

# Marketing Communication Strategy and Marketing ROI under Cross-Media Environment

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## Abstract

Marketing managers have to build their effective communication strategy under cross-media environment. Also, they have to achieve a same level performance even under the decrease in marketing budget. In this research, we re-consider the inherent task of marketing communication and propose the concept of organic communication mix and, along with this concept, the marketing ROI. Our experiment, where we model the conjoint analyses for the measurement of cognitive knowledge structuring, confirms the significance of the concept. Finally, we mention the future tasks toward the accomplishment of marketing ROI.

**Keywords:** marketing strategy, cross media, cognitive knowledge structuring, marketing ROI

## 1. Cross Media Environment

Internet has been influencing on the marketing strategy substantially since its introduction. There are several standpoints as to the beginning of the Internet. However, one of the historical events must be the ARPANET at UCLA in 1969 (*cf.* Hanson [9]). On the Labor Day in 1969, the first two nodes of the Internet went "online" at UCLA. Since then, following the introduction of the browsers such as MOSAIC in 1993 and Netscape in 1994, the growth of the Internet and the influ-

ence on the marketing has been substantial, needless to say. Companies exploit the EC systems as channels, the BBS and SNS as the ideas for new product development and improvement, the membership programs on the Internet as the CRM tools and segmentation-targeting bases, and so on.

Among these impacts of the Internet on the marketing strategy, the environment related to media is remarkable. TV industry is under the process of the digitalization that leads to the interactivity and the affluent contents. Newspaper industry is facing the fierce competition among the existing companies in the industry and the external entrants from the outside, especially the digital media and devices, such as digital paper and iPad. The market-size of magazine industry decreases in several countries, particularly the market-size of magazine ads, mainly because of the Internet. Few people may listen to radios via the tuning machine and many people via the Internet radio.

Regarding these traditional mass-media, the changes in them caused by the Internet are apparent. Further, there are some interesting and potential emerging media. Twitter is one of them. Twitter is a social networking and micro-blogging service, owned and operated by Twitter Inc., that enables its users to send and read other users' messages called tweets [1]. Tweets are text-based posts of up to 140 characters displayed on the author's profile page. Tweets are publicly visible by default.

However senders can restrict message delivery to their friends list. Users may subscribe to other author tweets—this is known as following and subscribers are known as followers. Nowadays, we can observe several application of the Twitter to marketing actions. In Japan, a couple of marketing plans using Twitter succeed in business (*cf. Nikkei Net Marketing* [13]). Tokyu Hands, a retailer, employed Twitter for the response system of product inventory information from customers' inquiry. One of the difficult tasks involved with Twitter is human-labor resource. That is, a certain amount of human resources have to be allocated to Twitter personnel. This requirement is not cost-efficient. Tokyu Hands adopts the auto-response engine for their Twitter response system [2]. The details will be introduced in the presentation. Another successful case is Z-kai, a clamming school. Z-kai used Twitter at the right moment of the pass-announcement at University of Tokyo [3]. The timing is appropriate and the usage of Twitter as a media is appropriate, in turn, the result of Twitter marketing plan is very valuable. As well, the details will be mentioned in the presentation. Even though lots of new technologies and media emerge continuously, partly they assist marketing planning but, on the other hand, complicate the issues in marketing planning, especially marketing communication strategy, which we discuss in the next section.

## 2. Issues in Marketing Communication Strategy

Marketing department is in charge of several functions, such as brand management, sales, marketing research, channel management, to name a few. Among these marketing-communication should be one of the marketing tasks that involve a substantial amount of marketing budgets. Regardless of the financial magni-

tude, few marketing-communication plans have been checked after the implementations. In addition to the economic decline in the size of ad markets, executives are prone to demand the accountability of communication strategy before the launch and the control after the campaigns. This trend is mainly because of the budget cut.

Even though marketing communication managers are given with the budget constraints, still they are required to achieve a same level of marketing performance as it used to be. This accountability is one of the crucial issues in marketing communication strategy these years. The concept of IMC (Integrated Marketing Communication) still takes an important role in marketing communication strategy (*cf. Duncan* [5]; *Moriarty, Mitchell, and Wells* [12]). However, the straightforward application of IMC is no longer enough to respond to the demand as to the accomplishment of the communication-objectives under a limited budget.

Inoue [10] proposes the concept of OCM (Organic-Communication-Mix) so as to this issue. The details of the OCM will be stated in the presentation but the essence of the OCM is that marketing managers should build media-planning by treating media organically while considering the value of customers organically. Inoue proposes that the ultimate end of marketing communication strategy should be the development of cognitive knowledge structuring toward brands' value proposition as close as possible. In the next section, we briefly show the experiment that validates the concept of OCM.

## 3. Cognitive Knowledge Structuring

We basically categorize knowledge into two types, that is, declarative knowledge and procedural knowledge based upon the cognitive-science theory, even though there exist other ways to classify, such as

tacit and explicit knowledge (*cf.* Goldstein [7]; Nonaka and Takeuchi [14]). We run an experimental study to validate the concept of OCM. The data were collected via a marketing research company with the random sampling of 270 in Tokyo area in September 2008. We have used the two Japanese-product brands. The first brand is GUM of Sunstar Inc., a toothpaste brand, and the second is TII-DA of Nissan, a compact car brand. We controlled the combination of the ads media to which the subjects were exposed, out of the TV ads, newspaper ads, Internet Ads, and store-front ads of the two brands. Another treatment we have incorporated with the experiment is the activation of information processing or not. Before these treatments of the media and information processing, we have measured the basic knowledge level and the degree of involvement as to the toothpaste and car categories. We measure the precision of knowledge structuring based upon the root-mean-squared-error and R2 on the ground of the conjoint analysis (*cf.* Green and Srinivasan [8]; Orme [15]). Similarly, we measure the degree of knowledge structuring based upon the variance of the residuals. These models are specified as follows:

$$R_i = \sum_{k=1}^K \sum_{m=1}^{M_j} a_{ikm} x_{km} + e_i \quad (1)$$

where  $R_i$  is the extent to which respondent  $i$  is likely to purchase (0 to 100),  $a_{ikm}$  is the importance of level  $m$  of attribute  $k$  for respondent  $i$  to be estimated,  $x_{km}$  is the value of level  $m$  of attribute  $k$  given in the conjoint setting, and  $e_i$  is the residual term for respondent  $i$ .

We also utilized the text mining, using Text Mining for Clementine provided by SPSS Inc., so as to clarify the knowledge structure of the two categories in a natural way, *i.e.*, without any obtrusive manner. Even though the tool is distributed by

SPSS Inc, the original morphological analysis algorithm is given by Matsumoto *et al.* [11], that is so called ChaSen. We measured the media characteristics, especially, societal one, based upon some scales that have been already developed and well used for the four media designed in this experiment.

We have run several ANCOVA (ANalysis of COVariance) to test the hypotheses to validate the concept of OCM, where the dependent variables are the precision and degree of knowledge structuring and the independent variables are the main and two-way interactive effects of the media exposures, the media characteristics, and psychosocial measures such as involvement and knowledge regarding the categories. First, we confirmed the concept of OCM. The entire ANCOVA model fits very well ( $F_{239, 17}=1.93, P=0.017$ ). The significant main effects are basically related to newspaper-media, *i.e.*, the media exposure ( $t=2.04, P=0.042$ ) and the media-characteristics of sharing ( $t=-3.18, P=0.002$ ). The interesting two-way interaction effect is the one between newspaper-sharing characteristics and TV exposure ( $t=2.10, P=0.037$ ). This implies that the merely the multiple-exposure is not enough but the organic aspect of the media interaction, that is, the sharing is the key for the effectiveness of communication strategy.

Second, we have run several ANCOVA models according to the types of knowledge structures. We identified the consumers who have stubborn knowledge structure by the size of intercept term of conjoint analysis in equation (1) where a larger intercept term is assumed to be more stubborn knowledge structure since the fewer portion can be changed by the product attributes. In this ANCOVA model ( $F_{94, 46}=1.65, P=0.031$ ), we found that the interaction effects between internet and newspaper- ( $t=2.14, P=0.038$ ) and TV- ( $t=2.53, P=0.015$ ) media are impor-

tant but the media-characteristics of multi-media are necessary for the effectiveness. Similarly, we identified the customers who are preferred in the sense that their understanding of brands is correct based upon the positive importance of attribute coefficients in equation (1) because such customers conceive the brands as the brand managers intend to market. The  $F$  statistics of the ANCOVA is 2.24 with the degrees of freedom of 89 and 18 and the significance probability is 0.028. We found that the basic knowledge regarding the brands is a necessary condition for the effectiveness of Internet media ( $t=2.10, P=0.049$ ).

As above, we confirmed the concept of OCM and the some conditions that are required for the effective marketing-communication strategy. In the next section, we generalize the effectiveness and introduce the framework of marketing ROI (Return on Investment).

#### 4. Effectiveness Measure of Marketing Communication and Marketing ROI

The budget cut as to marketing, especially marketing-communication, gets severer these years. Executives are prone to minimize marketing budgets as many as possible. Still, marketing managers are asked to achieve a same level of marketing performance. The accountability of marketing activities prior to their implementation is necessary and this fact leads to the emergence of marketing ROI.

Marketing ROI is still a new concept for marketing managers and academicians. The definition and the framework vary among them. In this paper, we propose the framework as in Figure 1.

The core purpose of marketing ROI is to identify the relationship between the investment and return of marketing actions as depicted by the both side arrow on the top part of Figure 1. The assess-

ment of investment is relatively easy since it is based upon the costs and/or budgets for marketing actions. The assessment of return is a tough job for marketing managers. Most business tasks have to be evaluated financially based upon balance-sheet (BS) and/or profit-loss (PL) statements. Typical measures are sales, profits, market-share, ROE (Return on Equity), and so on.

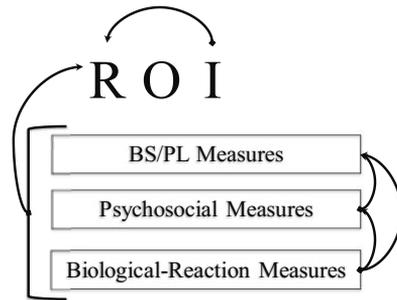


Fig. 1: Framework of Marketing ROI.

However, few marketing activities directly affect on BS/ PL measures, rather indirectly. Marketing actions have an effect on, say, sales in a long-run or middle-run, via distribution systems (direct effect on channels but indirect on sales), compensated with competitors marketing actions, and so on. Thus, we propose the two other measures, *i.e.*, psychosocial and biological-reaction measures, so as to deal with the indirect effects of marketing actions on BS/ PL measures.

Historically, marketing managers exploit the psychosocial measure frequently. In the area of marketing communication management, AIDMA (Attention, Interest, Desire, Memory, and Action) and DAGMAR (Defining Advertising Goals for Measured Advertising Results, Colley [4]; Unaware, Aware, Comprehension and Image, Attitude, Action) are popularly used. For the brand management, the measure such as Innovativeness, Activeness, Familiarity, Credibility seem used even though most of brand-evaluation

measures are confidential. Even though these psychosocial measures have been used in marketing management and popular, marketing managers need to associate these measures with BS/ PL measures so as to make correct decisions.

One of the issues of the psychosocial measures is that the measurement methods are mostly questionnaire based and the surveys inherently involve the errors. Some errors are just measurement errors but others are intentional measures. For example, respondents are prone to express positive attitude via questionnaires even though they might have neutral or negative attitude in truth. To overcome this issue, we propose the third, biological-response measures for marketing ROI.

There exist several ways to measure biological-responses (Figure 2). We can measure brain-blood-flow via fMRI (Functional Magnetic Resonance Imaging), a most expensive technique. Also, we can quantify brain wave by using EEG (Electroencephalography). A well-known measure is GSR (Galvanic Skin Response) where we can use several machines to calculate the GSRs. Another well-known measure is eye-movement with the usage of, usually, eye-cameras.

<b>Biological Response Information</b>	<b>Measuring Techniques</b>
Brain Blood Flow	fMRI
Brain Wave	EEG
Galvanic Skin Response	GSR
Eye Movement	Eye Camera

Fig. 2: Methods for Measuring Biological-Responses.

We have run the experiment with a new device that allows us to measure GSR and eye-movement quite easily (Fukushima, Inoue, and Niwa [6]; Oyama, Miao, Hirohashi, and Mizuno [16]). The data are collected via a marketing research company located in Tokyo (Japan)

with the sample size of 200 in October 2009. We have confirmed some significant correlations between biological-responses (Lyapunov index and fractal dimension) based upon the logit models where the dependent variables are the ad effects and independent variables are both the traditional and biological-response measures. However, the traditional psychosocial measures account for the ad effects more than these biological-responses at this moment. Besides, we found that the surrounding environments for ad-effect experiments are crucial for the verification.

### 5. Future Tasks

One of the major points that we would like to stress in this paper is marketing ROI, a scientific management framework in the current business environment in the sense of the budget cut, cross-media/new-media emergence, and so on. The application of marketing ROI seems to have, at least, two impacts on marketing management. One is the asset effect of marketing efforts, that is, by applying marketing ROI to marketing management, marketing managers have to check their marketing plan beforehand and afterwards and, in turn, can accumulate marketing knowledge via this Plan-Do-See framework. The other is the comprehension of the investment-, not cost-, aspect of marketing efforts. This implies that the straightforward cost-reduction would not produce sound marketing performance. Rather, both executives and marketing managers should set up a right goal and thing-to-do and identify the investment to achieve the goal.

However, the possibility of the application and implementation of marketing ROI depends upon the characteristics of organizations. The research that attempts to investigate on the relationship the types of organizations and the adoption of

marketing ROI should be critical as a future task.

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