

Special Article**Product Development — A Perspective****SITARAM DIXIT**

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Consumer products market today is extremely competitive. To survive in this competitive environment, one has to continuously re-evaluate one's product and their development process. Competition forces pressurise an organisation to market their produce, providing proof and support for the quality attributes and various advertisement claims. To be successful, one has to start evaluating, one's product for competitive benefits.

These advantages should not only be distinct but also be reproducible. Scientific knowledge today is freely available, that most of the competing organisations have access to similar technology leading to products that are very similar to one another. To develop a product very much different from competition, in these circumstances, become very difficult. In such a scenario, product differentiation is primarily due to differences based on specific consumer benefit or claims, relating to a single perceived aspect of efficiency, rather than the overall superior impact achieved by the product. A general claim that a product is superior than a competing one is not likely to interest consumers today, who would rather prefer to support specific claims like "checks germs all day" etc.

The chances of a product being different from others can only be achieved when specific claims are evaluated and addressed. Product development need not necessarily mean development of a new product and conduction of a monadic consumer testing. An improved version of the current product being marketed can also be consumer tested. Similarly comparative testing of one's product with that of the competition can also be conducted. This is very useful in positioning the product versus competition. It is only by comparative study, the strengths and weakness of the two products can be determined. The results of these tests can be effectively utilised to drive home the advantages of one's

product efficiency, by suitable endorsements and advertising claims. The process of product development basically starts with a definite market requirement. Marketing research determines the need for a product with a specific claim, for example, "Long lasting deodorant soap". The developments team comprising of research chemists and marketing professionals all work together to achieve and fulfil the market specific needs. To start the feasibility of developing a required product a number of factors concerning it is determined.

The foremost is whether a new active ingredient is essential. Sometimes the specific need can be achieved by cost-effective use of the existing ingredients, with minor modifications in the existing formulations. The planning process that enhances the effectiveness and efficiency of the development process can be complex. The second obvious factor would be the differential costs that are associated in the development of the various product options.

The overall company strategy, formulation cost, technology, government regulatory bodies, and marketing all put together determines the product development process. In certain cases the product development scientific team, comes up with a new innovative formulation or idea. Marketing personnel carry this idea to potential consumers in the market place and test the importance of the attribute that has been identified technically by the development team. Apart from the above reasons medical benefits and consumer attitudes, may also determine product attributes in the positioning of a personal care product. Testing of any new idea or attribute in a new formulation is initially carried out in a small scale and the return of investment, estimated before deciding the market launch of the reformulated product.

One of the most important aspects of product de-

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velopment process is the necessity of all departments involved in the project to jointly work together for its success. It is also important that while designing a development project, the objectives should be clearly set. The experimental methodology and studies to be carried out are to be so designed that the set objectives are achieved. Defining the objective at the beginning of the study increases the effectiveness of the entire project. Research plans differ by sample size, the method of sampling, number of measurements, analysis of collected data, and on the objective itself. Typically, the product development process consists of the following steps.

Marketing research, define, consumer need, and the marketing department decide product positioning. The development department develops the physical and chemical parameters required by the product. After the product is developed, product safety, stability and efficacy studies are carried out in a laboratory.

In certain cases, clinical tests and studies are required to confirm efficiency of the formulated product. Consumer testing for response of the developed product attributes, and as perceived by the consumer during use is then confirmed. Providing an early response about the perceivable product attributes, to technical personnel allow, for more responsive planning for any changes, if required in the formulation. This initial feedback is very much necessary, for the developed formulation may be chemically effective, but the consumers may not like some of its attributes.

Formulations sometimes do not perform as envisaged by the formulators. The problems may arise due to reasons contrary to rules, like unwanted interactions between the actives with other non-active ingredient acting as vehicles in the formulation. Thus to understand the formulated product completely, requires testing the objective efficiency, along with consumer perceptions. Some consumers may not accept the odour, shape, colour, or skin feels. In some cases the ineffectual attribute of the product may have to be eliminated, to bring out the valid parameter to the fore, so that, it can be

perceived by the consumer. For example the fragrance of the product may mask the efficiency of a product, and has to be eliminated, to obtain a bias free rating.

If a formulation developed has good product efficiency but the benefit is perceived only after a long duration, the product could be considered inferior. In such a situation market research on consumers, could help formulators improve the formulation by making minor changes that yield a product, where the benefit is easily perceived, much earlier, by the consumers. By avoiding such consumer testing and careful monitoring, it is possible that certain product advantages will be over looked.

Consumer market research personnel, help the development formulators with their comments and views, about the relevance of various attributes or parameters that are desired by the consumers. Sometimes certain improvement, observed by use of a formulated product is difficult to quantify. Moreover, the consumers may not appreciate these changes, as they would not easily perceive them. The development department should conduct tests, with an objective that these tests are within range of human perception, and the consumers appreciate the claimed benefits. All test measurements' methods used should be consistent to the actual situation observed during usage. This interaction between marketing and development department helps the development chemists, to make changes in the product that would fulfil the needs of the consumer as originally envisaged by market research.

A preliminary study using a small sample size is designed to estimate the time required conducting an extensive study. These lab-designed tests are neither too short nor too long drawn and help the formulator to optimise the formulation and its perceivable attributes.

Consumer-use conditions and understanding the different aspects in play during use is very important. Sometimes product found to be very effective in laboratory controlled conditions may not be so when conducted in an unsupervised consumer use. The problem may be manifold: due to the either

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inability, or unwillingness of the test subject, to use as directed. It can also be due to inadequate understanding of the product instructions. Laboratory studies, yielding excellent efficiency may not be repeated in consumer tests, if consumers do not use the product in recommended dosage levels. We are all aware how difficult it is to change existing habits and behaviour. To maximise the benefits of a product, it is desirable to test usage of the product with a small group of consumers, before extensive consumer testing. Multiple measurements of all tests become necessary to increase confidence level and confirm the envisaged product benefit, before market launch is finalised. After the experiments are completed, the data collected is analysed using appropriate statistical methods and conclusions drawn for decision making.

The time required by the entire process right from the time the market research studies bring up the idea to developing the formulation, the final consumers feed back and launch of the product may take up several months. Consumer favourable perception of a formulation ultimately decides the success of a product. The market environment today

thrives on product differentiation. An organisation today has to advertise claims and benefits and convince customers of the perceived product advantages. However, consumers, favourable response, may not necessarily depend only on product superiority or its performance. Consumers are easily led or swayed by advertisements, endorsements by celebrities and tall claims of the product efficiency.

However, it can be emphasised that to sustain a favourable acceptance of a product, it is necessary that the advertisement claims and endorsements be documented by product performance and consumer acceptable attributes. Every organisation today places a thrust in the product development process, ranging from minor modifications in the current product, upto launch of a new product, to increase profitability and for survival. Charles Darwin decades ago postulated his theory of evolution, "The survival of the fittest". Now-a-days a consumer product can survive in a competitive market only if it fulfils consumer needs. Product development thus becomes very important, if a product has to flourish or even exist, in today's competitive environment.