

The Flavour and Fragrance Industry Today — A Perspective

SITARAM DIXIT

Corporate Manager — Fragrances, S.H. Kelkar & Company, P. Ltd., Mumbai
E-mail: sitaram—dixit@shkelkar.com

Alain Corbin in his book 'The foul and the fragrant', remarks that humans from childhood to old age, undergo an aromatic progression from the lactic acid of infancy to the less acid and more mellow flavour of old age; between the two extremes lies the fragrance of adolescence. Truly speaking, one can easily say whether or not humans are conscious of the physiological effect of odour and taste, they do have a very important affects on emotion, memory, sex and health of the individual.

Flavours & fragrances – moods & emotions

Fragrance odour being, background stimuli is normally overlooked and is not usually the focus of our attention in daily routine, even though our emotions and behaviour are influenced by it. A smell that we are very much accustomed to is not noticeable to us, but to others it represents a very distinctive odour. A public toilet, a butcher shop or cigarette smoke can make us restless, without us specifically noticing the smell. An odour penetrates an individual's memory and subconscious mind, stirring deep feelings and emotions. Tests have shown that spiced apple and some floral smells lower blood pressure and heart rate. The smell of strawberry in surgical masks helps reduce fear and anxiety. A scent of pine helps one relax and a hint of lime and fresh floral helps sharpen concentration.

Odour memory & attraction

We are exposed daily to a succession of fragrance odours that are usually registered in our subconscious mind affecting the emotional state of our mind. This is very different to our other senses that are registered in our conscious mind. A particular odour can trig-

ger the memory in its own unique powerful manner. An old perfume advertisement put this very aptly. It says, "Nothing triggers memory as strongly as a scent. Just a hint of a particular fragrance brings back that time, that person. Names are forgettable. Even photos fade, but perfumes linger." The ability of a fragrance to evoke memories is great. You will have experienced that even after many years a particular fragrance smelled just once has a power to recall your feelings, events, images and experiences. As Rudyard Kipling remarks, "Scents are surer than sounds or sights to make your heart strings crack."

Every person possesses a distinct body odour — more accurate than a fingerprint. Surprisingly even identical twins do not smell the same. Sexual attraction is based on scent, which gives credibility to the theory that romance is all chemistry. However, the body's natural odour and not applied fragrances serve as a sexual magnet when the sexes are close to each other. Applied fragrances are only effective when they blend with ones own natural body odour. We consume food and drink to get the much-needed energy to survive and live life at the fullest. Taste is a very important component during the consumption of food and drink. The taste of the selected food and the aroma released by it is responsible for recognition and acceptance. A tasty food that appeals to our brain contributes to our general sense of well-being by assisting the digestive process.

Fragrance and flavours are a harmonious combination of natural and / or synthetic ingredients essential to lend taste and smell to food, pharmaceutical, personal care, fabric care and household care products, pleas-

ing the senses in totality. If fragrances and flavours are eliminated from use, our life will become dull and boring, not good enough to live. Thankfully today, fragrances and flavours are present throughout all levels of a product — right from an expensive one, to the cheapest — and play an invaluable by its performance. Signal attributes take care of this emotional need, stimulating as well as calming or relaxing the user.

Market scenario

The world F&F market today is estimated to be about US\$16-bn, of which the 'top ten' players account for 66% of the market. The remaining 34% is spread over all other F&F houses, both multinational and regional players. The F&F market is almost equally distributed between flavours and fragrances at US\$8-bn each. Globalisation of the Indian economy has made geographic barriers defunct, bringing disparate areas of the globe closer than ever before. To survive and grow in the global market environment is no longer an ideal situation, but a dire necessity. Lifestyles, preferences and rejections belong now to a more uniform and standard spectrum across the world, despite the subtle nuances so evident in specific regions. Adapting quickly to the latest trends is necessary for success.

The top five companies given in the list have had a substantial presence and business in India for many years now. Other international F&F houses in the last ten years or so have also set up shop and are active in the Indian market. The Indian F&F market is estimated to be about US\$250-mn. Similar to the international market, the Indian F&F market is also almost equally divided between flavours and fragrances. It is esti-

mated that international houses account for about 70% of the organised Indian market, while the rest is catered to by home-grown Indian companies like S.H. Kelkar & Company P. Ltd., Oriental Flavours & Fragrances Ltd., Ultra International Ltd., Khattri Fragrances & Flavours Ltd., Gupta & Company (P) Ltd., Sachee Aromatics Ltd., etc.

Almost all Indian companies are privately owned, and typically sales volume figures are not openly disclosed. S.H. Kelkar & Company, leads in the Indian F&F industry followed by other houses as mentioned above. Some Indian FMCG companies who use fragrances and flavours in their products also make their own fragrance blends, by purchasing individual aroma chemicals and mixing them. Mixing various fragrances purchased from different fragrance houses along with their in-house compounds is also a different way to make finished fragrance blends. Hence, the Indian F&F industry sales figures estimates given above may not be completely correct and may be 10% to 15% higher.

Industry segmentation

The F&F industry segmentation is based on the application areas for flavours and fragrances and is as given in Tables 2 & 3.

The flavour market

The flavour market is highly fragmented. Flavour purchasers may range from multinational companies, big Indian industrial houses, small-scale industrial units, local eateries and even individual homes. This is especially true in case of savoury, bakery and confectionary segments where manufacturing process is simple in comparison to other segments, which use more complex manufacturing technology. In 2005, the value-added food consumption market in India is predicted at Rs. 2,30,000-crore.

The fragrance market

The fragrance market is comparatively more consolidated, with majority players being either large or medium to small-scale enterprises. Although some segments do have very small players, the number is

miniscule. The Indian FMCG is characterised by intense competition both by multinational companies, organised and unorganised Indian manufacturing setups. The National Sample Survey (NSS) data puts the Indian FMCG market size at Rs. 89,000-crore, of which more than Rs. 53,000-crore was attributed to rural purchases. 41% of the middle class with 58% of the disposable income is in the rural areas. The consumption of non-food items year after year has only increased from 32.6% in 1987-88 to 46% in 2003.

The Associated Chamber of Commerce and Industry of India (ASSOCHAM) predicts that FMCG demand in rural India will rise by over 50% by 2012. The personal care, cosmetics and toiletries' market is itself about Rs. 23,562-crore, sundry articles is about Rs. 17,274-crore, and miscellaneous consumer goods Rs. 48,325-crore. The sundry and miscellaneous consumer goods, although not well defined, certainly does not include food, clothing, pan, tobacco, intoxicants, medical or educational expenses, entertainment, consumer services, footwear or consumer durables. In light of the above it is quite possible that the bulk of the expenditure was also on FMCG products! The modern cosmetics industry is still in the nascent stage and looks promising when you consider the vast population, the changing consumer attitudes towards health and hygiene, the proliferation of media and the growing awareness of the rising educated class.

Factors affecting the F&F industry

Traditionally, flavours and fragrances commanded a high price due to the flavourist or perfumer's artistic ability and difficulty in creation. Flavours and fragrances now have very similar requirements as consumer goods. It too requires investments in marketing and presentation, for commercial success. This does not mean that flavours and fragrances are far from artistic creation, but merely states that commercial rules have to be followed during creation while retaining the same quality followed in earlier times. Clients today believe flavours and fra-

Table 1
The top 13 global F&F companies

Rank	Company	Estimated sales [2005] [Million US\$]	Market share [%]
1	Givaudan	2,109	13.2
2	IFF	1,993	12.4
3	Firmenich	1,752	11.0
4	Symrise	1,360	8.5
5	Quest International	963	6.0
6	Takasago	898	5.6
7	Sensient Flavours	516	3.2
8	T. Hasegawa	406	2.5
9	Mane SA	311	1.9
10	Robertet SA	245	1.5
11	Frutarom	244	1.5
12	Danisco	238	1.5
13	Degussa Flavours	231	1.4
	Total of top 10	10,553	66.0
	Total of top 13	11,268	70.4
	Remaining F&F houses	—	29.6

Best estimates indicate Mastertaste (Kerry Ingredients) should ideally find mention in the top ten lists, however due to lack of firm sales data it is not included.
Estimated as on 1st Nov 2006.

Table 2
Application areas for flavours

Food Industry

- ◆ Beverages (liquor, malted food beverages, fruit based, colas, etc.)
- ◆ Confectionery (sweets, chocolates, candies, jam, jellies, chewing gums, Indian sweets, etc.)
- ◆ Dairy products (milk, yoghurt, frozen food, ice creams, cheese, etc.)
- ◆ Bakery and processed foods (cakes, flavoured breads, biscuits, meat, soups, noodles, etc.)
- ◆ Savoury (chips, namkeen, snacks, etc.)

Feed Industry

- ◆ Pet food
- ◆ Farm animal feed, etc.

Tobacco

- ◆ Cigarette (Smoking)
- ◆ Gutka (Chewing)
- ◆ Gudaku (Oral application)
- ◆ Pan Masala (Chewing)

Pharmaceutical Industry

- ◆ Medicines
- ◆ Health food supplements, etc.

Mouth care

Toothpaste, Tooth powder

- ◆ Mouth rinse
- ◆ Mouth Fresheners
- ◆ Lip gel
- ◆ Lipsticks

grances to be simple mixtures of aromatic materials and not a harmonious accord achieved with difficulty.

Price pressures

Flavours and fragrances are graded according to the price of the raw material used to create them, as it is easy to decipher the composition with modern analytical methods. The cost of creation, technical application and research, evaluation and panel testing is largely ignored in the calculations. Ironically, without hesitation, one purchases a marble carving or a canvas painting at exorbitant price, much more than the cost of the marble stone or the cost of canvas and paint, but is reluctant to spend similarly on a

flavour and fragrance purchase. In the last decade, prices offered to fragrance and flavour houses by FMCG manufacturers to supply flavour and fragrances have consistently gone down. Raw materials costs for manufacturing FMCG are on the rise. FMCG manufacturers are unable to pass on the same to consumers by increasing product costs. In view of this, price increases requested by flavour and fragrances houses are strongly resisted by FMCG manufacturers ignoring the genuine concern of the F&F industry affected by the overall increase in the prices of aroma and flavour chemicals that are the building blocks of their products. Price increases and fluctuations in petrochemical industry that are precursors in

the manufacturing of aroma chemicals have also squeezed profit margins substantially for the F&F industry.

Maturing markets

The flavour and fragrance market in the developed nations have fully matured with sales almost stagnant. In order to grow global F&F industries are increasingly looking at developing nations, especially India, China and the erstwhile USSR. The Indian market is still in its nascent stage and there is a long way to traverse before it fully matures. The lowering of margins have forced many global F&F manufacturers to look at India and China as sourcing centres for essential oils, and for manufacturing quality aroma and flavour chemicals required by their creative setups around the world.

Strategies to maintain marketshare & improve profitability

Fragrance and flavour manufacturing is not complex and involves simple mixing and making a blend of about 10 to 100 different chemical ingredients. Of these, some may be natural and some synthetic. Improving fragrance delivery systems using techniques like encapsulation, sustained release, or using newer methods in counteracting specific malodours, etc., are some areas where F&F houses are concentrating to maintain their existing business and to increase profit margins. The development of captive aroma chemicals production is another way larger F&F houses use to maintain leadership position and prevent cheaper imitation of their fragrance creations.

Core listing

One major method global FMCG manufacturers and F&F houses use is to make a long-term purchase arrangement among themselves, which permit large discounts for FMCG manufacturer and in lieu an assured amount of global business for the F&F houses. This core listing process adopted by most international FMCG manufacturers and F&F houses, effectively thwarts attempts by Indian F&F manufacturers to cor-

Table 3
Application areas for fragrances

Personal Care

- ◆ Toilet soaps
- ◆ Shampoos
- ◆ Hand wash
- ◆ Shower gel
- ◆ Cosmetics
- ◆ Hair oils
- ◆ Hair styling products
- ◆ Body talcum powder
- ◆ Shaving creams, shaving foams
- ◆ Deodorants

Fabric Care

- ◆ Laundry soaps
- ◆ Synthetic detergents (bars, powder, liquids, etc.)
- ◆ Fabric conditioner

Household care

- ◆ Household cleaners (glass cleaner, surface cleaner, dish wash, toilet cleaner, etc)
- ◆ Air fresheners
- ◆ Candles
- ◆ Incense sticks
- ◆ Insect repellents mosquito repellents

Tobacco

- ◆ Gutka (chewing)
- ◆ Gudaku (Oral application)
- ◆ Pan masala (chewing)

Fine fragrances & alcoholic fragrances

- ◆ After shave lotion
- ◆ Splash cologne
- ◆ Eau de Cologne
- ◆ Eau de toilette
- ◆ Eau de perfume

Aromatherapy products

Miscellaneous uses (paints, stationeries, plastic and polymers, motor oils, etc.)

ner their existing business, making these exclusive only to the selected few.

Safety – rules and regulations

Another important factor in the F&F industry is the strict safety norms, restricting the use of many chemicals, either due to governmental regulations or due to self-regulation by the industry itself. For example,

some fragrance ingredients are not permitted for use on grounds of safety, while some others are restricted in their level of use in fragrances, depending on the intended end-use. Products intended to remain on skin viz., 'leave-on' products, such as body lotions have stricter restrictions than those for products that are washed off the skin, viz. household products (e.g. floor cleaners) for

which there are little or no intentional skin contact. The fragrance industry is guided by the IFRA (International Fragrance Research Association) guidelines for fragrance ingredients as defined and published in the IFRA safety standards.

The American Fragrance Manufacturing Association established the Research Institute for Fragrance Materials (RIFM), in 1966 in USA as a non-profit making, independent body whose task is to evaluate the safety of fragrance ingredients. The types of test carried out on behalf of RIFM include oral toxicity, irritation, skin sensitisation and phototoxicity (sensitisation induced by sunlight).

RIFM also gathers information from other independent research, published scientific literature and aroma chemical manufacturers. An independent panel of international experts in toxicology, pharmacology and dermatology reviews the test results. The results are published as RIFM monographs in the journal 'Food & Chemical Toxicology'. In case there is any cause for concern about the use of an ingredient, it is immediately indicated by the publication by RIFM through an Advisory Letter, which is acted on by IFRA. Environmental safety is another area of growing concern and RIFM has started to evaluate the environmental impact of many of the high volume ingredients.

All flavouring substances are regulated by legislation, issued by FDA. Government departments that control the safety of foods is also responsible to control the safety of flavours used in the food products. The flavour industry too over the years have accumulated a lot of information and data regarding use, occurrence, biological properties and all the information have been used to carry out independent safety evaluation by various experts. The flavour industry is also regulated by GRAS regulations of the Flavour and Extract Manufacturers' Association (FEMA).

The manufacturers of flavour ingredients

around the world have set up the 'International Organisation of the Flavour Industry' (IOFI) based in Geneva, Switzerland. IOFI issues guidelines to the members, makes recommendations, draw up rules and make available their expertise, to harmonise the diverse rules in various countries for the betterment of the industry and for the benefit of the consumer.

Intergovernmental organisations like European Flavour & Fragrance Association, European Council, The Scientific Committee for Food of European Commission (SCF), The Food and Agriculture Organisation (FAO), and the World Health Organisation (WHO) of the United Nations also conduct independent study to evaluate the safety of the flavouring substances.

Fragrances and Flavour Association of India (FAFAI), and Essential Oil Association of India (EOAI) are similar bodies set up by the Indian Industry.

F&F operations

The flavour and fragrance industry operations are minuscule when compared to the bulk chemical industry. The flavour and fragrance industry still uses batch processes, unlike the continuous processing methods prevalent in the chemical industry.

The flavour and fragrance industry requires a lot more number of ingredients, albeit in smaller quantities, in order to create a single flavour or fragrance. This explains why every F&F company manufactures products only on receipt of confirmed purchase orders, so as to keep low inventories of raw materials. Inventory management is a very important function and streamlining systems and their operations is absolutely necessary.

Maintaining sufficient quantities of aroma materials at all times is difficult, without accurate forecasting of the fragrance or flavour need by the purchasing companies. This leads to long lead times, sometimes

almost 6-8 weeks for fragrance or flavour supply, which can be critical to end-user FMCG manufacturers.

Environmental conditions, political upheavals, dependence on imports, are other reasons responsible for affecting availability and cost of aroma ingredients and impacting supply and demand. This has led the global F&F houses to source the raw materials from Indian suppliers, which help in bringing down the cost for procurement and reducing lead times.

The F&F industry today is at the crossroads — finding it tough with rising input costs and dropping prices of compounded products. However, there is growth in absolute terms. Rising incomes, better education and more awareness will mean a higher inclination to spend on 'quality lifestyle' products for home and health, personal grooming and social symbols. The demand for flavours will also continue to rise as the processed food market continues to grow.

Regular use of flavours and fragrances in a product is no longer a luxury, but a necessity for consumer acceptance. Flavours and fragrances that are novel will continue to be popular and gain better and faster acceptance. India traditionally used more of natural flavours, as Indians preferred freshly prepared foodstuff, unlike in Europe and America, where artificial or synthetic flavour were in demand due to the use of canned frozen food and beverage. This is likely to continue. However, due to fundamental changes in lifestyles certain food items, beverages, confectionaries, bakery and snacks that generally use artificial additives will increase, giving a fillip to the flavour industry in times to come.

Future outlook

Competition is intense in the F&F industry, in terms of quality, price and services rendered to the end user. The competitive edge can only be achieved by use of captive and exclusive ingredient tech-

nology that will make ones flavour and fragrance unique and difficult to copy. Cost control will continue to play a very important role, if one has to maintain a leading position.

In recent times we have seen economic crisis, conflicts and confrontation, among nations. As an outcome of all these upheavals, independent nations have become interdependent. Energy conservation, environmental concerns, communications and the will to survive have made commercial co-existence on one another crucial. The ability to function on a truly integrated world scale and service globally will be a key in gaining core listing and long term contracts, mutually beneficial to the F&F houses and the FMCG players.

Today, commercial economic power is valued more than brute military strength. Economic construction is being witnessed in India, China and countries of the erstwhile Soviet Union. The large population in these nations are fast emerging into major marketing opportunities for all marketers. Speed in building up sizeable presence and market strength in these regions of Asia is critical for survival in view of the dwindling or near stagnant markets of the west.

Despite the presence of many international and Indian F&F houses, it is expected that more F&F houses will attempt to penetrate the Indian market and get their share of the pie. Locally grown private Indian F&F houses too are consolidating and regrouping themselves professionally to measure up to the international houses.

With the Indian FMCG market hotting up, it is highly unlikely that local Indian F&F companies will lag behind in giving a fair competition to the global giants. It will be very interesting to watch the trajectory of this fragrant industry and savour its flavour in times to come.

Stay tuned!