Original Article

Measuring synergistic media channel performance in an online environment

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ABSTRACT Current approaches to measuring the contribution of individual media channels to integrated marketing campaigns within an online environment are typically based on a 'last-in wins' methodology. Under this methodology, the final media channel that precipitated a response is considered the sole or chief contributor to that response. Although this approach has historically been used to avoid double- and triple-counting responses, it relegates the contribution of those media channels that are not attributed with the response but which assisted in the final, elicited response. The current study seeks to extend the findings of Naik and Raman and Schultz *et al* by proposing an alternative technique for attributing the true contributions of individual media strands to the synergistic effect observed within integrated marketing campaigns. This technique is applied in an online environment using a number of UK insurance company case studies. It reveals significant differences in the established, prevalent media measurement technique with that of the proposed technique. The results have implications for media planning and offer a more sophisticated model-based approach that quantitatively incorporates media synergy.

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BACKGROUND

The proliferation of media channels in the digital era has increased consumers' exposure to a multiplicity of overlapping voices. The ability of the consumer to absorb information from a plethora of different media channels has been referred to as polychromic information processing.¹ Consumers are frequently engaged in a range of simultaneous media usage, such as listening to the radio while reading the newspaper. In one study, for example, 37.5 per cent of consumers reported that they watched television while simultaneously going on line.² Consumers are thus becoming

exposed to a broader spectrum of superimposing media channels.

The advent of digital technology has also expanded the range and scope of marketers to integrate media channels in a structured way, which can be beneficial by virtue of the synergy that is created when individual media channels are strategically linked together. Essentially, each different media strand works in partnership, each reinforcing and adding value to the next, creating a 'halo' or 'hothouse' effect, whereby the sum of the total can exceed the sum of the individual parts.³ In this manner, the overall benefit realised from a synergistic media approach can exceed the sum of each individual medium employed, often cited as $1 + 1 + 1 + 1 = 5$.^{4,5}

Several studies have confirmed the incremental advantage that can be achieved by media synergy.

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For example, radio advertisements can reinforce imagery created by television commercials, resulting in a synergistic uplift across the two media.⁶ In a further example, research by the Royal Mail in conjunction with media group OMG showed a 62 per cent increase in return on investment (ROI) from digital campaigns when combined with direct mail.⁷

With the abundance of new digital media adding to the array of possibilities, such as social networking, there is a growing appreciation of the role of media synergy in its potential to create net uplifts in campaign performance.⁸

MEASURING THE TRUE CONTRIBUTION OF INDIVIDUAL MEDIA STRANDS

Although digital technology and an expanded range of media channels have provided marketers with greater planning and synergistic opportunities, it has also introduced greater complexity in evaluating the effectiveness of campaign performance. Specifically, how can the effectiveness and true contribution of each medium be extrapolated from the vast multiplicity of interacting media?

A number of previous studies have sought to address this problem. For example, earlier work by Naik and Raman⁵ investigated the role of synergy in multimedia communications, measuring its impact and implications for marketing campaigns. The researchers went on to develop a theoretical model, demonstrating the synergistic relationship between television and print advertisements and broader synergy across a range of media channels based on a retail sales case study.

More recent work by Schultz *et al*.¹¹ sought to measure purchase propensity, for example, motor cars and personal computers, according to media influence. The findings reinforced Naik and Raman's⁵ earlier work in the context of demonstrating a net uplift from media synergy and in evaluating purchase propensity according to media influence. The existence of media synergy and empirical measures of its effect are thus already established in prior studies.

The current study seeks to extend the findings of Naik and Raman⁵ and Schultz *et al*.¹¹ by proposing an alternative technique for isolating and attributing the true synergistic contributions of individual media strands within integrated marketing campaigns. This technique is applied in an online environment using a number of UK insurance company case studies. It compares differences in the established, prevalent media measurement technique with that of the proposed technique.

CURRENT SITUATION – 'LAST-IN WINS' METHODOLOGY

Most distribution-based media measures are based on single media form identification. That is, television viewing is measured separately from radio listening, which is measured separately from magazine readership and so forth. Newer forms of media, such as mobile and social networks, also tend to be measured separately and individually, with little regard for the simultaneous media consumption of the participating audiences.² Evidence of this is seen in the distinct media measurement approaches such as television ratings, radio audience sizes, newspaper and magazine circulations, and Website impressions, all measured as separate, non-overlapping entities.

Most advertisers use a 'last-in wins' methodology to measuring media channel performance, meaning that the last media channel used by a consumer before responding is considered the 'winner' and is credited with the response.⁹ Although this approach has historically been used to avoid double- and triple-counting responses, it is important to recognise the value of those media channels that did not get credit for the response but that assisted or prompted the final response. This attribution is largely absent from current approaches to measuring media effectiveness as discussed later in reference to the UK insurance industry.

In actuality, it would be more correct to assert that a multitude of reinforcing media precipitated the response, which was then actualised through one final, individual medium. The ability to discriminate between

the contributions of different media strands is critical in understanding their true value to integrated marketing campaigns.

Extant methods of measuring media source are thus typically single-medium focused, assuming that consumers are totally focused only on the one medium being measured to the exclusion of all others. This is demonstrably false, as it is proven that a combination of media channels can produce a greater overall benefit than the sum of its parts,^{2,5,10,11} which brings us to the question, under the 'halo' effect of $1 + 1 + 1 + 1 = 5$ where is the extra '1' allocated when evaluating media performance? A common approach is to average out or proportionately allocate the '1' across channels. However, this approach is based on broad assumptions and ignores important correlations that can exist between specific media channels,¹⁰ for example, television advertising and Website visits. Singular measures of media performance ignore such synergistic benefits and are therefore inaccurate on at least one level.

Despite these shortcomings, singular media measures remain in widespread use as illustrated in the case of UK insurance companies.

CASE STUDY – UK INSURANCE INDUSTRY

The combined media spend of UK insurance companies runs into tens of millions of pounds annually across a broad spectra such as television, newspapers, magazines, telephone directories, direct mail, banner adverts, e-mail, Google, Bing, Yahoo, Facebook, various blogs, review sites and a surfeit of smaller channels. Yet an analysis of the Websites of some leading names reveals that many do not capture media source information from Website visitors at all, including the following:

- Saga
- Churchill
- Direct Line
- Liverpool Victoria
- Endsleigh
- Swinton

This means that the media channel that elicited the Website response is not directly recorded, for

example, a newspaper advert leading to an online visit. Although re-attribution methods can be applied to allocate these online visits back to the original source media channel, the intuitive nature of this procedure and broad assumptions used renders it an imprecise science. Critically, such methods rely on marketer assumptions rather than consumer-defined feedback.

The remaining insurance companies, including Hastings Direct, Aviva, Morethan and esure employ singular media source measurements. Taking Hastings Direct as an example, visitors to the Website for an insurance quote are asked to select *one* option from a drop down box in response to the question 'Where did you hear about us?'

- Internet search engine
- Recommended
- Yell.com
- Advert on another Website
- E-mail
- Yellow Pages
- Existing customer
- Direct mail
- Directory

This approach ignores the combined contribution and synergy across different media in eliciting the response and simply represents a measure of the final channel through which the response was ultimately precipitated, that is, it is a 'last-in wins' methodology.

MEDIA MEASUREMENTS AND OPPORTUNITY TO RESPOND

The problem of establishing the true performance and contribution of a particular medium within an integrated campaign is compounded further by differences in the opportunity of consumers to physically respond. For example, radio advertising is known to be heavily consumed during travel where the listener has very limited opportunity to respond *in situ*.⁶ In contrast, e-mails are chiefly read by consumers through PCs, laptops and mobile devices where response is easily facilitated, typically through a clickable hyperlink.¹² In this case, radio advertising can build up awareness

thereby creating a 'halo' effect around other media precipitating a greater response in channels such as direct mail, e-mail and magazines. Critically, however, this synergistic benefit may not be attributed to radio in the recorded results, but instead to the media through which the final response was realised.

Similar occurrences are seen across other media – for example, newspaper advertising offering a discount for online visitors, an approach commonly used by insurance companies. Although the newspaper advert may stimulate the initial response, this response is often attributed to a search engine.⁹

Although methods have been developed that seek to circumvent this situation, such as comparing a given medium plus radio in one geographical area against the same medium minus radio in another geographical area, this again remains a broad approximation. This is because it is becoming progressively more difficult to isolate and measure individual media contributions in such a precise, dichotomous manner due to the inevitable intrusion of a growing number of other media channels into the equation. This is particularly true when such media are pervasive and extend across geographical boundaries, for example, television and the Internet. Ironically, the increased number of overlapping and reinforcing online media channel campaigns being employed by marketers has diminished their ability to isolate and measure the performance of individual media strands.

ALTERNATIVES TO EXISTING MEDIA MEASUREMENT TECHNIQUES

The problem with current approaches to measuring media channel performance has been echoed in the wider community. For example, Lee¹³ has argued that companies need to recognise that the impact of different marketing methods needs to be measured in relation to each other. Lee gave the example that, when examining a firm's display advertising, it may be apparent that it is underperforming in comparison with search marketing. However, this does not

mean that the business needs to invest more in search marketing, as the display adverts may be directly influencing the consumer to search for the firm.⁸

The central question thus arises of how existing methods of evaluating media channel performance can be adapted to incorporate synergistic effects and apportion these according to the true contribution of each individual media strand, without being too onerous on users within the online environment.

PROPOSED NEW APPROACH – CASE STUDY OF AVIVA

Aviva plc is the sixth-largest insurance company in the world measured by net premium income with 53 million customers across 28 countries. It is also the market leader in both general insurance and life and pensions in the United Kingdom.¹⁴ Aviva thus has a dominant position within the UK market, high level of consumer awareness and serves as a generalised example of how media channel performance is captured within an online environment.

When visiting the Aviva car insurance Website (www.aviva.co.uk/car/), respondents are presented with the following question during the quotation process. *Only one option is selectable.* The list of options is then presented in alphabetical order (Google/Bing/Yahoo appear to be grouped together under S for 'search engine').

Where did you hear about Aviva?

- Already a customer
- Do not know
- E-mail
- Friends or family
- Newspaper/magazine
- Phone directory
- Post
- Price comparison site
- Google/Bing/Yahoo
- TV
- Website advert

For the purposes of this study, the question was modified slightly to read 'Where have you heard about Aviva?' A sample of 100 UK Internet users

from a broad demography of different genders, age groups and occupations was then selected and then randomly split into two halves, comprising two groups of 50 respondents each. By randomly splitting the sample frame into two halves, bias was minimised. One half was then used as a control group and the other half as a test group. Modification of the question reflected the fact that respondents were not actually on the Aviva Website and hence a slightly different wording was required.

The control group was asked to answer the question 'Where have you heard about Aviva?' and then to *select only one option* from the list of media channels, consistent with the current approach employed by Aviva.

The test group was asked the same question as the control group. However, critically, this group of respondents was asked to *select all that apply*.

The objective of the study was then to establish whether significant differences existed between singular and multiple measures of media source information.

RESULTS

Under Aviva's current method of measuring media source information, whereby Website visitors are asked to select one option from a list of different media channels, television was vastly over-represented in the control group as shown in Table 1. The overwhelming majority of respondents indicated that they had heard of Aviva on television. Clearly, this did not signify that respondents had heard *only* of Aviva by television – it simply meant that television was most 'front of mind' when compared with other media channels.

In contrast, the findings from the test group, in which respondents were asked to select all channels through which they had heard of Aviva, showed a much wider distribution of responses across media channels. Although television remained the most prominent channel, it constituted just 25 per cent of all responses as opposed to 84 per cent of all responses in the control group. In essence, the pattern of response distributions was different as illustrated in Table 1.

The difference between the means based on paired observations was tested using the null hypothesis that there was no significant difference between the two measurement methods.

The computed value for this lower-tail test was -4.23 , which was lower than the critical value of $t = -1.81$ (degrees of freedom = 10 and 5 per cent level of significance). Therefore, the null hypothesis was rejected at the 5 per cent level of significance, concluding that the mean level of measurement under the multiple (test) approach was significantly different to that of the singular (control) approach.

In addition to the statistically different results emerging from the multiple (test) approach, the richness of information was increased with respect to overall number of responses at 197 compared with 50 in the control group, indicating a broad interplay of media channels in the consumer response process. This finding was consistent with previous research ^{2,10} in relation to consumers being exposed to a broader range of channels and their ability to absorb and process multiple media messages simultaneously. These differences are illustrated in Figures 1 and 2.

There are thus significant differences between singular and multiple measures of media source information, and the richness of information conveyed, which have implications for evaluating the contribution and performance of individual

Table 1: Comparison of differences between singular and multiple media source measurements

Channel	Responses (singular) Control group	Responses (multiple) Test group
Already a customer	5	5
Do not know	0	0
E-mail	0	5
Friends or family	0	15
Newspaper/magazine	0	30
Phone directory	2	16
Post	0	11
Price comparison site	1	14
Google/Bing/Yahoo	0	20
TV	42	50
Website advert	0	31
Total	50	197
Mean	4.6	17.9
Standard deviation	19.1	58.4

Figure 1: Distribution of media channel responses using singular measurement approach.

Figure 2: Distribution of media channel responses using multiple measurement approach.

media strands within integrated campaigns. Yet a review of extant methods within the UK insurance industry reveals that many companies either do not directly capture media source information from Website visitors, or employ singular media source measurements. That is, the last media channel used by a consumer before responding is considered the ‘winner’ and is credited with the response. At the current time, none of the companies employ multiple measures of media source information.

Critically, the multiple measurement approach both recognises and incorporates the contribution of each media strand within synergistic, integrated campaigns based on consumer feedback rather than marketer assumptions. This is a benefit absent from conventional approaches.

CONCLUSION

The postmodern media landscape is characterised by a vast and growing number of overlapping advertising channels. Within this landscape, consumers are enshrouded by a chorus of media messages from a multitude of sources through which they interact and process information. This situation has rendered marketers’ traditional approaches to measuring media channel performance based on recording the channel through which the final response was realised less relevant. It also echoes calls in the wider community for newer approaches that recognise and attribute the role of media synergy in building and precipitating responses. With the proliferation of overlapping media channels, the rationale of attempting to measure the separate performance of each media strand via the final ‘last-in wins’ response approach is thus debatable.

An analysis of the UK insurance industry, however, reveals an absence of media performance measures in the online environment that adequately capture the synergistic contribution of different channels. Insurers either do not capture the media source from online visitors or employ a ‘last-in wins’ methodology. This is despite the industry spending tens of millions on pounds on advertising each year across a broad and diverse range of media channels, where a majority of business is now transacted online, and where accurate calculations of ROI are critical to optimising future media planning and advertising decisions.

This study has sought to establish if an alternative method of measuring media performance can be deployed within an online environment, which more accurately attributes the synergistic contribution of different media strands to integrated marketing campaigns, without being too onerous on Website visitors.

In the absence of such a measure, companies are potentially ignoring the influence of cross-media exposure and resorting to more subjective methods of extrapolating media performance. As these methods are not consumer-defined and tend to rely on broad assumptions, they may not correlate with the multiple measurement approach proposed in the current study.

In comparing extant approaches to measuring media channel performance with that proposed in this study, there is evidence of a significant difference in the outcome of either approach. This is important on two grounds. First, it demonstrates that the manner in which media channel performance is measured can affect the results with implications for future media planning decisions. Second, it offers an alternative (or supplemental) approach to measuring media channel performance that recognises the contribution of each strand and which incorporates the effects of synergy.

The findings of this study suggest that a more refined approach to measuring media performance is possible, yielding different and possibly more accurate results, compared with current approaches. Testing the new approach on a larger sample size, comparing it with current 'last-in wins' approaches and extending it to other online environments would provide additional evidence for its usefulness.

The results of this study thus expand the range of possibilities for measuring media channel performance, while offering guidance for the next step in developing a more sophisticated model-based approach to media planning that quantitatively incorporates synergies between media channels.

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