Advertising as a factor of production

Bruce Hall, Howard Merrell and Partners, argues for an alternative model of advertising in the firm, which does more justice to the benefits of advertising

One of the most perplexing issues marketing managers face today is that of allocating scarce resources efficiently to drive top-line revenue. Increasingly, for companies in traditionally heavily-advertised categories, especially consumer packaged goods, inability to drive top-line revenue is emerging as a key barrier to business growth (1). As these categories mature, do marketers need to not only find viable brand extensions and new products, they also need tools to stabilise and maintain share for their mature brands.

Neoclassical economics, with its theory of the firm, offers such a tool, but this tool has been underutilised in managing marketing budgets because the operative mechanisms linking inputs (especially advertising dollars) to outputs have been ill defined and poorly understood. Building on a theoretical foundation in neuroscience, we have developed a model of those operative mechanisms that allows us to bring the power of economics to this problem of critical resource-allocation (2).

We believe that misperceptions about the mechanisms through which advertising operates on consumer behaviour have led to misallocation of marketing resources both by under and over-utilising advertising as a factor of production. The aim of this article is to correct those misperceptions, and lay the foundations for more efficient allocation of those dollars between tangible and intangible factors of production.

New model of how advertising works

The Perception-experience-memory model of advertising, as described in Hall (2), is the basis for this discussion. This model breaks the effects of advertising into three phases.

1. Pre-experience exposure.
2. Experience.
3. Post-experience exposure.

During the pre-experience phase, advertising drives trial through creating expectations about the brand, a sense of anticipation of the communicated benefits, and a rationale for purchase. We believe that the majority of advertising-budget decisions are based on a desire to exert influence on the consumer in this pre-experience phase – in other words, to drive trial. The effects of advertising on the consumer's actual experience with the brand, and the memory of that experience, are largely neglected in the decision-making process.

Enhancing experience

One of advertising's key functions in this model is enhancing the consumer's experience with the brand. Advertising has been shown experimentally to enhance sensory experience both when exposed to the consumer before the experience, and in retrospect, when exposed afterward.

Experimental research in psychology showed nearly 40 years ago that a positive brand schema could make beer taste better (3). Subsequent research continued to support those early findings, but more importantly, it has recently been shown that advertising can affect experience after, as well as before, the fact (4).

In a groundbreaking experiment, Braun demonstrated this effect convincingly. From an advertising and marketing perspective, this was a major breakthrough: the work showed that exposure to advertising can transform 'objective' sensory information, such as taste, in a consumer's memory, prior to the judgment process, and after the consumer had tasted the product.

> 'Exposure to advertising can transform 'objective' sensory information, such as taste, in a consumer's memory'

Braun showed that by exposing consumers to an ad for orange juice after tasting a sample of bad-tasting juice, they could be induced to falsely identify the juice they had just tasted as a better-tasting sample than the one they actually experienced initially. The study demonstrated that '... post-experience advertising could make consumers think that they had tasted a more flavourful juice by altering their memories of the tasting experience' (4).

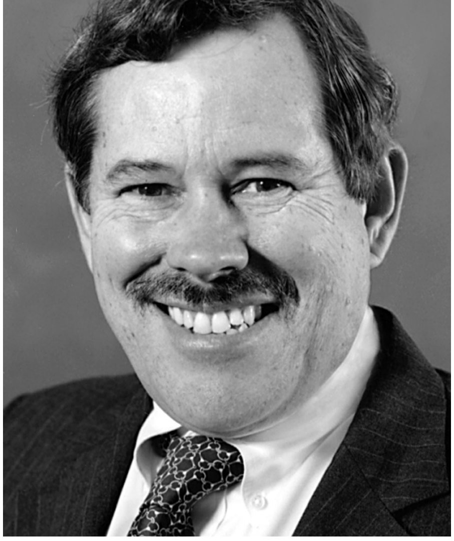
If advertising actually does affect how and what consumers remember, to the point that '... they believe that their past product experience had been as suggested by the advertising,' (4) the implications for the role of advertising as a factor of production are dramatic. Advertising is validated as an instrument for shaping not only perceptions and attitudes, but 'objective' sensory experience as well.

In addition to sensory experience enhancement, which is experimentally validated, we add one other element – social experience – which is at the core of most service exchanges. Whether a consumer is interacting with a bank teller, a call centre or a landscape contractor, the social aspects of the experience are critical. If the service provider creates a sense of trust and a relationship with the consumer, customer satisfaction will improve. Advertising establishes a basis for that trust and that relationship.

Post-experience exposure

The key function of post-experience exposure is to organise memory. First and foremost, it provides verbal, visual, and aural cues to enable the exposed audience to recall the brand and the product. Musical elements, logos, mnemonic devices, taste cues, colour, product information, all become part of the consumer's memory constructs. When integrated, this structure becomes what we call the 'brand'.

Post-experience exposure also operates cognitively by giving the consumer a basis for rationalising, or 'interpreting',



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their beliefs. The ad not only influences the consumer to feel that the sensory or social experience was a good one, but it also provides reasons to believe that it was. This does not imply that the advertising must provide an explicit reason-to-believe. The consumer's cognitive processing of the information will provide that independently if the brand is salient to them, but the advertising's implicit cues can guide and shape those rationales.

Advertising in the firm's production function

Advertising in this model acts like one of the inputs in a classical multi-input economic production function, where the output variable is a marketing outcome, such as sales. A generalised marketing function might look like:

Q=f(D, N, L, P, A).

Where Q is sales, D is research and development expenditure, N is ingredient quality, L is labour cost, P is promotion expense, and A is advertising expenditure.

This gives us some perspective on the interchangeability of inputs. Since advertising can alter post-experience perceptions, it is possible – at least in theory – to spend more on advertising to compensate for spending less on research and development to improve the product, or less on promotion expenditure, an input that directly complements advertising.

Advertising can also allow the firm to spend less on labour to provide customer service. Figure 1 illustrates this for a hypothetical firm that uses labour to provide customer service, and advertises its service. In Figure 1 sales, Q, appears on the vertical axis and labour, L, appears on the horizontal axis. All inputs and outputs are measured in dollars, and all other inputs except advertising are constant. The output curves derive from concave production functions that are representative of a range of mathematical forms found in the economics literature (5).

Three different output curves are shown, corresponding to three different levels of advertising expenditure. The lowest level of advertising expenditure corresponds to curve A1. At this level of ad spending, a profit-maximising firm, under standard neoclassical assumptions about factor and output markets, will produce an amount of output equal to Qm, where the value of marginal product is at a maximum. Given fixed levels of other inputs, labour required to produce this amount of output is equal to L1.

Now assume that advertising expenditure is increased to A2. With increased exposure to media, customer perceptions of their service experience will become more positive, and the firm will be able to reduce labour expense without reducing output, and therefore earn the same amount of profit. Increasing advertising to A3 again shifts the output curve to the left, reducing labour cost to L3.

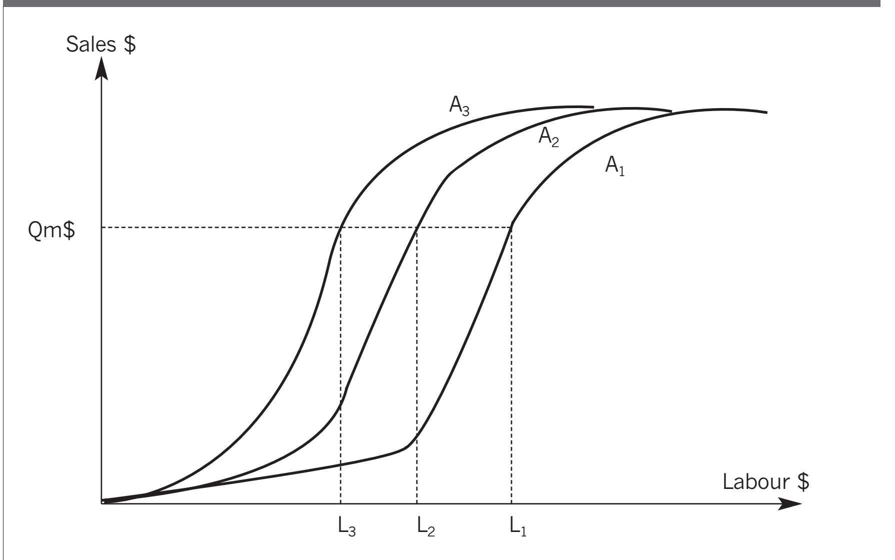
The fast-food industry fits this example well. In a retail environment, especially with franchise operators, perfect customer service is unattainable. Perfect product quality is also unattainable, because service and quality are not under the ultimate control of management. Advertising, however, is under management control. The optimal point on the marketing production function for a fast-food marketer may well be where service and quality are only 80% to 90% of the maximum achievable level. Advertising operates on customer perceptions to compensate for the remaining quality gap.

Of course, it should be obvious that spending lavish amounts of money on advertising to compensate for a plainly inferior product probably does not make sense. Investing first on improving the product may make more sense, because product improvement costs when quality is very low are likely to have greater marginal returns than very high levels of advertising, which may be at the point of diminishing marginal returns. But at some point, it may also make sense to stop spending on product improvement, and spend on advertising instead.

The problem for many consumer packaged goods companies who operate in mature categories also becomes clear in this model. If they have achieved success by differentiating themselves on product quality, they may have reached the point

FIGURE 1

Estimated value of UK piracy



of diminishing returns with respect to that factor of production. They will achieve greater marginal returns by using advertising to support consumer perceptions of their brands than by making incremental quality improvements.

Conversely, companies who achieved success through aggressive marketing and advertising may now be operating in the range of diminishing returns to advertising. A company like McDonald's, for example, now faces difficult and expensive decisions to improve their product and service quality levels to the point where advertising can once again show the marginal returns it historically provided for that brand.

Viewed from this perspective, the difficulty marketers have in measuring advertising's effects also becomes much more understandable. Most in-market advertising tests measure a single variable input in the production function, media weight, and they measure it at or close to the optimum point on the overall response surface. At that point, the marginal returns to advertising should be rather small, and in fact, measurements of the effect reflect that reality. Only in the case of truly new products, where the other inputs are implicitly zero, do we see very high returns to advertising.

Conclusions

Marketing and advertising need to move away from explicit and implicit reliance on drive-to-trial models of advertising. The model we have described here demonstrates that through a complex of psychological effects before, during, and after the consumer uses a brand, advertising can profoundly affect the consumer's experience. Those effects are an essential element of brand marketing, that can optimise the firm's marketing production function, and maximise the revenue generated by complementary functions, from sales, to operations, to research and development.

> 'The explicit role of advertising as a substitute for product and service quality has not been sufficiently acknowledged'

It is critical to understand and use the power of advertising where it is most effective. That is in shaping perceptions, before, during and after consumer experience with the 'actual' product or service. Research on post-experience advertising shows that consumer perceptions of product quality are not invariant, and are subject to manipulation in long-term memory. That knowledge gives marketers and advertisers a different way to think about how they use advertising to achieve business goals. Hopefully, this new understanding of advertising's ability to gain leverage with the consumer will provide a key to growing top-line revenue.

Finally, we need to learn how to use advertising as a factor of production like any other available to the firm. That means looking not only at the marginal return to advertising in terms of revenue, but also at the impact that changing advertising expenditure has on other factor inputs. Traditional strategic planning models view sales and marketing expenditures as substitutable inputs, but the explicit role of advertising as a substitute for product and service quality has not been sufficiently acknowledged. ■

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