Moving Marketing Communication Measurement Inside

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In 1974, Schultz resigned as Senior Vice President of Tracy-Locke to launch a career in academia. He obtained a Master's Degree in Advertising and a Ph.D. in Mass Media from Michigan State University while also teaching in the MSU Department of Advertising. He joined Northwestern in 1977.

Schultz has consulted, lectured and held seminars on marketing, integrated marketing communication, branding, advertising, sales promotion, and marketing and communication management in Europe, South America, Asia/Pacific, the Middle East, Australia, and North America. His articles have appeared in Advertising Age, Journal of Advertising Research, Journal of Advertising, Journal of Marketing Communications, Business Marketing, Journal of Direct Marketing, Journal of Business Strategy, Journal of Database Marketing, AdMap and Marketing News. He is author/co-author of nine books, Strategic Advertising Campaigns (now in fifth edition), Essentials of Advertising Strategy (now in third edition), Essentials of Sales Promotion (now in third edition), Sales Promotion Management, Strategic Newspaper Marketing, and Measuring Brand Communication ROI. His book, Integrated Marketing Communications was the first text in this emerging field. He was the founding editor of the Journal of Direct Marketing. He is the Associate Editor of the Journal of Marketing Communications, and on the editorial review board for a number of trade and scholarly publications. He is also a regular columnist for Marketing News and Marketing Management. Schultz' recent books, Strategic Brand Campaigns,1999, and Communicating Globally, 2000, were published by NTC Contemporary Publishers. His latest book, Raising the Corporate Umbrella, was published in London by Palshaw in August, 2001. His update on IMC to be titled Integrated Marketing Communications 2.1 is planned for 2002.

Schultz is former director of the Promotion Marketing Association of America and immediate past Chairman, Accrediting Committee, Accrediting Council in Journalism and Mass Communications. He has also served as Director, Institute of Advanced Advertising Studies, as a public member on The National Advertising Review Board and was an original member of the Board of Directors of Virginia Commonwealth University's Ad Center. He is also co-chair of the IMC Committee of the Advertising Research Foundation. He was selected the first Direct Marketing Educator of the Year by the Direct Marketing Educational Foundation. He was named Educator of the Year by the Chicago Chapter, Sales and Marketing Executives Association. He was named Distinguished Advertising Educator of the Year by American Advertising Federation. He is also a member of the American Marketing Association, American Academy of Advertising, Advertising Research Foundation, Association for Consumer Research, Business Marketing Association, Direct Marketing Association, and the International Advertising Association. He is past Chairman, Communications Committee, Illinois Division, and American Cancer Society.

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Formerly Dr. Block was a Professor and Chairperson of the Department of Advertising at Michigan State University. He began his academic career as an Assistant Professor there in 1976 after completing doctoral study. Previously he was a Senior Market Analyst in Corporate Planning at the Goodyear Tire and Rubber Company.

While at Michigan State he was a Faculty Associate of the Rockford Cable Project which was a National Science Foundation funded two-way cable television demonstration project. He was the Principal Investigator for a professional career choice study funded by the National Academy of Sciences, a study on the effect of alcohol advertising funded by the Bureau of Alcohol, Tobacco and Firearms and three other federal agencies, and several studies for the State of Michigan. He has founded and sold a telecommunication research and consulting company which was actively involved in cable television franchising and contract research. He was a consultant to the Federal Trade Commission.

Among his books are Analyzing Sales Promotion which was first published in 1987 and is now in its second edition, Business-to-Business Marketing Research in 1995, and Cable Advertising: New Ways to New Business published in 1986. A chapter, "Marketing Communication Engineering," appears in Interactive Marketing. He has written several other chapters, many articles in academic journals, research reports and presentations. He was featured on the NOVA program "We Know Where You Live."

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Abstract

Marketing organizations have relied on external organizations to measure the success of marketing communication activity. The traditional dependence on external organizations developed with good reasons in the historical marketplace. Changes in technology now make better marketing communication measures available that rely on internal data. Analysis and modeling should no longer be separated from the development of a dynamic marketing strategy. A four step process is suggested including assembling the internal data, preparing the data, selecting statistical models, and applying the analysis to the marketing communication problem.

Historically, for most marketing organizations, marketing communication measurement has been an external activity based on external measures and conducted through external measurement systems. The marketing organization has attempted to understand the success of its marketing communication programs and activities among various groups of external customers and prospects. Further, it has tended to use external organizations to collect and analyze the necessary data that then provides the firm with various measures of success. For example, external rating services for broadcast listernership or viewership, readership and ratings of print advertising, television pre-testing methodologies, new product forecasting services, brand tracking services and the like all attempt to measure or value the impact or potential of the marketing communication program and activities. All generally have been or are outside the marketing organization. Thus, a vast array of external organizations including vendors, research companies, syndicators, consultants and the like have emerged to service the marketer's needs by measuring the impact and effect of various types of marketing communication activities.

This external approach probably worked well in the 20th century marketplace. But, it is likely too slow and cumbersome, measures the wrong things and provides the organization with too little information and direction to enable marcom managers to cope with the increasingly sophisticated, dynamic and global 21st century marketplace. We believe the measurement of marketing communication results, particularly those relating to the impact, effect and return-on-investment of marketing communication investments, should be moved back inside the marketing organization. Further, we provide a methodology by which this can be done efficiently and effectively.

I. The Case for Internal Marketing Communication Measurement

There are many reasons marketing communication measurement and evaluation developed outside the marketing organization that sponsored and managed it. Many of these approaches, techniques and methodologies made eminently good sense when they were developed. Today, however, the marketing organization could substantially benefit by having closer and more relevant control of its marcom evaluation and measurement process.

This is not a condemnation of the external suppliers, it is simply a recognition that the marketplace has changed, the marketing organization's needs have changed and the methodologies used to evaluate marketing communication have changed as well. Thus, continuing use of out-dated and irrelevant marketing communication measures simply flies in the face of good management of the organization's finite resources.

In this paper, we present the basis for our proposal, describe the changes that have occurred that make this internal measurement system possible and practical and provide some direction on how marketing organizations might go about developing the needed internal measurement systems. The paper is organized into four parts. (a) why marketing communication measurement has been focused on external tools and measures and why the firm has generally relied on external

measurement organizations to develop these methodologies and reports (1, 2), (b) a discussion of how changes in technology and the increasing ability of the firm to capture, store, manage and manipulate marketplace and marketing behavioral data have changed the needs and requirements for marcom measurement approaches (3, 4, 5,6), and (c) how, today, a marketing organization can use internal data to measure the impact and effect of its marketing communication programs (7, 8). We conclude (d) with an outline of how an internal marketing communication measurement system might be developed, implemented and managed within a typical marketing organization.

II. Why Marketing Communication Methodologies and Measures of Success Developed Outside the Organization

Initially, marketing communication was tied directly to marketplace results. And, measured directly by the marketing organization. Typically, a selling firm posted notices on buildings, handed out flyers, placed newspaper advertisements for its products or services in the immediate area in which it proposed or planned to sell its products or services. For example, the circus came to town, held a parade, posted some bills on walls and fences and then counted the number of paying patrons that attended the event. A direct correlation between expenditures and returns.

Early brand manufacturers used newspaper advertisements, free samples and other techniques the same way. Thus, they could directly connect marketing communication investments to marketplace results. So many dollars in free samples would lead to so many direct purchases. It was a simple financial equation and an easy one on which to calculate the ROI (return-on-investment). Either the marketing communication activity paid a return or the organization went out of business.

As the marketplace became more complex, i.e., channels increased, competitors multiplied, distribution systems lengthened and new media forms developed, the direct correlation between marketing communication, typically various forms of media advertising, and the resulting sales returns, became more difficult to connect and correlate. Leads and lags in various forms of measurement became a major problem. Marketing communication investments were made today, but, the media forms were not delivered until several days, weeks or perhaps even months later. Mass media developed with its focus on image and broad scale communication effects. Distribution channels became longer and more difficult to track. The impact of competitor activities became more difficult to learn about and evaluate. Thus, the marketing communication industry, led by the development of the marketing discipline, both academically and professionally, and various trade associations, began to argue for a communication related model as the basic measurement tool to determine marketing communication impact.

The primary argument raised by industry leaders in support of a communication-based measurement system was that there were simply "too many intervening variables" in the communication-consumer behavior chain for the measurement of the impact of marketing communication to be made directly (9, 10).

This premise was easy to support. Prior to the rise of these "connectivity" arguments, the field of sales and marketing, at both the practitioner and academic level, began to develop psychological models of advertising, marketing and marketing communication effects. These basically posited that advertising was primarily an information transfer process, based on a one-way, mass communication model of outbound messaging (11, 12, 13). Therefore, advertising was supposed to "teach" and "persuade" consumers about various products and services by moving them through some type of psychological recognition, acceptance and preference process. Hopefully, at some point, these changes in attitudes and feelings would lead to a specific, positive behavior. Thus, the task of advertising was not necessarily to generate an immediate sale, but, to pre-condition consumers to buy, often at some later point in time (14, 15). Thus, when a consumer or prospect recognized a problem they wished to solve, the mental model the advertiser had hopefully constructed in the consumer's mind with his or her previous advertising and marketing communication would come into play, and hopefully, a purchase would result.

These psychological models were the basis for the famous AIDA advertising model (Attention, Interest, Desire and Action) (16) and the later, somewhat more sophisticated Hierarchy of Effects (17) and DAGMAR (18) models. In each case, the premise was that advertising, or, later, marketing communication,

moved the customer or prospect through some type of mental process and that the steps in that mental model could be measured, changes charted and impact valued (19).

The end result of the marketplace changes, the acceptance of a psychological model of advertising and marketing communication effects and the development of various statistical methodologies and approaches over time encouraged the entire marketing communication industry to move toward various types of attitudinal measures and away from direct sales results or impact. These changes occurred in the 1950s and 1960s, and, for the most part, they are still the models and approaches that are used to this day.

The process that developed nearly a half-century ago, was based on a process that looked something like this: Advertising and marketing communication measures would start with some form of population sampling, commonly among the general population, or in some cases, among suspects and prospects for the product or service. The data gathering tools would be primarily focus groups or survey research using mail, telephone or perhaps, mall intercepts or fixed location surveying. These samples and their results, would then be projected to the general or selected target population. Thus, marketing communication measures, primarily of an attitudinal nature, were derived. Those were then relayed back to the marketing organization, usually with comparisons of other advertiser's results or against a set of norms the research, consulting or measurement group had developed.

The model at the beginning of the 21st century doesn't look much different. The industry standard for marketing communication might be summarized as: (a) develop messages and incentives, perhaps with some limited forms of pre-testing; (b) purchase media time or space to deliver those messages and/or incentives based on some sampling technique to indicate the size of the media audience; (c) measure the impact or effect of those marketing communication investments either through some form of media delivery methodology or, through projected or measured changes in various psychological measures, i.e., communication effects such as awareness, recognition, conviction, intent-to-purchase and the like among the various pre-selected groups of consumers. Then, (d) report those measures back to the marketing organization, again, compared to "averages" or "norms" developed by the research organization or the general population. So, not much has changed in the last 50 years in marketing communication research and measurement (20, 21).

Using the methodologies just described, marketers knew, or thought they knew, what was occurring in the marketplace, even though most of these measures recorded only gross or general effects. Over time, the measures and measurement techniques become the objective rather than result, i.e., the overnight Nielsens, the "commercial liking scores", the "most read advertisements" and the infamous "top two boxes" on almost any form of customer attitudinal or preference study. These "scores" replaced the knowledge or understanding they were supposed to provide. As a result, a host of "sample and project" methodologies have become the "stock-in-trade" of marcom measurement and, almost all of it, external to the marketing organization. This system has become comfortable for marketing communication managers, but, one that is not very closely related to the needs and wishes of senior management of most marketing organization around the world today.

In our experience, senior management is increasingly calling for financial measures of marketing communication returns, not attitudinal responses. Dollars or pounds or bhats or pesos out and the measurement of dollars or pounds or bhats or pesos back in to the organization as a result of investments in marketing communication programs (22, 23). That, we see, is the challenge for marketing communication managers today and increasingly will be the requirement in the future. And, this problem is global, not just in the more developed and/or higher investment economies. Thus, we argue, a methodology is needed that can span the globe, be instituted by the marketing communication organization for any market in which they operate and does not rely on externally-developed measurement systems which may or may not be appropriate to the needs of the organization or the capabilities of external suppliers.

III. Changes in Technology Make Better Marketing Communication Measures Possible

Starting the late 1960s, particularly in the United States, manufacturers began to place UPC (Universal Product Codes) indicia on every product or SKU (stock keeping unit). This allowed both retailers and manufactures track the sale of specific products using the rapidly

developing point-of-sales (POS) technologies (24).

In the middle 1970s, research organizations such as IRI (Information Resources, Inc.) and A. C. Nielsen began to develop research test sites where the specific products purchased at retail could be connected to individual customers through the use of various controlled measurement systems. Thus, the technologies were developed that allowed specific customer-related purchasing information to be captured, stored, maintained and manipulated by research organizations and retailers. Using techniques such as optical scanners in supermarkets or computer programs that were tied to individual customer identification numbers, these approaches were used to capture, store and relate information on what the individual customer purchased over time (25, 26). It was then only a short step to connect consumer purchase behaviors to their exposure to various forms of marketing and marketing communication activities.

This ability to connect buyer behaviors directly to various marketing and communication activities began to change the view of how advertising and marketing communication worked and how these activities could or should be identified, managed and measured. First, using controlled store experiments, marketers and marketing research organizations began to relate the exposure of various marketing and communication activities to actual consumer purchases. For example, by controlling the communication environment through cable television systems, split-run newspapers and magazine geographic delivery approaches, and particularly, using in-store activities and events, marketing organizations began to once again began to be able to connect actual in-market results to marketing communication activities and investments (27). Thus the industry began to see a return to the "circus promoter's" ability to connect marketing communication expenditures to actual in-market sales returns.

Of particular interest was the increasing knowledge of what were called "advertising response functions" or the curves representing consumer response to various marketing communication exposures. Where the typical belief was that a sigmoid (S-curve) or "learning curve" existed, as early as the middle 1970s, researchers began to demonstrate that most marketing communication effects were based on a convex or continuously decreasing response curve (28, 29). These findings flew in the face of traditional marketing communication measurement models and thus were slow to be accepted in the industry. In fact, to this day, most media planning tools are based on the assumption of a sigmoid curve of advertising response (30, 31).

At the same time these new technologies were developing, the declining cost of computational power and the ability to capture, store, manage and analyze huge amounts of data, developed primarily through the use of behavioral information approaches borrowed from the direct marketing field, began to occur. These allowed marketing organizations to not only build huge customer databases but to be able to capture, store and analyze the behavior of customer's responses to various marketing and communication activities over time (32).

Thus, in the late 1980s and early 1990s, the focus on marketing and communication measurement began to move from attitudinal to behavioral measures of response or marketplace impact as a result of various forms of marketing communication.

To be honest, though, while the capability to measure customer marketplace behavior was possible, for many marketing organizations, it was simply not practical. The multi-stage distribution models used by many consumer product organizations prevented the marketer from being able to relate the response of specific consumers or end-users to their marketing communication efforts. Again, the famous "intervening variables" raised their ugly heads. Thus, what was expected to become a flood of change in the measurement of marketing communication effects resulted in only a trickle.

There was some success. Telecommunication companies, credit card marketers, airlines and car rental organizations, retailers and financial organizations were the primary kinds of firms able to develop this type of direct connection between the marketing communication efforts and the resulting changes in customer or consumer behaviors. Many of these methodologies and systems came in the form of "frequent purchaser" or "customer loyalty" approaches. Marketers, without direct relations with their end consumers or users were forced to continue using the more traditional attitudinal change approaches to marketing communication measurement.

Like the development of the attitudinal models and measures in earlier years, external organizations sprang up to attempt to capture,

store, manage and deliver the results of marketing communication effects the same way attitudinally-based measurement firms had developed 50 years earlier. While many organizations have entered or attempted to enter the marcom behavioral measurement arena, only a few have been successful to this point (33). We argue that the development of these types of firms going forward is not only unnecessary but may well be counter-productive to the actual needs and requirements of marketing communications firms in the 21st century.

The reason for this view is that the marketing communication organization of today has sufficient data and resources to be able to develop internal measurement systems to determine the impact and effect of their marketing communication programs. And, this is true as we have demonstrated with a number of global clients of our consulting organizations. Indeed, the marketing communication systems we propose work just as well in India as they have in Ireland. It is the process the firm employs that creates the successful measurement of results, not the external suppliers to which it has access. While many marketing communication managers don't yet realize that they have this capability, a limited few do. And those who have recognized the need and their own capabilities are starting to develop the necessary systems and methodologies that will radically change their measurement of marketing communication systems going forward.

In the next section, we describe and detail how a marketing organization can measure and evaluate the impact and effect of their marketing communication programs using an internal system. In our experience, most organizations have all the resources necessary to manage the task. The only things lacking are: (a) an understanding of the process, (b) some measurement tools and (c), the will to get started. In the following sections, we offer all but the latter.

IV. Using Internal Data to Measure and Evaluate Marketing Communication Activities

While psychological models designed to illustrate the impact and effect of marketing communication are still clearly the norm, they are being widely challenged by the need for behavioral data and financial measures. Organizations have always judged themselves, and been judged by their investors and owners, using financial measures, i.e., Return on Equity (ROE), Return on Assets (ROA), Return on Investment (ROI) and Earnings Per Share (EPS) are just some of the ways the firm measures its ongoing success. And, the same is true of how its management is judged by external groups such as investors and financial institutions.

Internally, organizations are increasingly moving to quantitative and financial measures to identify and determine their success. As firms have adopted such "scorekeeping tools" as Six Sigma (34) and the Balanced Scorecard (35), there has been increasing pressure on marketing communication managers to provide the same type of quantitative financial measures on the impact and effect of their efforts to match those already in place for operations, logistics, manufacturing, procurement and the like.

Unfortunately, since marketing communication management committed to the use of communication measures some years ago, i.e., attitudinal change and message delivery being the most prevalent, most marcom managers have been hard put to offer any relevant quantitative results from their investments and even less explanation or proof of the financial impact of their efforts. The primary problem, of course, is that the marketing and communication industry has been singularly unsuccessful in proving the relationship between attitudinal change and resulting consumer behaviors. The traditional measure, the Hierarchy of Effects has been tried and found not just wanting, but, perhaps, only an intuitive hypothesis (36).

Similarly, the "tonnage models" of media exposure which are supposed to result in increased purchasing or use of the advertised product or service have likewise been difficult to demonstrate. Unfortunately, external research or measurement suppliers have been of little help since their measures and approaches follow the same path of a psychological communication model and the assumptions, not proof, of behavioral response to message frequency. Unfortunately neither of these well-accepted concepts have been sufficiently demonstrated or verified to make them practical or possible as a management tool (37).

Over the past few years, more sophisticated marketing communication managers have begun to understand and develop internal measures of marketing communication success. Most of these have been based on the use of

sales and marketing data the organization commonly holds internally. Thus, in these firms, marketing communication measurement has become more and more focused on quantitative measures of impact and financial measures of effects and returns (38, 39, 40). Thus, it has become clear that the understanding of consumer and customer behavioral data is the future of marketing communication measurement, not just more or better or improved attitudinal data approaches.

Behavioral measures reflect what customers did or are doing in the marketplace. Thus, they can be statistically related and correlated to actual purchases or re-purchases in the marketplace. And, given that the measurement system we propose is based on sales by the organization and marketplace take-away by consumers, a simple but elegant internal measurement system can be developed and managed by the marketing communication manager. These estimates and calculations measures can be easily turned into the needed financial measures over time. Scenarios and relationships are now possible that permit the organization to say: "We invested $X in marketing communication activity A and we received a $Z increase in incremental sales as a result" (41).

As a result of these new approaches, it is now possible for marketing communication organizations, with a small amount of external assistance, to build self-managed marketing communication measurement tools using internal data, that is, data and information the marketing organization currently has in house. Using these tools, the firm can then develop financial models of investment and return on specific marketing communication investments. Indeed, that is what we have been helping an increasing number of marketing firms to do over the past few years with great success.

To move to this internal measurement approach to marketing communication measurement, a limited number of items are needed. Most, if not close at hand, can be obtained by the interested marketing communication manager with limited effort. The two key elements are historical sales records in dollars by product or brand to be measured and the marketing communication investment records by type of activity for the same period, again in dollars. By statically correlating sales and communication investments, it is possible to parse out the financial returns on marketing communication financial investments. Further, with a bit more analysis, the marcom manager can decompose the incremental results generated, and identify which type of activity or program generated what return. Thus, using internal data, an approach to internal measurement can be developed and conducted by any organization in any market in any culture in the world.

We should note here that the approach used and described below, is designed primarily to identify incremental returns on marketing communication investments. Other methodologies are more relevant to measure long-term or residual effects of marketing communication programs such as brand value or brand equity. We do not deal with these measures in this article but, they are in various stages of development by the authors (42).

The measurement procedure we describe below, often called "marketing mix modeling", is commonly offered today by a limited number of external vendors. For the most part, all use some type of "black box" system. That is, the marketing communication manager typically provides sales data by product or service by month or preferably by week, over a relatively long period of time. Commonly 24 to 36 weeks of data is best for the analysis of consumer products or fast moving consumer goods (fmcg). This length of data stream enables the consulting company to identify seasonal variations, competitive activities, new product introductions and the like. Note here, the data used in this analysis is internal data commonly held as sales records by the organization or firm. The external vendor simply takes that data and massages and manipulates it and returns the results of that analysis to the marcom manager. These services are based on the common "annuity" model of consulting, where the research or consulting organization charges the marketing firm for each analysis or the firm agrees to pay an on-going fee for the services provided. While this is a most profitable approach for the marketing research organization, it is an on-going expense for the organization. And, since the solutions provided are "proprietary", the marketing communication manager typically has little or no choice in how the data is analyzed or whether or not the "measurement model" is relevant to his or her market or the marketing communication activities being measured.

In our view, there is no reason why the marketing organization and the marketing communication manager, with a limited amount of investment, cannot develop the necessary

tools and techniques to perform this analysis him-or-herself. Indeed, that is what several marketing organizations are doing today, i.e., authorizing the development of transparent analytical models that the marketing communication group can then manage, adapt, tweak and dynamically adjust to fit their own needs, not the needs of the outside research firm. (We should note here that we have developed and implemented models of this type in markets all over the world, that is, in emerging markets as well as the more developed areas in North America and Europe). The process we describe below works equally well everywhere since it uses internal data that is readily available and is related to behavioral activities, not attitudinal changes, which are often difficult to measure in varying cultures.

V. The Measurement Process

The process consists of four distinct steps. It is important to note the approach proposed is referred to as a process, not a model. While the approach does rely on models of external results, it is based on a series of models used in a particular way although developed for the individual organization. Thus, our approach moves away from the standardized "model" on which marketing communication research has commonly been based. Instead, it is based, designed and developed specifically for the individual marketing communication organization, its communication tools, its markets, its distribution system and the needs of its management.

The big advantage in this approach is that consulting or service models tend to be static while processes are fluid. Thus, we believe the marketing communication manager should start to think about how to create processes that can be used and adapted, rather than static models that specify relationships that may change over time. (Note: Each of the steps briefly described below, must be continuously revisited and updated to provide the information necessary to accurately judge the results of the firm's marketing communication efforts).

We outline the marketing communication process we have developed as a series of steps as described below.

A. Step One: Assembling the Data.

The necessary data typically has been prepared and stored for purposes other than managing the marcom process or measuring marcom effects. It often exists in different formats, for different time periods and in varying levels of detail. Sales data is usually in the best condition for analysis since it has dependable price, quantity and date information connected, but, it often comes with arbitrary product and customer identification codes. These identification codes require dictionaries that allow conversion of the data to meaningful market and marketing information. Preparation of these dictionaries can be onerous, and in our opinion, is the most difficult task in the process.

History, that is the length of time sales data is available, can also be an issue. Such things as new accounting systems, product introductions or new packaging, all contribute to the analytical problem. Historical availability of reasonable machine-sensible sales data is normally the limiting factor in the sophistication of the analytical work ahead. We have found that two or three years of data are available in most organizations. A few organizations may have five or six years worth of data, but, almost none we have worked with ever has had much more.

Marcom expenditure data presents another analytical challenge. Marcom expenses are often defined in terms of budgetary categories and may or may not reflect the actual activity itself. For example, trade show expense may be shown as "advertising" because there is available budget in that "accounting bucket". Expense categories also tend to depend on the personalities and styles of the managers involved and sometimes change from budget period to budget period. It is also common to find expense payments are not carefully related to their relevant time periods. The use of an internal measurement process here should dramatically impact and improve the marcom budget and payment systems. As a side benefit, this work generally illustrates the need for better activity description, more detail, better consistency, and generally more discipline on how marcom expenses are recharged.

These are just a few of the benefits of developing an internal measurement system. It is here that the application of an Integrated Marketing Communication philosophy should be most apparent and most beneficial to the organization.

Time association is another problem. The time shown in the marcom expenditure data may reflect when an item was paid, rather than when the activity occurred. A change in accounting practice, moving from a 30 day payment schedule to a 90 day payment schedule, for example, could have profound

impact on how the value of a marketing communication program might be determined. Knowing what the date shown in the sales records means is also key: for example, is it a shipment date or an order date or a payment date? More important than what the date's definition is, is whether or not the definition has changed during the course of the captured data stream.

The unit of time is also an issue. Generally our experience shows that weeks are best, but data is commonly only available in months, or worse quarters. As time periods become more aggregate, changes tend to "average" away, making it more difficult to show marcom effects. It is typically the marcom expenditure data that dictates the need for longer time periods of analysis, for example, the use of months rather than weeks.

This first step of assembling the data is the most time consuming and difficult of the four steps. Understanding and interacting with the data is critical to the success of this process. Clearly the necessary intimate connection with the data can only be accomplished within the organization as most firms simply could not or would not allow external organizations to access such seemingly competitive-sensitive information.

B. Step Two: Preparing the Data.

Once the data is assembled it must be prepared for analysis. Statistical packages generally require data to be assembled into a single matrix of variables by time periods. Thus, all the data from all the various sources must be assembled into a single file.

If the data is at the customer level, then the market segments need to be created. The process for doing this is beyond the scope of this present discussion. There is, however, no doubt, an opportunity to apply various statistical clustering techniques as one of the most appropriate ways to move forward that likely exists. In some cases, market segments may have been created or defined earlier or elsewhere. Thus, the file may require only simple tagging to make it usable.

Sales data almost always contains some outliers or unusual one-time sales events. A scout troop leader buys supplies for a weekend camping trip, or a product recall occurs or an impending hurricane dramatically influences sales. These unusual events are arguably not influenced by marcom activity and probably should be removed from the data file. This may mean sales to a particular customer, or of a particular item, or of a particular date or time period may need to be deleted from the analysis. There needs to be a strong argument that the data to be removed is a true outlier and not simply a relatively infrequent purchasing occurrence.

Sales data almost always have seasonal characteristics. Most products just sell more at some times of the year, and less at others. Identifying the seasonal pattern is a requirement so that it can be controlled or removed. Understanding the seasonal pattern typically requires multiple years of data. The problem of not understanding the seasonal pattern is in potentially misunderstanding the impact of the marcom activities. Often we have found that a sales increase that looks to be associated with a marcom expenditure is really just a seasonal increase, or that a true increase is hidden by a normal seasonal sales decline. Either can have a major impact on understanding the true effects of marketing communication programs.

Making the variables consistent is obvious, but should not be forgotten. Making sure that all the sales units, prices and expenditures are consistent is critical. Dates can also present a problem. Defining weeks, months, or other time periods require more thought than might appear at first glance. If the data contain geographic definitions, such as markets, the definitions need to be made consistent. If media are involved, this is not a trivial decision. If there are other categorical variables, they need to be dummy coded so that they can be statistically analyzed. Variables that are highly inter-related or correlated need to be aggregated or combined.

Another issue is estimating base sales, that is, sales that would occur if no marcom activity had been undertaken. The presumption is that sales resulting from marcom activity would be defined as incremental sales. Of course, base sales plus incremental sales equal total sales. The problem is to identify the division of the two through a process known as baselining. Baselining, commonplace in analyzing store-level consumer package goods data, requires averaging non-marcom weeks using statistical smoothing methods. Incremental sales are also assumed to be short term. The estimation of the baseline can be more problematic if the data is aggregated beyond the store-level. Long term sales impacts require considerably more history than is usually available, but the approach is generally the same.

C. Step Three: Selection of the Statistical Model.

Now that the analytical data file has been prepared, it is time to choose the statistical models. It is here that most marketing communication managers run for cover and are happy to give the analytical task to external suppliers. The problem, of course, is that this step is not independent of the data assembly and preparation steps. It is where the term "black box" applies and where the marcom manager is most likely to be misled in the process.

It is our belief that the marcom manager must bite the bullet and embrace the necessary statistical tools to succeed in the coming months and years ahead. Certainly the most common model for this purpose is regression. Sales are the criterion or dependent variable, marcom expenditures and price are the predictor or independent variables. The more history the manager has, the better the model that emerges from the process. Shorter histories with fewer datapoints clearly run the risk of over specification. It is also possible to have a short history, but have the market divided into "cells" that have different levels of marcom activity applied. In this case, a different (but related) statistical model such as analysis of variance should be applied.

A regression model involves a number of issues and decisions. First is the form of the model: for example, should it be a logarithmic model or can it just be a simple linear model? If the sales levels vary widely, then a logarithmic model is probably better. Log models also work better when price is one of the predictor variables. Collinearity problems, that is, predictor variables that are highly correlated, presumably have been handled in Step Two, so, we do not discuss them further here.

Autocorrelation is another common problem that can be easily handled using autoregressive procedures (ARIMA) found in most statistical packages. Another problem is identifying the appropriate lead-lag relations between the predictor and criterion sales variables, that is advertising spending this week impact sales two weeks from now and so on. Finding these relationships involves a simple trial and error process. Carryover effects, that is advertising this week impacts sales next week and the following week, may also be present. These are typically difficult to identify with aggregate data. Interactions among predictor variables, that is advertising and promotion working together creating a synergistic effect may also be in play. What is clear is that the analyst must know something about marketing and how marketing communication should or does work, not just how the models and the statistical programs perform. In our view, this is one of the strongest reasons to move the marketing communication measurement activity inside the organization. .

Another possibility, especially for those uncomfortable with traditional linear statistical models, is the supervised artificial neural network. A good back propagation model, found in most data mining packages, can quickly sort out the relationships among the predictor variables and the criterion sales variable.

It is important to understand that there is no one model that can be used to measure the impact and value of all marketing communication programs. There are multiple models that require different assumptions about the nature of the patterns and relationships among the variables such as sales, media investments, promotional allowances and the like. It is clear from our experience that many models should be run and compared. The models should be only partially judged on their ability to explain the criterion variable or sales. They should also be judged on how well they fit the development of the marketing communication strategy. This, we believe, makes the case stronger for making measurement an internal process. External measurement organizations generally operate on the basis of a single "model" applied to all organizations and all measurement needs. In a dynamic, global marketplace, this approach appears to be fraught with problems that can only be solved by developing the models and processes needed inside the organization by marketing and communication people, not by statistical gurus and methodology geeks.

D. Step Four: Applying the Analysis to the Marcom Problem.

Whatever problem the marcom manager is facing, this internal analytical process should provide guidance. The best models can be used to answer the fanciful "what if" questions so popular today or to evaluate hypothetical scenarios. The model, however, should not be used independently of the manager's intuition and instinct. It should be used as a supplementary tool. If advertising is not showing much sales response, it might be that the message is not on target and a different

creative approach should be tried. Again this kind of analysis and decision-making is best done internally. For example, most external agencies or research groups would always argue for the creative approach, rather than a reduction in spending. Yet, those are the hard decisions that the marcom manager faces today.

The model needs to be applied and then updated. Even when the model doesn't successfully predict sales or adequately explain past results, there is learning. At each use, the model should continually improve and become a more useful tool. But the model will never be perfect, nor will it never need long-term revisions. The market and marketing communication are simply too dynamic for that to occur. Thus, static models that focus on single "point-in-time" results are interesting, but, generally less than relevant to the marketing communication manager charged with "generating financial returns from financial investments in marketing communication".

The real value to the marcom manager of the approach outlined is using the model as a tool and learning from its continuing and ongoing revision process. The value of internal marketing communication measurement, in our view, is in the journey, not just reaching the destination

In summary, it is our strong belief that the dynamic, global marketplace of the 21st century requires a re-thinking of how the impact and effects of marketing communication can be measured and evaluated. Historically, marketing communication managers have relied on external suppliers to provide the processes and results of measurement needs. We argue that today, the nature of the marketplace and the needs of the organization have changed so that useful and relevant measurement systems and processes must be developed and implemented internally. The need for different forms of analysis has made this measurement process increasingly dependent on internal data and a more focused marketing analytical approach than most external research and consulting organizations can provide. Indeed, the marketing communication manager of the 21st century marketplace must become the master of his or her own fate. And, that, to us, means the development of the measurement skills and abilities within the organization, not the ability to source external supplies and resources for the task.

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