construction, such a system is unique to a product, its market and the types of decisions that need to be modeled for reliable prediction. A typical system can predict measures that represent top line performance such as revenues, market shares and growth over time, as well as costs and net financial impact in terms of profit, profitability, returns on investment and, where necessary, the present value of future performance.



Marketing Decision Support Systems

For Effective Executive Decision Making

A custom decision support system can be built and used to forecast the market value of alternative strategy options based on financial implications



Marketing research, existing strategies and baseline information provide critical inputs to developing a decision support system involving multiple stakeholders, influences and market uncertainties

Figure 1

The most effective MDSS is best constructed using raw inputs developed from the conduct of product-specific primary market research, compilation of retrospective customer and market data using historical, longitudinal secondary data, assumptions and potential impact data collected from issue-specific Delphi sessions and benchmarking through data from similar or analogous products and their market performance over time.

Where possible, analogues from within and outside a product's industry are used to refine the reliability and predictive power of one or more models in the MDSS.

Figure 1 outlines a schematic of an MDSS.

Customer Segments

Detailed learning about customer segments likely to be interested in the product under consideration is a critical foundation for an effective MDSS. Outputs are reliable to the extent that characteristics of potential customers are accurately captured for use toward describing – and subsequently predicting – behaviors vital to generating trial, repeat purchases, and loyalty. The ability of marketing models to adequately describe and predict future behavior is dependent upon the breadth and depth of information available about customer proclivities and reactions to the new product and its variations.

A segmentation scheme that integrates information on past, current and future customer behavior with underlying covariates in awareness, attitudes, experiences and preferences is a vital building block for an effective MDSS. Surveys of the relevant customer population designed to collect data on such constructs can provide the basis for the application of marketing science models that result in the identifying, profiling and sizing of relevant customer segments that best represent the addressable market in the MDSS. Methodologies such as those based on latent class models and classificatory auto-regression (CART) are best suited to developing such integrated segmentation schemes.

Normative and Predictive Models

Understanding key drivers of segment interest, trial, repeat purchase and sustained loyalty to products in the category and the new product and its variants in particular is another vital input likely to impact the usefulness of an MDSS. Such understanding needs to be descriptive and pedagogical so as to contribute to the development of insights about what has worked historically and what may work in the future. Perhaps more critically, such understanding is best codified into normative and predictive models of

customer behavior that – depending upon assumptions of product characteristics, marketing activities, competitor reactions, market environment and changes thereof – can reliably forecast product performance in terms of sales, market share and market growth over a reasonable time horizon. Surveys designed to collect data on new product optimization, estimate competitor impact, assess impact of specific marketing actions on customer behavior and potential customer expectations from current and new products in the future, provide vital inputs for such goals. Reliance on understanding customer reactions in the past to analogous product, competitor and marketing activities is also an important source of information. Calibrating models of customer reaction to variations in product characteristics, marketing activities, competitor reactions and the market environment is accomplished by adopting proven frameworks provided by marketing science methods such as conjoint and discrete choice analysis, method of maximum differences, marketing and sales response modeling, time series analysis, simultaneous/structural equations modeling (SEM), and seemingly unrelated regressions (SUR). Such frameworks provide a scientific methodology to describe, understand and predict customer behaviors to a wide range of actions contemplated by a

manufacturer and a marketer of a product or its competitors.

Event Impact Modeling

While marketing science models provide a reliable, numerical view of the market and the action/reaction paradigm characterizing behaviors of potential customer segments for the new product and its variants, an MDSS can usually benefit from information that fine tunes its key components. Such fine-tuning is accomplished by scanning the market environment for events that represent external, often transient or one-time perturbations to the system. Examples of such events could be the introduction of disruptive new technologies, regulatory actions limiting market definitions or assumed technology use, unexpected patent litigation or outcomes, the availability of new markets or customer segments, e.g. new geographies, mergers or acquisitions leading to changes in addressable market potential, or revision of the product itself. If and when a hot list of such events is developed, conducting research, analysis and making subsequent changes to the marketing and customer behavior models help refine – and inject much needed realism into – the MDSS.

Dynamic Impact

The value of an MDSS is enhanced when the outputs of the marketing science models are available over a full time frame, e.g. 3-7 years, rather than only as static estimates representing a steady state. This is made possible by a keen understanding of what the steady state is, what factors are likely to make the market environment less than steady (or dynamic), what is the likely pattern of market adoption under dynamic conditions and what actions by the manufacturer would move the system toward steadiness. A marketing scientist can conduct systematic research and analysis to develop such understanding and apply its learning. Conducting Delphi sessions with opinion leaders in the category tightly focused on specific objectives requiring insight and numerical estimates of impact is usually a vital step. By their experience and involvement with multiple products in the market under consideration, such leaders have typically developed the necessary expertise and foresight to provide valuable guidance on how the market would behave under less than predictable circumstances. Assessing rates, magnitudes and typical patterns of product uptake under alternative definitions of what represents a dynamic market situation is also possible by reviewing historical data in analogous cases within a category, or in adjacent categories that

share some important traits that matter to the investigation. Working off research that characterizes the current, steady and dynamic states, a marketing scientist can develop numerical representations of how customers – and the aggregate market – will likely behave in the continuum of time linking the three states. Examples of such representations include predicting product uptake rates through to the steady state, estimating changes in the sizes of market segments, predicting product sales, market shares and their sources, and assessing the change (if any) in the available market potential.

Financial Impact

An important part of a viable MDSS that offers sustained value to its users in marketing, strategic planning and corporate departments is the ability to transform outputs of marketing research and science into meaningful financial measures. Such measures enable key resource allocation decisions and budgets that have a foundation in reliable customer feedback; and as a consequence, can be expected to provide results in line with expectations. Working with executives charged with planning and financial analysis responsibilities, a marketing scientist builds into an MDSS the ability to make assumptions about costs, prices, expected margins and their variations over time. Also included are similar best guess estimates of competitor cost and profit structure. Top line estimates of performance, i.e. sales, market share, over time and the underlying resource allocations are then subject to cost and price parameters in order to develop reasonable working measures of profit and profitability. The MDSS is structured to recognize product, competitor, marketing and financial assumptions in a framework that reflects customer and market response to alternative strategies.

Simulations for Strategy

The value of an MDSS is not confined to making decisions about resource allocations, enabling performance forecasts, and understanding and predicting customer behaviors not otherwise possible through conducting piecemeal market research. When used as a tool for simulation, an MDSS provides a valuable basis for developing marketing strategies. When brand teams are required to outline strategies that have impact on specific customer behaviors – and by extension on the top and bottom line – a significant need is to understand and quantify such impact without conducting expensive additional research, analysis or modeling. Relying upon an MDSS in such situations enables

brand teams to ask a multitude of “what-if” questions, construct hypothetical scenarios that represent self and competitor strategies, and obtain accurate answers in the context of a well-defined marketplace over time. An MDSS can serve as a viable system at the center of organized research that builds a detailed picture of a future marketplace subject to seemingly conflicting strategies from multiple product teams. Depending upon the type of simulations likely to represent the impact of alternative strategy and market assumptions, the marketing scientist can build into an MDSS standard simulation tool, such as a Monte Carlo analyzer. Outputs from marketing science models subject to alternative inputs representing alternative strategies are fed into such an analyzer so that a range of potential outcomes, subject to realistic estimates of market uncertainties and responses are generated. A study of such outcomes, their underlying drivers, the associated strategic assumptions and product and resource requirements shaping them provides a reliable, empirical basis for devising strategies that have measureable impact.

MDSS: Structuring Marketing Research Activities

A case can be made to structure disparate marketing research activities supporting a new product under the rubric provided by an MDSS. An MDSS provides a rational, quantifiable basis for making critical marketing decisions on the basis of cumulative, integrated marketing and other research, the value of which is assessed through acceptable top and bottom line business measures. Equally important, an MDSS allows a marketing research team to develop insights based not merely on a single, stand-alone project, but in the context provided by other research projects with related or non-overlapping objectives concerning the same product. The validity of such insights is also available for assessment in terms of their impact on market and financial performance. Every marketing research project (qualitative, quantitative, hybrid or integrated, primary or secondary, involving use of brand or corporate data) can be seen as providing vital inputs to an MDSS, which is set up to answer a raft of questions important to decision making. When research activities are structured to answer business questions on the basis of rational measures, it can only result in better business decisions. ▼

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