передачі інформації в наш час. Використання та запровадження нових методів спілкування зі споживачами є невід'ємною частиною маркетингу в соціальних мережах, який вимагає автентичності та відвертості.

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MARKETING MIX MODELING: MAIN ASSUMPTIONS

The key to effective functioning in highly competitive markets is to know the market, the customers better and engage each of them more actively. With the progress and explosive growth of Data Mining technologies [1], the availability of huge amounts of data, enterprises began to use powerful tools of Data Science in marketing, which allows to increase the effectiveness of marketing activities [2].

Measuring the impact of marketing is important for improving its effectiveness and achieving greater validity of marketing decisions [3].

Marketing Mix Modeling (MMM) is a powerful analytical tool for obtaining hidden knowledge that can directly lead to maximizing the ROMI [4]. It allows you to solve a number of marketing tasks: form a marketing mix and optimally allocate the marketing budget, optimize the portfolio of brands, specify the media mix and build a media plan for an ad campaign, assess the influence of competitors and, as a result, forecast key business indicators.

It is worth noting that the MMM is always based on the formation of initial assumptions regarding the impact of all elements of the marketing mix on business indicators (sales, market share, awareness, traffic, etc.). Let's consider the main ones:

Distribution is the level of coverage of trade networks, i.e. the percentage of stores (pharmacies, websites) where the product of a certain company is presented. According to the basic assumptions, the higher the level of distribution lead to the higher the level of sales. However, such a relationship is not only linear, but also non-linear, that is, it has a certain limiting value (impracticability of further growth), which implies the introduction of a non-linear function into the model and the verification of this hypothesis empirically on the basis of historical data.

Price – for most products, it is assumed that there is a negative relationship with sales, market share or other business indicators. However, this hypothesis must be confirmed or disproved because there are brands with zero price elasticity, when a price increase does not lead to a decrease in sales. In addition, taking into account the fact that the enterprise operates in the conditions of the competitive environment, it is appropriate to assess the impact of the "price index" factor, which is the ratio of the price of the brand and the average market price in this market segment (category) and shows how much more expensive or cheaper the brand is compared to competitors.

It is also worth noting the assumption that an increase in price leads to a decrease in physical sales volumes, but at the same time sales in money can change in different directions (if an increase in price compensates for a decrease in sales in physical volumes, then revenues will increase, and vice versa).

The next assumption concerns the influence of competitors' marketing activities. Of course, the presence of competitors in the market affects the dynamics of the company's sales. The basic assumption regarding the impact of competitors' media activity is that competitors lead to the switching of consumers' attention to their brand and, accordingly, a decrease in business indicators. However, there are examples when the activity of competitors, on the contrary, stimulates the company's growth. For example, for one of the sectors of e-commerce, competitors stimulate the growth of traffic to the site, and further conversion in sales depends on price, assortment, etc.

The behavior of the consumer, his characteristics, previous experience of interaction with the business determine the level of consumption of each product, the reaction of consumers to the offer of the enterprise, as well as the potential outflow of the client from the client base.

Product. The assumptions in this group are as follows: the launch of novelties stimulates the growth of classic products of this brand; advertising activity of each of the products has different effectiveness due to differences in targeting, positioning, etc.; the appearance of new products from competitors leads to a drop in brand sales.

Assumptions about *advertising activity* include:

- advertising in each communication channel has different effectiveness and ROI;
- media activity has different effectiveness during the year or promotional cycle, taking into account the specifics of sales of the category and the consumer's journey;
- each video duration has a different cost and at the same time works differently for the consumer, so there is potential for optimization if the video has a higher or lower efficiency than the difference in the cost of its placement;
- at a certain point in time, the advertising message wears out: after a certain volume of activity for the creative on the air, the consumer reacts to the message more poorly, which reduces ROMI, therefore it is important not to overspend and stop the ad campaign at the necessary moment;
- each creative has a different effect on the consumer, and the change of communication during the advertising campaign allows to minimize the wear-out effect and expand the reach of different audience segments;
- the greater the weekly media pressure, the higher the effectiveness of media activity, however, the dependence often has a non-linear relationship and exceeding a certain level does not lead to growth of business indicators (the brand overinvests);
- there is a certain lag between media activity and business

indicators, that is, media activity has both short-term and long-term effectiveness (estimated due to the presence of a non-linear relationship using the "AdStock" indicator in the model);

- the effectiveness of media activity increases during the advertising campaign due to the accumulation of impact and has a maximum value at the end of the campaign.

In addition to forming an effective marketing strategy on a national scale, it is important to form assumptions about a regional strategy. Despite the fact that any nation is homogeneous, the consumer behavior in all cities and regions differs significantly, which affects the fact that the elements of the marketing mix have different effectiveness in terms of impact on sales. This assumption underlies the differences confirmed by the construction of regional models for each brand.

The economic-mathematical model is a simplified reflection of objective reality, since it is not possible to assess the influence of absolutely all factors of the marketing environment. In this regard those variables are selected as factors, which have the greatest impact on the dynamics of the studied indicators, and the rest of the factors are omitted. Thus, during implementation, it is assumed that a significant number of implicit assumptions are taken into account.

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