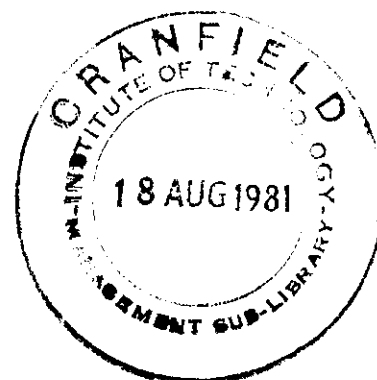


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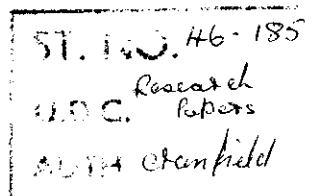
A REVIEW OF LITERATURE ON THE MEASUREMENT
OF ADVERTISING EFFECTIVENESS

Part ii: The Post-Display Analysis of
Promotional Effectiveness



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THE PURPOSE OF THE LITERATURE REVIEW

The publication of a literature review is necessary if an attempt is to be made to understand the state of the art as others see it. The review compiled by the Cranfield MCRU uses published material to illustrate the type of work which is known to have taken place.

The MCRU has collected over a thousand references in its literature search - an activity which is an ongoing one in order to keep up to date with what is happening in the area of advertising and advertising research. Because of the volume of material involved each reference has been allocated a sequential index number, and this number will always be indicated when any reference is given. In the text references will be given in the form of the authors name, the year of publication, and the index number.

e.g. Frost (1970) 21,...

In this form any reference should be easily traced in the appendix giving the full bibliography.

It should be noted that in undertaking the literature search particular attention was given to post 1960 publications. This rather arbitrary cut off point was adopted because it was felt that pre-1960 work which had a special contribution to make would already have passed into books of readings, and the like, and so would be widely available to those interested in the subject.

The initial review of the MCRU - Report Number 2 - covers two main areas of concern:-

Part i "The Pre-Display Assessment of Advertising"

Part ii "Post Display Analysis of Promotional Effectiveness".

The report will cover what are considered to be the main issues in evaluating methods of measuring advertising effectiveness, for this was the guise under which the project was originally set up.

At a later date it is intended that a further review should be published on the material concerned with the processes of how advertising works. This obviously has a strong overlap with any discussion on evaluation of effectiveness, but the area is large enough to warrant its own paper. It should be noted that as other areas become evident as being of particular interest to the sponsor companies, an attempt will be made to review any relevant information which is available.

PART ii THE POST-DISPLAY ANALYSIS OF PROMOTIONAL EFFECTIVENESS.

This part of the literature review is concerned to consider the various aspects of post-evaluation techniques, and to put forward references which serve as illustrations of the main points. The report will provide information on two particular approaches to the work:-

- i) the various methodologies proposed
- ii) the various beliefs or conclusions which have been drawn from examples.

More specifically, the papers considered for review in this section are those using as a measure of effectiveness the change in company performance in the market place, e.g. sales or brand shares. The more subjective measures of response to promotional effort, such as change in consumer predisposition towards a particular product, will be covered in the subsequent paper on advertising processes.

The review which follows is selective in that only those articles which are felt to make a positive contribution are mentioned. These are publications which highlight the various points of view put forward, but the authors would welcome suggestions on major omissions which are felt to exist.

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POST DISPLAY ANALYSIS OF PROMOTIONAL EFFECTIVENESSINTRODUCTION

In this paper an attempt is made to review the "current state of the art" as culled from published material to date. Attention will be drawn to key issues and such conclusions as seem pertinent will be drawn.

The emphasis of this paper is on the determination of media advertising effects on market performance, usually measured by changes in sales levels or brand shares: this is because in the literature there is a predominance of papers dealing with work and evidence of this nature. Little published material was found dealing with non-media promotion effects and similarly little progress seems to have been reported on the effects of promotional (either media or non-media) efforts on the disposition of the Consumer, e.g. changing attitudes or beliefs. It is also felt that this latter subject matter is more properly considered in the context of the review of behavioural studies, or what we have termed 'advertising processes'. Very few articles have been found examining the relationships between pre-testing performance attributes, measures of 'disposition', and sales performance. These will be discussed in a later paper.

1. Reviews published in the last decade

Many recently published books concerned with advertising effectiveness measurement are assemblies of earlier papers which are felt to make a special contribution to the subject area. The better of these include informed comment on the significance of the articles and/or the limitations of the method used as well as structuring the sequence of papers to complement each other. One such book is 'Measuring Advertising Effectiveness', edited by J.J. Wheatley (1969) 599. It consists of 21, prominent papers, plus comment, on the overall problem of measuring effectiveness. The papers were mostly written post-1964. The emphasis is on presenting evidence to help understand the advertising process. It is not mathematical and covers behavioural measures as well as those of sales and brand share. All the papers are related to the American market; many references are given at the end of each paper, to work in similar areas.

Another good summary of useful papers, plus criticism, is 'The Intelligent Man's Guide to Sales Measures of Advertising' by Martin Mayer (1965) 26. This booklet first describes, for the practitioner, the major techniques by which the sales effects of advertising expenditures have been sought, and this is followed by a very comprehensive, annotated bibliography of all published applications of these techniques. Again the majority of the articles are related to the American market.

An interesting anthology of published material, either by a British author or reporting on British marketing is 'Mathematical Models in British Marketing'. (1971) 1012.

This is an annotated bibliography and includes among others, a section on Consumer Behaviour and one on Advertising. Of the 61 papers in the latter section, 39 specifically deal with media planning, using 'opportunities to see' as the effectiveness criterion. The section on Consumer Behaviour is dominated by the works of A.S.C. Ehrenberg, concentrating mainly on quantifiable descriptions of behaviour as measured through consumer panels.

Finally, two textbooks relevant to this sections' topic: 'The Management of Advertising', Simon (1971) 1007, and 'Management Science in Marketing' by Montgomery and Urban (1969) 1008. Both these books review concepts and ideas on how organisations can approach, or have approached, the problems of measuring the effects of advertising efforts on company performance. Both are essentially mathematical, do not deal with problems of allocating effort among different promotional vehicles, and limit their coverage largely to comment on others' work.

Interesting findings covered in the reviews and books quoted here are given under the relevant topic headings following. The overall impression gained from these reviews is that some of the effect of advertising on company performance can be measured, be it sales, profitability or whatever, but that the circumstances of the company and/or its market are very important determinants of this.

2. Discussions of objectives and fundamental principles

The need to set meaningful objectives for promotional activities, before measurement exercises of any sort can commence, has been widely stressed. Britt (1969) 173, in a study of 135 advertising campaigns which were claimed to be successful, found that whereas 87 had set necessary objectives, only 2 had set sufficient ones to enable sound assessment of the campaign to take place after it had run. The point emphasised by such studies is that if an attempt is to be made at evaluating the effectiveness of a promotional activity, thought must be given beforehand as to how general objectives will translate into operational factors, and, to what are the most appropriate and feasible means of measuring these. For example, if it is believed that a promotional activity can increase share of market then it is necessary to consider from where this increase is expected to come, when considering methods of assessment (e.g. increased distribution, increased rate of purchase by current buyers). There are, of course, two approaches to measuring the achievement of an objective: one which is concerned only with assessing success or failure, and one which also gives reasons for success or failure. It is almost superfluous to state that the second procedure is usually only possible if good promotional, and measurement, objectives have been set in advance.

Precision of Measurement

The importance of precision of measurement is a theme discussed by several authors. It is closely related to clear objective setting. The points which emerge from such considerations e.g. Davis (1972) 684, are that in order to determine, in any field, whether a 'cause' has had an 'effect', it is necessary to have two things:

- a) a means of measuring changes of the magnitude produced with sufficient accuracy to enable real changes to be distinguished from errors of measurement, and
- b) a norm against which to compare the measurements.

The importance of point b) is not always considered and, as is dealt with in the next section, it is particularly relevant to one-off experiments where the trend in the norm desired is not always made available.

The nature of promotional effort

The next pertinent consideration is the nature of the promotional effort. As has been succinctly pointed out by Mayer (1965) 26, and Eldridge (1967) 663, promotional activity, and particularly advertising, is not a homogeneous entity, as is usually assumed in econometric - type evaluations. In the case of media advertising there are at least three components: message content (creative elements), the method of presentation (media pattern) and the extent of display (money element). Any of these could be changed, strictly reflecting a change in advertising. Only one study (Buzzell (1964) 19)

has been found where the creative content of the advertising has been taken into consideration in a post-display sales analysis of a campaign's effectiveness. This study is commented upon later.

Performance Measures

The need to express promotional effectiveness in either sales, profit or organisational performance terms is argued by many writers. Their reasoning, for example see Sasieni, (1964) 986, is that profit/performance orientated organisations would accept consumer disposition measures (awareness, attitudes, preferences etc.) as performance measures only if:

- a) they would settle for improved consumer disposition, even if their overall marketing effort were unprofitable:
- b) they understand how consumer disposition affects marketing performance i.e. they can predict, with reasonable accuracy, what will happen to marketing performance (sales, profits etc.)

Since the former is unlikely, and the relationships implicit in the latter have not been determined, it is argued that there is no case for using consumer disposition measures. The question posed by this argument is:

- i) should those things which are more easily measured be measured, and their relationship with profits be assumed;
- ii) should the relationship with profits be explored;
- iii) or should an attempt be made to measure sales (profit) response directly?

A counter argument, perhaps epitomised by Lavidge and Steiner (1961) 689, would be that returns from advertising are long term and that to have any ultimate sales effect on a consumer, the consumer's disposition must be changed first anyway. The evidence for and against these points of view will be elaborated in a later paper.

In view of this debate of how advertising works, a more practical marketing approach that has been suggested, e.g. Cooke (1966) 992, is that advertising, or promotion, is part of an overall marketing plan and it is the success of this plan which brings profit or increased performance to the company, hence only this overall result need to be measured. Whereas this may be true it is not likely to help diagnostically in marketing management.

The importance of definitions

Finally, a note on the meaning of advertising or promotional, effectiveness. In many respects one of the obstacles to the development of adequate measures of this effect could be the confusion caused by the alternative meanings given to the terms 'measurement' and 'effectiveness'. This was apparent from the inappropriateness of many article titles. In an elegant essay on the definition of advertising effectiveness, Halbert (1966) 993, notes the two criteria for adequate definition: the pragmatic one of 'meaningfulness' and the semantic one of 'operationality'. An example of this concept could be that although the definition of temperature has to do with energy of molecules it is, nonetheless, usually measured by the height of mercury, or alcohol, in a glass tube. Hence to understand temperature effects one must know about molecules' properties and behaviour but to

compare temperatures and measure them, thermometers are usually adequate. The parallel in advertising effectiveness studies is that one must choose the appropriate measure for one's purpose, or objective.

3. Experimentation

Experiments are activities designed to test explanations of observed events. Experimentation differs from alternative methods of marketing research in that in experimentation the researcher manipulates the independent variable, or variables, before measuring the effect upon the dependent variable. For example, the effect of promotional changes on sales volume of a product can be examined by actually varying the extent of promotional support. A nonexperimental approach would attempt to try and deduce the effect from results which have occurred through changes in effort due to the normal marketing plans, which would not necessarily vary over a range of values in a controlled way.

The MCRU have found 20 examples of experiments aimed at measuring the effect of advertising on sales volumes, and while few succeeded perfectly, most obtained results their users could act on with a degree of confidence.

Practical problems and procedures

A very good handbook on experimentation in marketing is by Banks (1965) 1014, while a monograph by Cox and Enis (1969) 1015, contains the basic methodology and sufficient references to enable the sound planning of experiments to be done to cover most situations. The objections to experiments and the difficulties experienced are summarised well, by Uhl (1966) 1017, and Segnit and Broadbent (1970) 148. Both papers offer practical advice for dealing with many of the difficulties. Similarly a good, practical

exposition of the whole general approach is given in Davis (1970) 1016. Most of the published evidence of successful completion of experiments comes from the U.S.A. Just two were found relating to British markets. The limited number of geographically separable areas in Britain basically gives rise to additional difficulties.

As well as the practical difficulties of area choice, data collection, competitive hindrance and managerial control there are some conceptual problems which are not always appreciated:

- a) experimentation often takes place against 'static' behaviour by the competition; the problem then arises that if one company changes its advertising, as the result of an experimental result and expects a certain outcome, what will be the actual outcome if the competition also changes to a new level of advertising?
- b) "the use of experiments to marketing management is only any good if they allow prediction" Cooke (1966) 992;
- c) if answers are required quickly, an experiment is not practical because of its lengthy set-up time;
- d) the time period needed to detect change can be impractically long. There is much evidence that, in certain market situations, there are considerable "carry-over" effects of advertising e.g. Tull (1965) 325, and Davis (1972) 684, who cites the example of advertising being withdrawn for 15 months before sales

showed any decline. The importance of this factor is that if effort were transferred from media advertising to some other promotional method, the apparent effects of the latter would be inflated by the residual effect of the advertising, if the experiment were concluded too quickly.

- e) and following from d), the effect on a test area of previous promotional effort.

A procedure for avoiding these problems is hinted at by several authors e.g. Mercer (1967) 955, Elton and Rosenhead (1971) 999: an experiment should provide information to form the more fundamental exercise of understanding the dynamic effect of advertising. Hence before an experiment is undertaken a thorough exercise should be done on existing information to derive how one believes advertising affects sales, i.e. build a model, derive an equation. A well designed and managed experiment can then substantiate, or modify, these earlier findings. This in turn will allow problems a) - e) to be dealt with much more satisfactorily. A laudable experimental design to complement this prior model building philosophy, has been described, Bugden (1972) 1018, for work in the U.K. In order to increase statistical validity the experiment was spread over 11 T.V. areas and 8 products. This latter feature is unique and adds greatly to the power of the results. Obviously this is a major undertaking and has extended over 4 years

but it is claimed to have provided a comprehensive understanding of marketing mechanisms and prompted marketing action.

A practical point worth bearing in mind, if a model is not available to provide an estimate of the likely outcome of changing promotional efforts, and thereby defining how precise sales measurements need to be, is that pertinent complementary information should be collected. It may be that little change may be seen in overall sales performance but information on, for example, new buyers and existing buyers might show compensating increases and decreases in each category, which could have long term important consequences.

Areas of success

An important feature of the published studies of apparently fairly successful experiments, is that most concern products which one might expect would respond well to changes in advertising or promotion. 14 out of the 20 were either new products, commodities (apples, milk, lamb etc.) or durables, and 5 out of the remaining 6 were unspecified. The implication could be drawn that either (a) unsuccessful experiments are not published and might be found in the area of fast-moving, branded consumer goods, and/or (b) it is, practically, very difficult to run experiments in branded, competitive markets.

An example of the extent of information that can be gleaned from a well designed and run experiment, the objectives of a particular one, Henderson et. al. (1961) 812, can be summarised as:

extraneous factor, initial market share, to be taken into account in assessing the result. Careful matching of test areas had not automatically removed this factor.

An example of an insufficient experimental design, although involving much effort, is that related by Stewart (1964) 826. Newspaper readers in 4, roughly equal, areas of a town could receive 20, 8, 4 or 0 exposures to advertisements for two products. Nearly 6000 housewives were interviewed as part of the experiment. However, one could argue that the distribution of a special newspaper does not guarantee it is read and the use of the same advertisement for up to 20 exposures is questionable.

It should also be noted that simple experiments on one area, or the whole country, where before and after effects are examined, are fraught with difficulties of interpretation particularly if they are not based on a good method of forecasting, taking into account salient marketing mix factors, i.e. a thorough examination of past data on a detailed level.

4. Statistical Analysis

4.1. Aggregate data

As defined by common practice this category of method of examining advertising effectiveness usually means simple or multiple regression on variables expressing some value of aggregate sales promotional effort over time. The popularity of this approach is partly influenced by the nature of data readily available. It is, however, useful to remember the business finance adage that data collected for one purpose is not necessarily the best to use for another! This overall approach is well known to be bedevilled by the problems of, ascribing true cause and effect, as well as, statistical validity. One key to check the validity of these sorts of exercises is to be found in understanding the derivation of the data used, and an appreciation of the marketing circumstances when the data was collected. Rarely are background details given in reported cases of the use of this method, e.g. in a case where advertising appears to have no effect one would like to know such facts as brand preference and brand performance comparisons, and distribution information.

Both Simon (1971) 1007, and Montgomery and Urban (1969) 1008, summarise well the better known and more statistically valid exercises, based on aggregate data, deriving mainly from American sources. Classic examples are those of Palda (1964) 677, and Tull (1965) 325. These are among many examples found that included some allowance for long term effects of advertising and subsequently improved the statistical fit of the data. Many of these reported

exercises have in common the fact that they relate to rather individual products in individual markets, i.e. not multi-brand, fiercely competitive market situations.

A paper by Weiss (1968) 802, indicates how with sufficient manipulation a seemingly plausible relationship can be derived from what was, initially, an implausible result. An initial regression exercise on sales, price, advertising and brand share data for "a low cost consumer food product" is shown to result in "increases in price having a positive effect on sales." Various modifications are made to "correct" this initial result by introducing 'dummy variables', but the meaning and interpretation of these is obscure.

A sound review of the methodology of the subject matter of this section is given in 'Estimating the effectiveness of advertising: some pitfalls in econometric methods', Quandt (1964) 375.

Inclusion of creative factors

Special mention should be made here of the three papers found which related some measure of creative advertising content to market performance, by means of regression analysis. They all discuss the same data outlined in Buzzell (1964) 19, and concern products in highly competitive markets, e.g. margarine, soap, stomach remedies. The approach adopted in the competitive market situation was to examine market share against advertising share and 'scores' for advertisements gained in pre-display evaluation sessions (Schwerin). The analysis showed that "if anything, advertising message quality is more important than the level of advertising

expenditures". Unfortunately, one must have reservations about the statistical validity of such an exercise in markets where the 'set' advertising/sales ratios are very closely followed. In addition one would find it difficult to put a meaning on the pre-test scores and subsequently be able to use the results of the analysis predictively. No account of any predictive test has been given.

Also it should be commented that those exercises reporting close relationships between sales, brand shares, and advertising do not appear to need to include a creative factor, suggesting either

- a) most advertising is equally as good as any other
- or
- b) creative content is not important

U.K. Examples

Of historical, and methodological, interest are the works of Benjamin and Maitland (1958) 10, (1960) 1043. Although markets have changed much since this work their contribution is valuable in that their approach was laudably scientific: by drawing analogies with other observable processes, and by deduction, models were derived of how advertising might affect response. These models were then tested by regression, but with the knowledge that there was reason to look for cause and effect, in the forms suggested by the models. A much quoted (US) paper of this era is that by Vidale and Wolfe (1957) 680, which used data from large scale experiments to postulate how advertising affects sales rates; it implies that there is an exponential rise in sales up to a 'saturation' point as advertising is increased.

The exercises reported by Samuels (1970) 55, again suggests that the simply applied, regression analysis approach is not very satisfactory for very competitive markets. This exercise took 6, often cited, simple models of how brand shares and advertising effort are related and tried to fit them to some extensive panel data. The data was, in fact, a 4-weekly household audit covering 1000 households for 2 years. The results of this exercise were all negative, thus emphasising that models of situations have to be evolved from an understanding of the processes at work and that simple, generalisable models, on aggregate data, are not likely to exist.

A very explicit example of the effect of promotion on brand share is given by Kitchener and Rowland (1971) 979, for the razor blade market. Since the paper details the managerial involvement, the model based decisions and subsequent results, its conviction and authority are enhanced. The methodology given epitomises the evolution - learning process which many authors advocate in such exercises. Again it should be noted that this market is a relatively 'simple' one being dominated, as it is, by only two competing companies.

Emshoff and Mercer (1970) 1000, describe similar sets of models for a competitive situation which illustrate, among other things, that established product and new product situations, influence differently the response to advertising.

An interesting paper, for its theoretical content rather than results, is by Webb (1972) 996. The writer discusses the problem of the fact that response to advertising may not be linear, i.e. it may be easier for a certain promotional effort to gain market share from a base of 5% than from one of 95%. He proposes an advertising/brand share relationship based on the mechanical analogue of overcoming a 'resistance' by a 'force'. Two functions representing this analogue were examined, one where a quadratic function was used with its minimum at the 50% market share point, and the other where "resistance" was inversely proportional to the number of percentage points from 0% or 100%. On the limited data available it appeared the former representation gave better results and so supports the notion of the S-shaped response curve. Again the market is a 2 product, semi-commodity one.

Two reports have been produced by the Television Consumer Audit (AGB) examining the effect of above and below-the-line promotion on the market shares of advertised brands, as a group, versus own label products, as a group. The data used is that of 1000 homes' continuous audit over 2 years. The first of these reports which covered three competitive product markets is reviewed by Jones (1970) 553. The second report, the work for which was done by the Box and Jenkins method (1971)1013, and which covered three more competitive markets, was more complicated technically. Essentially it examined the relationships between

- a) media advertising and deals to consumers and trade,
and,

- b) market response in terms of penetration, amounts bought and share (advertised brands versus own-label) of market.

The results which indicate that branded goods lose market share when media advertising declines, must be qualified by the lack of complementary information on the behaviour of other marketing influences and the imperfectness of the 'deal' data. One can also, unfortunately, criticise this particular exercise on two counts: one - the products chosen are not very typical, e.g. washing-up liquids are dominated by a very well marketed product which is therefore favourably situated to respond to media advertising; two - technical imperfections in the application of the method of analysis, i.e. certain unfounded assumptions appear to have been made in truncating the expression representing the advertising effect, causing doubt as to what the true effect really is. It must also be stressed that the findings do not necessarily translate to an individual brand in any of the markets examined. It may be coincidence, but it is interesting to note, however, that the method basically chosen for the above exercise, was to examine the markets as only consisting of two competing product groups.

Simultaneous-equation regression

This refinement of the basic regression technique has been heralded by some writers as the route to a more successful examination of advertising effects in multi-brand, competitive markets. An early application in marketing is given by Bass and Parsons (1968) 605, with reference to three other papers. Basically, the procedure allows for the dynamic effects of advertising on both a brand and the market: advertising and sales per brand interact with each other, from time period to time period,

and also with the sales and advertising of all other brands. In the example quoted, distribution was not included as a factor, and neither were price and other promotional efforts, although data on the latter two was said to be available. Criticism of this approach is that it is still subject to the underlying cause and effect dilemma, advertising and sales are both dependent variables, and that the system developed may be modelling the market behaviour of the companies owning the brands in the market. Nevertheless, the basic method does allow a more realistic approach to be taken to analysing dynamic markets where advertising by a brand is thought to effect the whole market. Very few examples of this method have yet been published except in Samuels (1970) 55, and, although it was claimed to give better results than the other procedures tried, the evidence for this claim was scant.

It must be remembered, particularly when brand share models are being examined by regression methods, that the underlying use of regression analysis, of course, yields only over-all relationships; in any market some brands are declining in share, others rising, while yet others remain static, and the regression procedure gives overall summary coefficients.

4.2. Disaggregate Data

By disaggregate data analysis we mean the examination and interpretation of records of individual's purchases. Although involving extensive data analysis this method has the great virtue of allowing the variation in individual's response to be measured, rather than measuring the variation between groups of consumers. Statistically this adds another dimension, as it were, to the analytic tools. The data available in a study, reported in considerable detail by McDonald (1969) 175, was from diaries kept by 255 housewives of their purchases in 50 product fields, on a day to day basis, over 13 weeks. The housewives also kept a record of the media they saw. From press and TV exposure data, information was obtained on what advertising each housewife had the opportunity of seeing each day. The main purpose of this exploratory exercise (only a few of the product fields had been examined), was to examine the short term effects of advertising, by observation of individual purchase behaviour. By 'short term effect' the author is seeking to find a type of stimulus-response relationship between the amount of advertising that may have been seen between purchase occasions and the brands subsequently bought. The study has been slightly updated and published (1971) 660, as a booklet. The analysis was fairly comprehensive but did not consider different trends in patterns of buying behaviour. The tentative results, therefore, could be said to be descriptive rather than explanatory. As the author admits, without a controlled experiment to either validate the provisional findings or verify hypotheses, some reservation

must be observed. The results, so far, suggest that there is a short term effect but that it is very small indeed.

On the details of analysis given it would seem that one opportunity for examination has still to be tried, among several possibilities. Since the advertising content for some products may have been directed at certain types of people it would have been interesting to examine the performance of the relevant segments, if these were known. If target segments were not known, or were not intended, segment performance could still be examined for the sales effect, and the statistical significance tested by analysis-of-variance, a facility which the data analysis by individual consumer, conveniently provides.

A good article describing the value, particularly for experiments, of examining the behaviour of purchase panels is by Parfitt and McGloughlin (1968) 792. Many examples are given.

Kuehn (1962) 1020, gives an interesting example of the use of consumer panel data which indicated that brand shares could be predicted from the sequence, and patterns of frequency of consumers' past purchases. An example is quoted of the use of the relationship developed, to evaluate the sales effect of a special promotion over a short period of time.

A similarly interesting analysis of 2 years' data of weekly panel diaries is given by Rao, T.R. (1969) 998. He examines the effect on choice of brand purchased of:

- a) store visited, and
- b) size of purchase,

showing both of these to be important variables.

Other papers peripheral to this section topic are given in Section.10 Effects of Frequency.

5. Econometric model building and testing

Econometric models are a standard 'language' in Economics for formally writing down families of equations representing underlying economic processes with inbuilt variability. In the marketing research context the principle and method are used to attempt to express the relationship between the demand for a product, or service, in terms of such economic environment determinants as price indices, promotional expenditure, wages, disposable income, etc. Consequently the effectiveness of any promotional effort is a by-product of the success of such an exercise to describe the mechanism by which demand is determined.

In practical terms this sort of exercise is usually found to use very similar methods to those described in Section 3.1., Statistical Analysis - Aggregate Data, except that it should also include:

- a) the prior formulation of how advertising is expected, or thought, to effect market response, and
- b) the consideration of the effects of other factors thought to influence response.

All the cautions and reservations made in the section on the statistical analysis of aggregate data are relevant to econometric model building, where regression analysis is used. The scope for delusion is increased by expanding the number of factors put on the right hand side of the equation, e.g. if media advertising and deals come from the same basic budget, they can both be determined by some overall promotion/sales ratio; the

price might be raised partly in order to pay for increased advertising, so these could be interrelated regularly. As stated previously, Quandt's article is a useful guide to avoiding the more obvious pitfalls.

A useful reference paper for including considerations of distribution effects into an econometric model is that of Nuttall (1965) 683.

Few really good expositions of this, more comprehensive, approach have been found. Again the developments given in Kitchener and Rowland (1971) 979, are valuable.

Many exercises extend their objectives to examining the profitability of advertising or promotion. This is obviously more complete, but adds complexity, and necessarily forces more assumptions to be made about the company's overall operation. It would appear that the more fundamental quantity to measure is sales response, since profit calculations are dependent on this.

It is again remarked that many of the reported exercises of an econometric model nature are on single, or two brand, market situations.

6. Microsimulation model approaches

In some markets, notably the highly competitive, fast moving consumer goods ones, there are few published examples purporting to have isolated the effect of individual market mix elements. In this sort of market, a hypothesised relationship between two elements (say, the effect of promotion on purchase decision) is difficult to isolate. It would seem that this is due to the many interacting influences, or, to factors which cannot be explained. In this situation, marketing researchers have begun to consider the concept of formulating descriptive models of all the influences on a consumer's behaviour in the market place, and are now attempting to derive the influence of any one factor from this. Hence rather than describing and analysing the market as the macro, or aggregate, approach does, this approach builds models based on beliefs and data related to individual behaviour in the market place.

The case for microsimulation is succinctly expressed by Amstutz (1967) 1021:

"The advantages of microanalytic simulation are largely a function of its behavioural content. By encompassing knowledge and assumptions regarding behaviour within the market, it provides a means of relating management actions to purchase behaviour. While an aggregate model may generate correct answers at a point of time, it provides little or no insight into the reasons for these answers. The microanalytic simulation has the potential to

provide the right answers for the right reasons. It is this consideration above all others that recommends it for use in the present situation".

Simulation is a method of making deductions from a model of a system. Instead of using mathematical manipulation to draw general conclusions about the behaviour of the system, simulation uses the model as a working analogy of the real system. This working analogy can be used to produce repeated realisations of the behaviour, through time, of the system as modelled. Thus one does not arrive at explicit equations expressing the behaviour of the systems under examination, rather one achieves a number of potential histories of the system, from which the effects of possible modifications to the system can be predicted. A microsimulation model would represent an individual's purchase decision in terms of a host of influencing factors (advertising, word of mouth, prices, display, shopping habits etc., etc.). To obtain aggregate results from such a model (e.g. the effect of advertising on the population, and therefore the market, as a whole) it is necessary to repeat the simulation for a sample of decision makers, representative of the whole population.

Simulation, then is an alternative to mathematical analysis and is particularly useful where the system to be analysed is too complex, and where simplifying assumptions are not felt to be justified. Hence microsimulation is particularly appropriate, it would seem, for representing a system in which there are many similar decision-makers, each making repeated decisions of the same type: sufficient data should then be found to validate the behavioural hypotheses within the

model. Fast moving, consumer goods markets are typical of such a system.

An excellent, comprehensive survey of the methodology and of the experience to date with this type of approach is given in Elton and Rosenhead (1971) 999. Also included is a bibliography of key works on this subject.

Very few examples have been published of operational, complete market simulations, for a multi brand competitive market. A 'trail blazing' study reported by Clayclump and Amstutz (1968) 1022, in fact considers the ethical pharmaceuticals market. The simulation models, among other things, the interaction of:

- a) patients, with individual histories of treatments and complaints,
- b) and, of doctors, with memories of drugs' past effectivenesses, and attitudes partly determined by controllable marketing variables (e.g. advertising, direct mail, representatives)

Impressive claims are made for the results of this study and, in fact a separate company was set up to run the model, for the drug company concerned, to aid marketing decision making. Unfortunately the paper, reporting this work, does not give sufficient substantive information and one must take much on trust. Similarly, Amstutz' book (1967) 1021, although being a mine of ideas, does not differentiate between what is theory and what has been verified in practice. In fact, Montgomery (1972) 1023, has cast doubts on the accuracy of the claims for the Clayclump and Amstutz pharmaceutical model, and demonstrated - Montgomery (1972) 883, that

the evaluation of the individual effect of the individual elements in the promotional mix, for a pharmaceutical market (manufacturer - doctor), can be deduced in a much more straightforward manner. This, in fact should be the case, since this market is very akin to a direct response one, in the sense that the prescribing of new drugs is very much the result of promotional efforts and prescriptions can be subsequently analysed, for market research purposes, to monitor doctors' response.

An example of an application in the U.K. is that reported by Lavington (1970) 886. As an academic exercise the study achieved much but, as the author states, insufficient data was initially available to verify all aspects of the model, including those describing the way in which the various promotional facets of the market (e.g. media advertising, point-of-sale, word of mouth) affect demand. The market studied was a fast moving consumer goods one and the tentative findings suggested that the advertising effect was a long term one.

An important aspect of this whole approach, is the cost, in executive development time and in data procurement. Cumulated experiences from all those studies, in various fields, which have been reported, state it would appear unreasonable to expect the development of a comprehensive, predictive model in under 6 man-years. The information required for such an exercise is very comprehensive, involving such things as the analysis of consumer panel data for individual behaviour, advertising exposure data per individual and detailed product distribution data. Elton and Rosenhead rightly emphasise the point that micro-simulations should not be seen as an alternative to

planned experiments, but that the latter are probably necessary to provide inputs to the former.

The 'behavioural models' of Rothman-Tate (1964) 40, Hendrikson-'St. James' (1967) 911, and more recently Marchant (1970) 714, are micro simulations of a sort. They are not comprehensive marketing models since they do not include considerations of factors such as price, distribution and display. However, they could form useful modules for testing in a comprehensive, overall micro model. The use of these 'behavioural models' in formulating the creative input to advertising, and the subsequent measurement of the achievement of intentions, will be more fully explored in a subsequent paper.

In conclusion, it can be appreciated that although the micro simulation approach is conceptually very powerful in its promise of solving the marketing mix evaluation problem, it is a mammoth task to put into operation. In practice analytic problems of estimating parameters from past data still arise and, without controlled experiments, some parameters will be associated with wide margins of error. There are close parallels in this whole approach with that discussed in the analysis of disaggregate data (Section 4). Both, it would seem, would benefit from the examination of results by segments of the population. This is especially true for the examination of the effects of advertising, the creative content of which may have been aimed at particular segments. More evidence is needed to demonstrate that this whole line of approach is feasible and that it produces actionable results.

7. Brand switching

Some early attempts to relate advertising efforts to subsequent performance in the market postulated that a brand's share of advertising was causal of the brand's share of the market. Typical of this approach was the "dynamic difference" model. It was assumed that some consumers would be influenced by relative advertising weight to change from one brand to another. Also, at this time - the early 1960s - it seems that the use of Markov chain models and analyses was being advocated as a means of monitoring consumers' behaviour in respect to such market pressures as advertising.

Ehrenberg has demonstrated that the actual processes of brand switching do not conform to the assumptions upon which these early approaches are based. Also the 'dynamic difference' models were developed usually by analysing aggregate past data via multiple regression methods and the limitations of this approach have been summarised in Section 4.

In an exhaustive review of Markov Brand Switching Models, Ehrenberg (1965) 1539, found that there had been no successful applications to marketing or advertising situations, and that in many circumstances the assumptions necessary to apply this approach were not met.

Ehrenberg has developed 'models', or formulae, which describe consumer purchasing patterns under stationary conditions, i.e. no fundamental changes taking place in the market. This approach is probably

best described in Ehrenberg (1969) 1538. It is shown that basically all that is required to describe and predict purchase patterns for a brand in a period, are two quantities:-

the proportion of the population buying a brand/period;
the average number of times these buyers of the brand buy it in the period.

The underlying principle of this model is the NBD distribution, a derivative of the simple Poisson distribution. The NBD description is claimed to hold for an impressive number of different brands, both in the U.K. and U.S.A. Its main value would seem to be in allowing the establishment of norms for a brand, i.e. how many people should be expected to buy how many in a given period. From the knowledge of what should be expected if there is no change in market forces, it should be possible to measure the results of making a positive change to one of the market mix elements, such as advertising. In the listing of examples on which the NBD analysis approach has been used only one out of 36 is specifically related to monitoring advertising effects (the seasonal effect of advertising). It would seem that this approach, requiring as it does stationary conditions, would only be suitable in examining short term effects of advertising. A good example of the use of this method for evaluating a promotional activity (merchandising) is given in Goodhart and Ehrenberg (1967) 13.

It would seem, therefore, that although the NBD analysis, is probably not normally suitable for evaluating advertising effectiveness, it is nevertheless a very good means of forming a basis for understanding the mechanisms of the market. The more one understands the market and has norms to judge by, the easier it should be to examine the action of individual components.

Work examining relationships between consumer behaviour and attitudes, or dispositions towards brands, is covered in the MCRU report (No. 4) on Advertising Processes.

8. Optimisation of Advertising Effects

Papers written which examine the problem of optimising promotional spending normally contain the underlying principle that investment in this activity should take place up to the point where it is no longer profitable. When it is assumed that promotional effort in one period can affect demand in both the current and future periods, the problem becomes one of discounting the long term effect back to the point in time of the decision. All papers found which tackle this particular problem assume that the relationship between promotional effort and demand is known, or can be postulated. In spite of this major assumption the conclusions of these theoretical analyses are interesting.

Simon (1965) 735, describes the classical Economics theory above, in marketing terms. However, the methodology and formula he adduces assumes that advertising expenditure decisions are made period by period, or month by month, which is not often practical. The same sort of idea is explored more thoroughly by Little (1966) 308, who describes the management system necessary to examine the idea in practice.

A still more thorough approach is that adopted by Nerlove and Arrow (1962) 980, who examine the effect of an advertising decision made in one period, on each of a number of succeeding periods and cumulate the effects from one period to the next. They postulate that the response, as measured by sales or whatever, is related to the level of 'goodwill' which is accumulated by advertising. 'Good-

will' is assumed to 'depreciate' with time unless replenished. The principle has an appealing simplicity and is the basis of some commercially applied, though not published, methodologies.

Nerlove and Arrow show that for conditions where only those activities which are controllable by a company can affect demand, a point is reached where it is not worth (i.e. does not improve profit) increasing promotional effort. All their analyses include the effect of price on demand.

Their analysis of a special situation yields a further interesting conclusion. In the case where:

- marginal production costs are constant i.e. no economies of scale.
- demand is not a straight line relationship with price or promotion, i.e. diminishing returns always exist.
- only price and promotion affect changes
- the effects of competition are uncontrollable.

then,

the optimal advertising policy is a constant percentage of sales.

Hence those adopting the above policy are, in fact, subscribing to the stated assumptions.

Forrester (1959) 864, makes the practical observation that in some industrial circumstances promotional effort may borrow sales from future periods, and the effect of promotion must be evaluated not only against the value of extra sales but against the extra cost of achieving

these on other parts of the company than the marketing function.

Rao (1970) 563, describes a theory of 'pulsing' advertising, based on some experimental work. Basically he describes how an optimal policy for advertising expenditure, in some situations, would be to only advertise when sales dipped below some base level. His theory is similar to Nerlove and Arrows' 'goodwill' topping-up, and also assumes the precise relationship between sales and advertising is known.

Sasieni (1971) 882, in an interesting theoretical paper examines the underlying premises of theories expounded by Rao, and others:

"I reasoned that over the years marketing men must have discovered some optimal advertising strategies by empirical methods. Since many people believe that there are circumstances in which a cyclic, or pulsing, strategy can be optimal it should be possible to discover a class of response functions, whose parameters can be specialised to yield a cyclic policy".

He concludes that a cyclic, or pulsing, policy is not the mathematical optimum but is the nearest practical achievement of this. A necessary condition for a pulsing policy to be appropriate is that the marginal cost of obtaining a given rate of change of sales will decrease during a particular time interval, the saving, to achieve a maximisation of promotional funds, is obtained by operating in this time period.

Since marginal costs eventually increase (overall there are diminishing returns for promotional effort) it means that those markets where pulsing may be appropriate are those where gross profit margin and market size are low. A simple example of these conditions would be a small market where there is a 'threshold' expenditure level below which advertising, or promotion, have no effect. Whether 'thresholds' exist is left as an open question.

9. The examination of 'wear out' effects

Various organisations, who commercially subject advertisements to pre-display testing and derive quantitative measures for performance, have published data which show that the same advertisement retested after a period of time of regular display, performs less well on their measures than it did originally (Schwerin,ASL, Clucas etc.)

Few examples are reported of measures actually taken in the market place. Appel (1971) 61, and Ionides (1970) 60, do give details of exercises carried out to try to examine the effect, over time, of advertisements which have been shown at a fairly continuous rate. In all cases the measure of 'response' to the advertisement was 'recall' or 'awareness'. Ionides summarises the general findings of these sort of studies which show that initially 'response' rises and then declines slowly.

It would seem that this topic is relatively un-researched and little is really known.

The distinction between advertisements 'wearing-out' and audiences 'forgetting' is not clearly drawn in attempts to understand advertising effects. None of the evidence for advertising effects described in papers dealt with earlier, takes into account 'wearout', but many produce meaningful results, in spite of this possible omission.

This subject will again be referred to in the review of 'advertising processes', when the processes of learning and forgetting will be considered.

10. Examination of frequency effects

Frequency effects can be examined from two stand-points: the effects of the frequency of whole campaigns, and the effects of frequency of display within a campaign. The distinction is artificial from a theoretical point of view, but, in practice, operational factors tend to decide the frequency of campaigns.

The evidence relating to the frequency effects for whole campaigns, or the management of a campaign, has been dealt with in the section on pulsing, or cyclic, advertising in Section 2.6. The whole subject of frequency is closely allied to that of optimising advertising, or promotional, efforts.

Few reported examinations of the effect of the frequency of advertising use actual purchase data as the measure of response. As detailed in Section 4.2. the recent work of McDonald (1969) 175, attempts to do this but was last reported to be still in progress. Most of the other studies in this area use awareness, recall or claimed purchase as the response measure.

An interesting exercise is reported by Geiger (1971) 181, for an examination of relating TV advertising frequency to the responses of a 7 day diary panel of 980 housewives, for 2 product categories. Six additional measures were established from the panel members: brand name awareness, advertising awareness, advertising communication, brand usage, brand preference and purchase intent. Advertising effectiveness was regarded

basically as penetration and purchase intent. One result was that only 3 out of 7 brands showed increasing purchase intent with increase in frequency. The rest of the paper cogently examines the competitive advertising exposure situation and its likely effects on heavy viewers - pointing out that those receiving high frequency of advertising to one brand are also highly exposed to other brands' advertising. In consequence the gain through increased frequency for one brand, will not be as great as one might expect.

As has been reported by many authors, awareness tends to increase with expenditure, or frequency of advertising, particularly for new products. In reporting a particular case, Adams (1970) 144, describes examples where awareness increased, apparently, at different rates for two advertisements for the same product, but with different creative contents.

An early experiment to examine the effects of frequency on recall was that, rather briefly reported, by Zielske (1959) 682. He posted one to thirteen advertisements, at weekly or monthly intervals, to housewives, a sample of whom were subsequently questioned to determine recall of the advertisement after each delivery. No housewife was interviewed twice and various other sources of bias were eliminated. Although the method of conveying the advertisement was unorthodox, the virtue of the experiment was to measure the total effect of each advertisement over time, by summing the 'strength' of the impact over time (in awareness), until the

impression had disappeared.

No raw data is presented in the paper and the principle of not re-interviewing anyone, to reduce raised interest bias, introduces variability into the results in that different people respond by different amounts to the same stimulus. It is obvious that the results have been 'smoothed', and some points on the graph will be based on small samples. One of many tentative conclusions from this exercise was that if the objective of advertising is to obtain a maximum average weekly number of consumers remembering advertising over a year, then it is better to spread the thirteen advertisements equally throughout the year, rather than have a concentrated burst.

In a paper reported by Ray, Sawyer and Strong (1971) 58, details of a form of repeat-Zielske experiment are given, as well as a general summary of findings on frequency effects. The experiment reported, also gathered information on brand preference and mention, as well as advertising recall. One of the findings showed that with weekly advertising, as advertising awareness increased, brand preference decreased. This was so after the initial sharp increase in brand preference.

Many studies have been reported examining the problem of estimating the likely form of response for increased frequency of advertising, for media planning purposes, e.g. Broadbent (1967) 1024. Similarly many studies have been reported which examine the 'advertising effectiveness' of different media patterns, e.g. Geiger and Ernst (1971) 1025, but these usually use 'awareness'

as the effectiveness measure and this begs the question of what this actually achieves in eventual product purchase terms. Such measures of 'disposition' will be investigated in a later paper. (Report No.4).

11. Advertising effects on distribution

Few papers have been found which consider the effect of advertising on distribution levels for products.

A good survey of the scant literature related to this subject is given in Haines and Silk (1967) 984. The authors then derive a theoretical model of how advertising might influence distribution, and tested it on data for 31 new product launches in different markets. Although their data was not very substantial, their findings were that advertising did not appear to influence distribution in any simple way, i.e. there was certainly no direct relationship.

A good early paper examining the relationship between sales and distribution is that of Nuttall (1965) 683.

An interesting paper by Montgomery (1972) 1045, examines, by an ingenious method, the importance of manufacturing company reputation, and product in-store promotion, on the acceptance of new products by buyers for distribution in their grocery supermarkets. Both factors are shown to be important, with 'reputation' coming first.

12. Examination of non-media promotion effects

There is not very much published on the measurement of non-media promotional efforts on sales, or any other measure of response. Where sales changes are the most relevant measure, the dearth of published successful exercises is probably a reflection of the difficulty of manipulating sales measures to provide conclusive evidence, and the general lack of information in the right form.

Essentially the same problems of measurement are encountered when examining non-media promotional efforts, as with media promotion. These difficulties, and surveys of the general problem, are recounted in two recent papers: Sampson and Hooper (1969) 728, and Barnes, McDonald and Tuck (1969) 727.

A paper which gave the actual results of an examination of the interrelated effects of media and non-media promotion is that by Pridmore and Snell (1963) 1009. An experiment was run where the effect of a sales-incentive bonus to dealers was examined, together with special media advertising. It was concluded that the advertising in itself had no detectable effect on sales, but it did boost the effectiveness of the bonus offer. This analysis examined only the incremental effects of more, or less, advertising, rather than the absolute effect of advertising.

One of the more exhaustive studies of the effects of non-media promotion, was that by the Television Consumer Audit - Box and Jenkins (1971) 1008. This was commented upon earlier, among the U.K. examples in Section 4., and generally the results could be said to be debateable because of the methodology.

Another interesting example, Tuck (1972) 1046, aimed mainly at examining whether non-media promotions affect attitudes in a way that is measurable. The tentative conclusion is that effects on attitudes can be measured and that they can be positive or negative. This thoughtful article poses more questions than it answers, but is a good summary of precise areas requiring further research e.g.

- what are the long term effects on attitudes?
- what is the nature of the attitude effect?
- do these attitude effects relate to longer term purchasing behaviour?

Darby (1971) 1010 cites examples which he claims demonstrate the adverse effect of a reduction in media expenditure in favour of non media promotion, for products which have little other branded competition. A useful and interesting set of papers, largely exploring the problems of evaluating the effects of non media promotion, are given at the ESOMAR Seminar on 'Below the Line Activities' (1971) 1558. Some of the papers include examples of methods of evaluation specific to certain circumstances. Two of the papers merit wide reading. The first, by Lowe-Watson (1971) 22 examines methods of establishing the purposes and planning of non media promotions, based on understanding the market through research and approaches to estimating the profitability of such promotions. The second, by Parfitt, described the use of consumer panel data to assess the sales effectiveness of promotions in terms of penetration and repeat purchasing. The latter

paper quotes interesting examples suggesting, among other things, that the earlier, in the life of a brand, people enter the market the higher their repeat purchasing and that promotions which have a limited short term effect on a brand's volume of sales often have a more positive long term effect.

13. Studies of Effectiveness in Industrial Markets

Few articles have been found which demonstrate the measurement of advertising effectiveness in an industrial market.

Several studies have been reported on what might be termed semi-industrial markets. One of these, McNiven (1963) 820, describes an experiment which was devised by Du Pont to explore the effects of advertising 'Teflon' on selling coated cookware, not sold by Du Pont. As mentioned previously, in Section 3, this exercise appeared to show advertising 'borrowed' sales from a future period; it also demonstrated how it is possible for one manufacturer to affect his own sales by advertising his customer's product.

The article by Montgomery (1972) 883, referred to in Section 6, describes the statistical analysis of data relating to new drugs promotion and the rate of subsequent prescribing of these. Again this is a semi-industrial area where promotion (advertising, direct mail, salesmens visits) is the main information medium.

Until greater knowledge is gained of the industrial buying process, and information collected on the relevant aspects, the measurement of advertising, or promotional effectiveness, in industrial markets will remain difficult, except in the more straightforward circumstances like those described above.

14 . Direct response/direct mail studies

Few, very specific papers have been published recounting the actual outcome of exercises in this area and the predictive accuracy of the findings. Since this is the one area that allows very precise measurement, the lack of published findings is very significant. Commentators conclude that commercial secrecy prevents the publication, for wider scrutiny, of details of such exercises that are done.

Simon (1971) 1007, gives brief details of those reported, specific exercises in the U.S.A. since 1912. Shryer (1912) apparently examined the returns to thousands of keyed advertisements and produced tables of the way response declined. He also found that smaller advertisements produced more returns per dollar spent on advertising, than larger advertisements. Other, later, studies appear to confirm the form of these early findings and Rudolph (1936) showed that half page advertisements pulled 70 percent as many replies as full pages.

In the U.K., an early published study of recruitment advertising response measurement is by Maitland and Pennycuick (1964) 384. The methodology is very practical and could be expanded to include many other factors, including the quality of response, which is the usual difficulty when analyses in this area are proposed.

Taylor (1970) 1005, has reported extensive work in this area for an organisation using direct response type of advertising very heavily. The methodology and models expounded are sound and would allow detailed media planning and an approach to optimisation. The methodology generally involves analysing previous campaigns in such a way so as to plan new ones most efficiently.

15. Mixed media effectiveness

Little conclusive evidence has been published on the measurement of individual components' effects for cases of mixed media use. It is obvious that if it is difficult to measure the effectiveness of promotion in one medium, the use of more than one medium compounds the difficulty.

Claycamp and Amztutz (1968) 1022, state that the motivation for their building a \$1m. simulation model for a drug company was to examine the effectiveness of the promotional mix.

16. Existence of thresholds

Many of the results of statistical analysis of past data between sales and promotional efforts imply that thresholds, below which promotional effort has no effect, do exist. However, no careful examination of the subject appears to have been undertaken.

17. The effects of colour

The effect of colour on response to T.V. promotion is succinctly and graphically reviewed in a BBTA booklet by Twyman (1969) 1011. Little evidence would seem to have been reported on the sales response effect of colour advertisements, although several studies measured other responses, of the 'disposition' type.

18. Conclusions

Definite evidence has been found, in the literature, of the measurement of advertising, or promotional, effort on company performance. Most of this evidence derives from the results of extensive experiments, or statistical analysis of very comprehensive data.

Most of the reported work does not include an account of subsequent management action or of the full marketing environment (prices, sales forces, product quality etc.) against which the exercise was carried out. All findings must be qualified somewhat, by these omissions.

The majority of the examples cited are for work done in the U.S.A., and are characterised by being concerned with one of the following situations:

- a) one product/brand in a small market
- b) one product category in a large market
- c) new products
- d) in fewer cases, one product/brand in a two product/brand situation

Examples of exercises examining promotional effectiveness in multi-brand, competitive markets are mostly unsatisfactory. The conclusion that can be drawn is that advertising and promotion work in a different way in the less competitive, unsaturated markets than in the very competitive ones, and this should be reflected in the methods of measurement and analysis.

Theoretical examinations of how advertising effort should be optimised generally conclude that some form of 'pulsing' should be adopted. One such exercise, not validated by data, concludes that in special circumstances the best promotional expenditure strategy is a fixed percentage of sales.

Exercises which aim to explain more of the reasons why a particular promotional effectiveness occurs - typified by simultaneous equation regression, micro-simulation models and individual behaviour examination of panel data, are still not copiously reported in the literature. They are likely to be very expensive exercises and have application to particular circumstances. They should have the advantage, however, of allowing eventual extrapolation and accommodation of changes in market environment.

Little evidence was found of conclusive exercises on the effects of: frequency; the effect on distribution of promotional efforts; mixed media effects and the existence of thresholds for expenditure. Two interesting examinations of the effects of non-media promotion were reported: one via statistical analysis, the other via experimentation.

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