CHAPTER – 1

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Processed Food Industry in India

A SHORT HISTORY OF PROCESSED FOODS

As we know from our visits that various different kinds and varieties of processed foods which are good, healthy and delicious processed foods come in many different kinds of packages and containers that protect the food from invading microbes and make them safe and available year round available in the grocery store.

The two most prominent methods of processing food are still canning and freezing as still many several kinds of protective techniques, packages, and containers exist,. The two men who deserve the thanks are Nicolas Appert and Clarence Birdsey, who truly invented these revolutionizing developments in history, Here are their stories.

Nicolas Appert

It was the end of the 1700's and the Napoleonic wars raged. As Napoleon pushed forward into Russia, the retreating Russian army left a stripped and ravaged countryside . . . and no food. As a result, Napoleon's army was suffering more casualties from scurvy, malnutrition, and starvation than from enemy muskets. The French government offered 12,000 francs to anyone who could develop a method of preserving food.

Nicolas Appert, who was an obscure candy-maker, brewer, and baker took up the challenge. He had a theory that if heat applied to fresh foods which were put in airtight containers and sufficient they would stay for long. Napoleon himself gave him the prize--after 14 years of experimentation.
Nicholas didn’t realize that while he packed his foods in bottles, corked them, and submerged them in boiling water, he was sterilizing them and stopping bacterial spoilage.

In 1810, an Englishman named Peter Durand solved the problem of bottles breaking in transit. Using tin-coated steel, Durand developed the "canister" with a soldered cover. Soon all over Britain people were eating "embalmed" meat, as they called it. The can was born.

An ambitious young man in London, William Underwood, was intrigued by the idea of canned food. In 1821 he went to Boston and established a canning plant overlooking Boston Harbor. Underwood canned all kinds of products: vegetables, fruits, and condiments. He produced grape and mushroom catsup, jams and jellies, and mustard. In 1828 he shipped milk to South America. In 1835 he imported tomato seeds from England, grew his first crop, and preserved it. This was the beginning of canning in the United States. Underwood (as in "deviled ham") is America's oldest canning company.

Nearly a century later, a man named Clarence Birdseye was on an expedition in Labrador for the U.S. Geographic Service. While on the expedition, Birdseye noticed that fish and caribou meat that had been exposed to the Arctic air was still tender and fresh tasting even when cooked months later. Knowing that mere freezing and cold storage would not preserve the quality and taste of the food, he concluded that the secret lay in rapid freezing at extremely low temperatures.

Back in the United States, Birdseye developed his "Multiplate Quick Freeze Machine" -- a crude operation. It consisted of a new garbage can of corrugated iron containing a layer
of steel plates and fitted with coils carrying a refrigerant of sodium chloride brine. Food was placed between the steel plates, frozen at -40° F and kept there for five weeks.

By 1925 Birdseye was in the frozen food business. His first product was frozen fish fillets, and he called his enterprise the General Seafoods Company. Birdseye then applied his quick-freezing principle to meats, poultry, fruits, and vegetables.

Initially unsuccessful with consumers, frozen food has since become an indispensable part of the American diet. The Birds Eye operation now thrives as part of Dean Foods Vegetable Company

**STABILITY OF PROCESSED FOODS**

**Shelf Stable Foods**

Foods that are processed - those treated by heat or a combination of other treatments which will destroy dangerous microorganisms - are shelf stable. These products, which include canned foods, bottled juices and other products that do not require refrigeration until opened, have a shelf life which is evaluated in terms of the quality of the product. These items are often referred to as non-perishable for these reasons. Canned foods can last for two years or longer, because shelf stable foods experience a very slow rate of organic change. After two years however, the product may lose taste and color.

**Product Dating**
The dating of shelf stable foods is done on a voluntary basis for all food products except infant formula. Consumers will however, see products marked with dating terms such as "best before/best-if-used-by", "sell by", and "use by".

The "best-if-used-by" date is the date recommended for best flavor and quality of a product, it is not safety date. A "sell by" or "expiration" or "use by" date tells a consumer how long a store should display the product for sale. Purchase products before the "sell by" or "use by" date. A shelf stable product can be safely used after the "sell by" date. Products displaying a "use by" date, although still safe, may not be of acceptable quality after the "use by" date.

Additionally, consumers should note that products in slightly dented cans can be consumed as long as there are no leaks and the product appears wholesome. Do not consume products from severely dented, leaking, or swollen cans or jars.

Remember, processed foods that are shelf stable can be safely consumed for two years or longer. Consumers are encouraged to contact the retailer or manufacturer with further questions.[1]

**Indian Food Processing Industry**

The Indian food market, according to the 'India Food Report 2008' is estimated at over US$ 182 billion, and accounts for about two thirds of the total Indian retail market. Further, the retail food sector in India is likely to grow from around US$ 70 billion in 2008 to US$ 150 billion by 2025, accounting for a large chunk of the world food industry, which would grow to US$ 400 billion from US$ 175 billion by 2025.
The growth of the food industry in India stems from the consistently increasing agricultural output. With the second largest arable area in the world, India is one of the key food producing countries in the world, second only to China.

The food processing industry in India is presently growing at 14 per cent against 6-7 per cent growth in 2003-04. Foreign direct investments (FDI) totaling US$ 143.80 million was put into the food processing industry in 2007-08 against US$ 5.70 million in the previous fiscal.

The food processing industry provides crucial connections between industry and agriculture. To aid the growth of the food processing industry, the government has implemented schemes including the setting up food parks, packaging centres, integrated cold chain facilities, value-added centres, and modern abattoirs.

Despite India having a huge agricultural production base, its share in exports of processed food in global trade is only 1.5 per cent; whereas the size of the global processed-food market is estimated at US$ 3.2 trillion and nearly 80 per cent of agri-cultural products in the developed countries get processed and packaged.

'Vision 2015' undertaken by the Ministry of Food Processing Industries entails:
• Three-fold growth in the size of the processed food sector.
• Increasing level of processing of perishables from 6 per cent to 20 per cent.

• Value addition to be raised from 20 per cent to 35 per cent.

• Share in global food trade to go up from 1.5 per cent to 3 per cent. [2]

Indian Food Processing Industry Size and growth

Figure 1: Indian Food Processing Industry - Size & Growth

When it comes to food processing, India is at number 2 position behind China. Food processing Industry is 5th biggest industry in India. As India is a country of foodies, it is the most promising of all the industries in terms of production, consumption and expected future growth. The size of the industry is estimated to be worth Rs. 4,00,000 and is growing annually at 14%, as shown in Fig. 1.
The Food Processing Industry is still at a very nascent stage of development considering the fact that it accounts for only 2% of the total agriculture and food produce. It can be sub-divided into the following,

<table>
<thead>
<tr>
<th>Segment</th>
<th>Products</th>
</tr>
</thead>
</table>
| **Dairy**          | • Milk Powder  
                      | • Condensed Milk  
                      | • Ice Creams  
                      | • Butter, Ghee & Cheese |
| **Fruits & Vegetables** | • Beverages, Juices, Concentrates, Pulp  
                        | • Slices  
                        | • Frozen & Dehydrated Products  
                        | • Potato Wafers / Chips, etc. |
| **Grains & Cereals** | • Flour, Starch Glucose  
                           | • Corn Flakes, Malted Foods, Vermicelli  
                           | • Beer & Malt Extracts  
                           | • Grain Based Alcohol |
| **Fisheries**      | • Frozen & Canned Products                  |
| **Meat & Poultry** | • Frozen & Packed  
                      | • Egg Powder                                |
| **Consumer Foods** | • Snacks, Namkeens  
                      | • Biscuits & Bakery Products  
                      | • Ready to Eat Foods  
                      | • Alcoholic & Non-alcoholic Beverages |

Figure 2: Segments in the Indian Food Processing Industry
So far as Bakery industry is concerned, it is one of the largest food industries as shown above. Bread, biscuits, pastries, cakes, buns and rusk are some of the bakery products fast catching up with the popularity trend in India. There are 85,000 bakery units, of which 75,000 operate in unorganized sector occupying 65% of the market share. The per capita consumption of bakery products as it stands today is 1-2 kg per annum, which compares very low with that in the advanced countries, which is 10-50 kg per annum. The urban areas hog a major share of the Indian Bakery, comprising 77.5% of the total market, owing to 2 vital factors – rising disposable incomes and time constraints in the working population residing in these areas. The Indian Bakery Market is estimated to be worth Rs. 16,500 Cr., growing at a healthy CAGR of 7.5% per annum. Out of this bread and biscuits hold about 82% of the share.

![Figure 3: Segments in Indian Bakery Industry](image)

The total production of biscuits in India is estimated to be around 20 lakh MT. The segment is estimated to contribute around Rs. 8500 Cr. of which 65% is contributed by the organized sector. It is expected to grow at 15 – 17% for the next few years. The major players in Biscuit segment are Britannia, Parle, Bakeman, ITC Foods Ltd, Surya
Food and Agro Pvt. Ltd and HUL and the major brands are Britannia, Parle, Bakeman, Priya Gold, Elite, Cremica, Dukes, Anupam and Horlicks. The per capita consumption of Biscuits in India is hardly 2 Kg. Yet, India is ranked 3rd after USA and China in the production of biscuits. The penetration of Biscuits in the urban and rural markets is 85% and 55% respectively.

Bread production is estimated to be 3.75 million tonnes p.a. which would be worth approximately Rs. 4500 Cr. of which 55% is contributed by the organized sector. The growth rate for the last 5 years is around 6% (by volume). In this segment the 2 major players are Modern and Britannia. Besides Britannia and Modern, there are 25 medium scale and 1800 SSI units, comprising “organised sector”. The “unorganised sector” has 75,000 bakeries. South India consumes 32% of the bread produced, followed by North 27%, West 23% and East 18%. The bread industry is expected to register rapid growth driven by consumers’ need for convenient food options for breakfast as well as increased propensity to snack. Even though, consumption of milk bread continues to dominate, segments such as brown bread and fruit bread have been growing rapidly in the recent past. Growth of the food service industry is also expected to catapult the growth of bread and bread based products like burgers, sandwiches and pizzas.

Thus, “freshness” being the primary buying criterion for purchasing any bakery product, the large organized players always find it a challenging task as of now. In future, when other factors like convenience, health and hygiene start prevailing over the buyers’ purchase decision, the composition of the industry will change for sure in favour of the organized players. [3]
Scope of Food Processing in India

Present Status and Future Prospects of Indian Food Processing Industries

The food processing sector is a highly fragmented industry, it widely comprises of the following sub-segments: fruits and vegetables, milk and milk products, beer and alcoholic beverages, meat and poultry, marine products, grain processing, packaged or convenience food and packaged drinks. A huge number of entrepreneurs in this industry are small in terms of their production and operations, and are largely concentrated in the unorganized segment. This segment accounts for more than 70% of the output in terms of volume and 50% in terms of value. Though the organized sector seems comparatively small, it is growing at a much faster pace.

Source: D&B Research

Structure of the Indian Food Processing Industry
Food Processing Units in Organized Sector (numbers)

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour Mills</td>
<td>516</td>
</tr>
<tr>
<td>Fish Processing Units</td>
<td>568 (+482 cold storage units)</td>
</tr>
<tr>
<td>Fruit &amp; Vegetable processing units</td>
<td>5293</td>
</tr>
<tr>
<td>Meat Processing units</td>
<td>171</td>
</tr>
<tr>
<td>Sweetened &amp; aerated water units</td>
<td>656</td>
</tr>
<tr>
<td>Milk products units</td>
<td>266</td>
</tr>
<tr>
<td>Sugar Mills</td>
<td>429</td>
</tr>
<tr>
<td>Solvent extract units</td>
<td>725</td>
</tr>
<tr>
<td>Rice mills</td>
<td>139208</td>
</tr>
<tr>
<td>Modernised rice mills</td>
<td>35088</td>
</tr>
</tbody>
</table>

Source: Ministry of Food Processing Industries, Annual Report 2003-04

Industry Sub-Segments

Fruits & Vegetables

Exports of Processed Fruits & Vegetables (Quantity in MT, Value in Rs Mn)
Consumer Foods

This segment comprises of packaged foods, aerated soft drinks, packaged drinking water and alcoholic beverages.

Packaged / Convenience Foods

Consumer food industry mainly consists of ready-to-eat and ready-to-cook products, salted snacks, chips, pasta products, cocoa based products, bakery products, biscuits, soft drinks, etc.

There are around 60,000 bakeries, several pasta food units and 20,000 traditional food units and in India. The bakery industry is among the few processed food segments whose production has been increasing consistently in the country in the last few years. Products of bakery include bread, biscuits, pastries, cakes, buns, rusk etc. This activity is mostly concentrated in the unorganized sector. Bread and biscuits constitute the largest segment of consumer foods with an annual production of around 4.00 million tonnes. Bread manufacturing is reserved for the small-scale sector. Out of the total production of bread,
40% is produced in the organized sector and remaining 60% in the unorganised sector, in the production of biscuits the share of unorganized sector is about 80%.

**Exports of Consumer Foods** (Quantity in MT, Value in Rs Mn)

<table>
<thead>
<tr>
<th></th>
<th>2001-02</th>
<th>2004-05</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity</td>
<td>Value</td>
<td>Quantity</td>
</tr>
<tr>
<td>Groundnuts</td>
<td>112813</td>
<td>2509</td>
<td>177115</td>
</tr>
<tr>
<td>Guar gum</td>
<td>117883</td>
<td>4031</td>
<td>129648</td>
</tr>
<tr>
<td>Jaggery &amp; Confectionery</td>
<td>365893</td>
<td>4365</td>
<td>35549</td>
</tr>
<tr>
<td>Cocoa Products</td>
<td>1293</td>
<td>129</td>
<td>2274</td>
</tr>
<tr>
<td>Cereal Preparations</td>
<td>38087</td>
<td>2247</td>
<td>49487</td>
</tr>
<tr>
<td>Alcoholic &amp; Non-Alcoholic Beverages</td>
<td>49672</td>
<td>1183</td>
<td>30045</td>
</tr>
<tr>
<td>Miscellaneous Preparations</td>
<td>23189</td>
<td>1373</td>
<td>52514</td>
</tr>
<tr>
<td>Milled Products</td>
<td>322347</td>
<td>1964</td>
<td>140123</td>
</tr>
</tbody>
</table>

Source: Ministry of Food Processing Industries, Annual Report 2005-06

**Constraints & Drivers of Growth**

Changing lifestyles, food habits, organized food retail and urbanization are the key factors for processed foods in India, these are post-liberalization trends and they give boost to the sector.

There has been a notable change in consumption pattern in India. Unlike earlier, now the share and growth rates for fruits, vegetables, meats and dairy have gone higher compared to cereals and pulses. Such a shift implies a need to diversify the food production base to match the changing consumption preferences.
Also in developed countries it has been observed that there has been a shift from carbohydrate staple to animal sources and sugar. Going by this pattern, in future, there will be demand for prepared meals, snack foods and convenience foods and further on the demand would shift towards functional, organic and diet foods.

Some of the key constraints identified by the food processing industry include:

- Poor infrastructure in terms of cold storage, warehousing, etc
- Inadequate quality control and testing infrastructure
- Inefficient supply chain and involvement of middlemen
- High transportation and inventory carrying cost
- Affordability, cultural and regional preference of fresh food
- High taxation
- High packaging cost

Mounting domestic demand for processed food is anticipated to speed up growth in the Indian food processing sector, despite the gloomy economic environment, says RNCOS report. According to the latest research report, “Indian Food and Drinks Market: Emerging Opportunities”, by RNCOS, buoyed by the growing domestic demand, rapid urbanization and a growing middle class population, the Indian processed food industry is projected to experience rapid growth in near term. “The Indian food processing industry will not be affected by the current economic crisis as food like milk, fruits and vegetables are the basic necessity for human survival”, says an analyst at RNCOS.
The industry will continue to see fast growth as the domestic consumption of processed food remains low, mainly due to large rural population with low per capita income and conventional consumption habits.

However, changing consumer demographics and an anticipated shift in consumption practices led by western cuisine, particularly among the youth, will drive the Indian food processing industry in the next few years, says the report.

Rising urbanization and income levels are also helping the Indian food processing industry to prosper. The research indicates that demand pattern for food in urban India largely differs from that of rural India. This is mainly in part due to the fact that urban people generally have higher purchasing power and this leads to greater demand for high-value processed food. Additionally, rapid evolvement of modernized food retail formats, including hypermarkets, supermarkets and mega retail food stores in malls, is also propelling the processed food market. Such stores facilitate greater exposure and visibility of processed food to consumers, and offer quality and hygienic services.

Apart from the Indian food processing sector, “Indian Food and Drinks Market: Emerging Opportunities” also gives extensive analysis on various other sectors, such as packaged food, functional food and storage facilities. It also describes government and investment policies fuelling growth in the food and drinks market of India. The research highlights various opportunity areas coupled with briefing on the factors which are blocking the market growth and require immediate attention.
Besides this, the report provides extensive research and prudent analysis on various food & drinks segments, including wine, processed food, organic food and snack food, and analyzes the basic food and drinks consumption trends of Indian consumers. [7]

**SWOT Analysis of Food–Processing Industry**

**Strengths**

- Abundant availability of raw material
- Priority sector status for agro-processing given by the central Government
- Vast network of manufacturing facilities all over the country
- Vast domestic market

**Weaknesses**

- Low availability of adequate infrastructural facilities
- Lack of adequate quality control and testing methods as per international standards
- Inefficient supply chain due to a large number of intermediaries
- High requirement of working capital.
- Inadequately developed linkages between R&D labs and industry.
- Seasonality of raw material

**Opportunities**

- Large crop and material base offering a vast potential for agro processing activities
- Setting of SEZ/AEZ and food parks for providing added incentive to develop greenfield projects
• Rising income levels and changing consumption patterns
• Favourable demographic profile and changing lifestyles
• Integration of development in contemporary technologies such as electronics, material science, bio-technology etc. offer vast scope for rapid improvement and progress
• Opening of global markets

**Threats**

• Affordability and cultural preferences of fresh food
• High inventory carrying cost
• High taxation
• High packaging cost

**Policy Initiatives**

• Most of the processed food items have been exempted from the purview of licensing under the Industries (Development and regulation) Act, 1951, except items reserved for small-scale sector and alcoholic beverages.
• Automatic approval for foreign equity upto 100 percent is available for most of the processed food items except alcohol, beer and those reserved for small-scale sector subject to certain conditions.
• Food processing industries were included in the list of priority sector for bank lending in 1999.
• In the budget of 2001-2002, excise duty on processed fruit and vegetables has been brought down from 16 percent to zero level in the budget.
• In the 2004-2005 budget, income tax holiday and other concessions announced for certain food processing of India sectors.

• Licensing powers delegated to regional offices under Full Product Order, 1955.

**In terms of policy support, the ministry of food processing has taken the following initiatives:**

• Formulation of the National Food Processing Policy

• Complete de-licensing, excluding for alcoholic beverages

• Declared as priority sector for lending in 1999

• 100% FDI on automatic route

• Excise duty waived on fruits and vegetables processing from 2000 – 01

• Income tax holiday for fruits and vegetables processing from 2004 – 05

• Customs duty reduced on freezer van from 20% to 10% from 2005 – 06

• Implementation of Fruit Products Order

• Implementation of Meat Food Products Order

• Enactment of FSS Bill 2005

• Food Safety and Standards Bill, 2005

**Apart from these initiatives, the Centre has requested state Governments to undertake the following reforms:**

• Amendment to the APMC Act

• Lowering of VAT rates

• Declaring the industry as seasonal

• Integrate the promotional structure
Infrastructural Development

The Policy will facilitate:

- Establishment of cold chain, low cost pre-cooling facilities near farms, cold stores and grading, sorting, packing facilities to reduce wastage, improve quality and shelf life of products.

- Application of biotechnology, remote sensing technology, energy saving technologies and technologies for environmental protection.

- Building up a strong infrastructural base for production of value added products with special emphasis on food safety and quality matching international standards.

- Development of Packaging Technologies for individual products, especially cut-fruits & vegetables, so as to increase their shelf life and improve consumer acceptance both in the domestic and international markets.

- Development of new technologies in Food Processing & Packaging and also to provide for the mechanism to facilitate quick transfer of technologies to field through a net work of R&D Institutions having a Central Institute at the national level with satellite institutions located strategically in various regions to cover up the whole Country and to make available the required testing facilities. This could be done by establishing a new institution or strengthening an existing one.
• Development of area-specific Agro Food Parks dedicated to processing of the predominant produce of the area e.g., apple in J&K, pineapple in North East, Lichi in Bihar, Mango in Maharashtra and Andhra Pradesh etc. etc.

• Development of Anchor Industrial Centre and/or linkage with Anchor Industrial Units having network of small processing units.

• Development of Agro-industrial multi-products units capable of processing a cluster of trans-seasonal produces.

**Backward Linkage**

The Policy will promote:

• Establishment of a sustained and lasting linkage between the farmers and the processors based on mutual trust, understanding and benefits by utilizing the existing infrastructure of cooperative, village panchayats and such other institutions.

• Mechanism to reduce the gap between the farm gate price of agro-produce and the final price paid by the consumer.

• Development of Futures Market in the best interest of both the farmers and the processors ensuring a minimum price stability to the farmer and a sustained supply of raw material to the processor.
Setting up of an Equalization Fund to ensure sustained supply of raw material at a particular price level and at the same time to plough back the savings occurring in the eventuality of lower price to make the Fund self-regenerative.

**Forward Linkage**

The policy will promote:

- Establishment of a strong linkage between the processor and the market to effect cost economies by elimination of avoidable intermediaries.

- Establishment of marketing network with an apex body to ensure proper marketing of processed products.

- Development of marketing capabilities both with regard to infrastructure and quality in order to promote competitive capabilities to face not only the WTO challenge but to undertake exports in a big way.

Given the trends in the Indian food and beverage sector including key industry consideration, it is imperative for the Indian industry to leverage the emerging opportunities at once. These could be:

- Exploitation of the huge untapped potential in processed foods.
• Opportunities presented by contract farming, captive supplies of raw materials, disintermediation and direct access to farmers, availability of new and improved seeds and farm technology.

• Value addition to unprocessed categories of food such as dairy, fruits and vegetable, staples and edible oils.

• Exploitation of increasing health and safety awareness of the Indian consumer - this would pave the way for value added products on a health platform.

• Investment in supply chain in order to improve costs, tighten supplies and minimize wastage.

• Investment in better packaging and cold chain infrastructure will aid the processed food and beverage sector as these would aid in processing of fruits and vegetables.

• Exploration of appropriate regional branding strategies in order to appeal to the deep rooted traditions, values and customs of the consumer

• Taking advantage of the inherent ethnic tastes and food habits of the Indian consumer -- this provides the local food players a distinct advantage over foreign entrants into the sector and poses an entry barrier for the latter
• Exploitation of the increasing consumerism fuelled by new job opportunities, larger disposable incomes and the emerging boom in modern retail trade.

• Opportunities for growth through the inorganic route, both domestically and outbound this would provide access to new product categories, brands, markets and new technologies.

• The SEZ /AEZ opportunity would also provide players the added incentive to develop greenfield projects within these zones and enjoy additional fiscal benefits.

The Indian Foods & Beverage industry is poised for a significant leap forward -- these are interesting times and continued success will depend on a proper understanding of the landscape and challenges therein, quickly exploiting emerging opportunities, skillful execution of strategic mergers and acquisitions and effecting a seamless organisation to evolve into truly global players.

**Government Initiatives**
The Government of India has identified the Food Processing Industry sector as a high priority area. It has given a number of fiscal relief and incentives to encourage commercialization and value addition to agricultural produce. As per a study conducted by McKinsey and Confederation of Indian Industry (CII), the turnover of the total food
market is approximately USD 69.4 billion out of which value-added food products comprise USD 22.2 billion.

The Government has also approved proposals for joint ventures; foreign collaboration, industrial licenses and 100 percent export oriented units envisaging an investment of USD 4.80 billion during the same period. Out of this, foreign investment is over USD 18.2 billion.

India is also considering investing another USD 22.97m in at least 10 mega food parks in the country. The move is besides working towards offering 100 percent foreign direct investment and income-tax benefits to the sector. According to Indian Credit Rating Agency (ICRA), the processed food market accounts for 32 percent of the total food market.

In order to facilitate and exploit the growth of the food sector, government on its part has undertaken several reforms such as amendment of Agricultural Produce Market Committee Act, rationalisation of food laws, implementation of National Horticulture Mission, establishment of mega food parks and others.

However, despite the government’s perpetual efforts to provide the much-needed stimulus to the sector, processing activity is at a nascent stage, with minimal penetration and low productivity level.
India is a leading producer of food items having a large production base for inputs. Despite India being a leading food producer, its processing yields are the lowest among the BRIC (Brazil, Russia, India and China) countries.

**Indian and Foreign Trade**

**Investments**

The food-processing sector needs investment of about USD 28-35 billion to meet the changing food demands in India, according to industry estimates. The outlay for the food-processing segment has been increased from USD 19.5m in ’04-05 to USD 41.4 million in the next year, more than twice the earlier amount.

Foreign direct investment (FDI) in the country’s food sector is poised to hit the USD 3-billion mark. In the last one year alone, FDI approvals in food processing have doubled.

Add to this the USD 55 million that has been invested in sugar and cooking oil companies, and you can see how the changing diet of upwardly mobile India along with the new mega food parks are becoming dishy to overseas investors. Foreign direct investment in food already beats the money being pumped into the far-more-glamorous hotels and tourism industry.

According to latest industry ministry data, the cumulative FDI inflow in food processing reached USD 2,804 million in March ’06. In ’05-06, the sector received approvals worth USD 41million. This figure is almost double the USD 22million approved in ’04-05.
Foreign investors are keen in investing in the country. Recently, India has received an encouraging response from investors in the UK for establishing joint quality control testing facilities for agriculture products and establishing cold storage facilities in the country, Minister of State for Food Processing Industries Subodh Kant Sahai said.

Between 1991 to November 2006 the total inflow of foreign direct investment in the food-processing sector accounts Rs 52.7 bn (US$ 1.2 bn). The highest investment towards the food-processing sector in a single year was recorded in 2001-02 amounting to Rs 10 bn. During the last five years, FDI witnessed an inflow of over Rs 24 bn of foreign investment.

During the last five years Maharashtra received the highest share of FDI in food processing. The dairy and consumer industries received FDI worth Rs 2.7 bn each as foreign investment. Countries of European Union such as Netherlands, Germany, Italy and France contribute nearly 30% of FDI in food-processing sector. Perfetti, Cadbury, Godrej-Pilsbury, Nutricia International, Manjini Comaco are some of the successful ventures from EU countries.

**Investment Opportunities**

**The areas in investment opportunities in food processing are as follows**

- Fruits and Vegetables
- Fisheries
- Meat
- Grains
- Packaged and convenience goods
- Establishing infrastructure, cold chain, etc.
Reasons for investing in Food Processing Sector
1. Vast source of raw material

- India is one of the largest producers of wheat and rice.

- Coconuts, cashew nuts, ginger, turmeric and black pepper is widely grown in some parts of the country.

- India is the second largest producer of groundnuts, fruits and vegetables. That it accounts for about 10 per cent of the world's fruits production with the country topping in the production of mangoes and bananas.

- Due to the high processing levels milk products offer a significant opportunity in India. India is the world's largest producer of milk owing to the strong business models formed through cooperative movements in the country. Milk and related products account for 17% of India's total expenditure on food. This segment enjoys liberal regulations as all milk products except malted foods are automatically allowed 51% foreign equity participation and all exports of dairy products are freely allowed.

- Alcoholic beverages have been categorized as the new high opportunity sector in India. Liquor manufactured in India is categorized as Indian Made Foreign Liquor (IMFL). The sector is still barred from the import of potable alcohol as it is subject to government licensing. In the meanwhile, India has recently started producing wine for domestic consumption.

- Meat and poultry has also gained popularity due to the emergence of producers that have integrated breeding, feed milling, contract growing and marketing facilities for improved productivity. Meat, fish, and poultry are in rural areas as they are easily affordable and provide necessary nutrients. India has the potential to be a leading global food supplier if it employs the right marketing strategies and creates an efficient supply chain.
2. Conventional farming to commercial farming
In recent years, there has been a shift from conventional farming of food grains to horticulture which include fruits, vegetables, ornamental crops, medicinal and aromatic plants, spices, plantation crops which include coconut, cashew nuts and cocoa and allied activities.

3. Market in the form of large urban middle class
With a huge population of 1.08 billion and population growth of about 1.6% per annum, India is a large and growing market for food products. Its 350 million strong urban middle class with its changing food habits poses a huge market for agricultural products and processed food.

4. Low Production cost
The relatively low-cost but skilled workforce can be effectively utilized to set up large, low-cost production bases for domestic and export markets.

5. Change in consumption patterns
Increasing incomes are always accompanied by a change in the food habits. Over the last three decades in India a shift in food habits have been observed. The report observes that the proportionate expenditure on cereals, pulses, edible oil, sugar, salt and spices declines as households climb the expenditure classes in urban India while the opposite happens in the case of milk and milk products, meat, egg and fish, fruits and beverages.

For instance, According to report of ICRA the proportionate expenditure on staples like cereals, grams and pulses declined from 45 per cent to 44 per cent in rural India while the figure settled at 32 per cent of the total expenditure on food in urban India.

A large part of this shift in consumption is driven by the processed food market, which accounts for 32 per cent of the total food market. It accounts for US$ 29.4 billion, in a total estimated market of US$ 91.66 billion. The food processing industry is one of the
largest industries in India -- it is ranked fifth in terms of production, consumption, export and expected growth.

According to the Confederation of Indian Industry (CII) the food-processing sector has the potential of attracting US$ 33 billion of investment in 10 years and generate employment of 9 million person-days.

6. Government Assistance
The Government has introduced several schemes to provide financial assistance for setting up and modernizing of food processing units, creation of infrastructure, support for research and development and human resource development in addition to other promotional measures to encourage the growth of the processed food sector.

7. Foreign Direct Investment
Foreign direct investment (FDI) in the country's food sector is poised to hit the US$ 3-billion mark in coming years. FDI approvals in food processing have doubled in last one year alone. The cumulative FDI inflow in food processing reached US$ 2,804 million in March '06. In '05-06, the sector received approvals worth US$ 41 million. This figure is almost double the US$ 22 million approved in 2004-05.

The US-based private equity fund, New Vernon Private Equity Limited (NVPEL), has decided to invest Rs 45 crore in Kochi-based spice major, Eastern Condiments, which is the flagship company of Eastern Group.
8. Food Parks

In an effort to boost the food sector, the Government is working on agri zones and the concept of mega food parks. Twenty such mega parks will come are proposed across the country in various cities to attract Foreign Direct Investment (FDI) in the food-processing sector.

The Government has released a total assistance of US$ 23 million to implement the Food Parks Scheme. It has so far approved 50 food parks for assistance across the country. The Centre also plans US$ 22 billion subsidy for mega food processing parks.

9. Conducive food processing policy environment

The national policy on food processing aims at increasing the level of food processing from the present 2 per cent to 10 per cent by 2010 and 25 per cent by 2025. The government has allowed 100 per cent FDI in processing sector.

The Policy will seek to create an appropriate environment for entrepreneurs to set up Food Processing Industries through:

- Fiscal initiatives and interventions like rationalization of tax structure on fresh foods as well as processed foods and machinery used for the production of processed foods.
- A concerted promotion campaign to create market for processed foods by providing financial assistance to Industry Associations, NGOs/Cooperatives, Private Sector Units, State Government Organization for undertaking generic market promotion.
- Harmonization and simplification of food laws by an appropriate enactment to cover all provisions relating to food products so that the existing system of multiple laws is replaced and also covering issues concerning standards Nutrition, Merit goods, futures marketing, equalisation fund etc.

- Efforts to expand the availability of the right kind and quality of raw material round the year by increasing production, improving productivity.

- Strengthening of database and market intelligence system through studies and surveys to be conducted in various States to enable planned investment in the appropriate sector matching with the availability of raw material and marketability of processed products.

- Strengthening extension services and to the farmers and co-operatives in the areas of post harvest management of agro-produce to encourage creation of pre-processing facilities near the farms like washing, fumigation, packaging etc.

- Efforts to encourage setting up of agro-processing facilities as close to the area of production as possible to avoid wastage and reduce transportation cost.

- Promotion of investments, both foreign and domestic.

Simplification of documentation and procedures under taxation laws to avoid unnecessary harassment arising out of mere technicalities.
Exports

There has been an encouragement for new processing capacities for agro-food products through its various policy initiatives and plan schemes providing financial incentives for setting up of new units and modernization of existing units from the Ministry of Food Processing Industries.

Export of Processed Food products (2004-05)

<table>
<thead>
<tr>
<th>Items</th>
<th>Quantity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processed Fruits and Vegetables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried and Preserved Vegetables</td>
<td>351034.32</td>
<td>765.75</td>
</tr>
<tr>
<td>Mango Pulp</td>
<td>90988.6</td>
<td>300.86</td>
</tr>
<tr>
<td>Pickle and Chutney</td>
<td>67193.29</td>
<td>120.58</td>
</tr>
<tr>
<td>Other Processed fruits and Vegetables</td>
<td>80760.5</td>
<td>275.53</td>
</tr>
<tr>
<td>Total for Processed Fruits and Vegetables</td>
<td>589976.71</td>
<td>1462.72</td>
</tr>
<tr>
<td><strong>Animal Products</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffalo Meat</td>
<td>306970.81</td>
<td>1615.59</td>
</tr>
<tr>
<td>Sheep/ Goat Meat</td>
<td>8885.28</td>
<td>79.36</td>
</tr>
<tr>
<td>Poultry Products</td>
<td>264607.54</td>
<td>154.11</td>
</tr>
<tr>
<td>Dairy Products</td>
<td>48426.79</td>
<td>389.14</td>
</tr>
<tr>
<td>Animal Casings</td>
<td>552.33</td>
<td>12.57</td>
</tr>
<tr>
<td>Processed Meat</td>
<td>107.45</td>
<td>1.56</td>
</tr>
<tr>
<td>Total for Animal Products</td>
<td>629550.2</td>
<td>2252.33</td>
</tr>
<tr>
<td><strong>Other Processed Foods</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundnuts</td>
<td>177114.96</td>
<td>503.00</td>
</tr>
<tr>
<td>Guargum</td>
<td>129648.47</td>
<td>664.28</td>
</tr>
<tr>
<td>Jaggery and Confectionary</td>
<td>35549.29</td>
<td>77.00</td>
</tr>
<tr>
<td>Cocoa Products</td>
<td>2273.85</td>
<td>27.30</td>
</tr>
</tbody>
</table>
India exported processed foods worth €2.6 billion in 2006/07

The Minister of State for Food Processing Industries, Shri Subodh Kant Sahai, in Rajya Sabha has informed recently that the export of processed food items was 14501 crore Rs. (approx. €2.6 billion) in 2006-07, after 12329.85 Rs crore the year earlier.

Factors Affecting growth

Desire for quality time

In a family where both the members of the family leave the home and go out for work, there is always a constraint on time. This gives rise to need for quality time, which translates into demand for convenience products and services. Instant food, home delivery, ATMs, and crèches are some of the products and services that attempt to address this need of easing the lifestyle.

Increased awareness about personal health

LG has presented its Microwaves as ‘Health wave Systems’ in the electronic market. Britannia has renovated its product portfolio around the health and hygiene platform. Fitness and health clubs have mushroomed all over the cities across the country. Most of

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereal Preparations</td>
<td>49486.85</td>
<td>277.77</td>
</tr>
<tr>
<td>Alcoholic and Non-Alcoholic Beverages</td>
<td>30045.49</td>
<td>113.78</td>
</tr>
<tr>
<td>Miscellaneous Preparations</td>
<td>52513.73</td>
<td>224.36</td>
</tr>
<tr>
<td>Milled Products</td>
<td>140123.27</td>
<td>144.85</td>
</tr>
<tr>
<td>Total for Other Processed Food</td>
<td>616755.91</td>
<td>2032.34</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>1836282.82</strong></td>
<td><strong>5747.39</strong></td>
</tr>
</tbody>
</table>
the people want to look fit and at the same time don’t want to give up the fast and junk food habits. This trend can be noticed even amongst upper class and celebrities and models.

The Indian consumer is now more health-conscious than ever before. This has seen a rise in products being placed and presented on health platform.

**Shift from self-denial to affordable indulgence**

Indians are considered to be price cautious and have always practiced caution in financial matters. This has contributed to a high personal savings rate of around 24%. In the recent past, there has been a significant shift from this practice. Customers are now ready to spend lavishly.

**Exploring the Rural Market**

After Urban market the companies are now shifting their attention towards the rural consumers. With the increase in purchasing power of rural consumers due the favourable climatic conditions, good harvests and government initiatives towards rural India the prospects of the food industry in rural India increases. The rural market is yet to be explored in this sector at a large extent where lies potential and seems to be full of opportunities. Increased literacy levels and greater connectivity are the major homogeneous aspirations and needs.

The consumer today has more choice than ever before. Given the media exposure and greater awareness, the consumer demands not only quality at world standards at ‘desk’
prices but maximum out of it. This has not only characterized a shift in economic patterns but also in the cultural fibre of the Indian consumer.

The modern family set-up is witnessing a notable change from a strict, authoritarian structure to a more liberal and democratic set-up.

The In NUF the women graduates are coming out of their houses leaving the legacy of house-wives and managing offices. The man remains the breadwinner but is more adaptable. In such a situation marketers have to target the family as a unit in an increasingly individualized society to boost the sale. [4]

**Challenges in Food Processing**

The challenges that the sector is facing are diverse and demanding and must be dealt on several fronts to obtain optimum advantages in the market. The **Federation of Indian Chamber of Commerce and Industries (FICCI)** through its in-house research recognised some major factors obstructing the growth of the sector, which are as follows:

Absence of comprehensive national level policy

- Unavailability of trained manpower
- Inadequate processing plants with cost-effective technologies
- Lack of cost-effective food machinery and packaging technologies
- Constrains in raw material production
- Inadequate infrastructural facilities
- Access to credit is a major issue
- Ineffective market intelligence activity
- Inconsistency in Central and state policies
The pan India survey conducted across the entire value chain reached 250 top companies and a total of 125 responses were received. An analysis of the findings identifies the following top five challenges:

<table>
<thead>
<tr>
<th>Top five challenges identified</th>
<th>Weighted percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inadequate infrastructural facilities</td>
<td>44.25</td>
</tr>
<tr>
<td>2. Absence of comprehensive national level policy</td>
<td>34.46</td>
</tr>
<tr>
<td>3. Lack of stringency in food safety laws</td>
<td>28.51</td>
</tr>
<tr>
<td>4. Inconsistency in Central and state policies</td>
<td>28.08</td>
</tr>
<tr>
<td>5. Unavailability of trained manpower</td>
<td>25.53</td>
</tr>
</tbody>
</table>

**Major Challenges for the Indian Food Industry**

- Consumer education that processed foods can be more nutritious
- Low price-elasticity for processed food products
- Need for distribution network and cold chain
- Backward-forward integration from farm to consumers
- Development of marketing channels
- Development of linkages between industry, government and institutions
- Taxation in line with other nations
- Streamlining of food laws

Unprocessed foods are susceptible to spoilage by biochemical processes, microbial attack and infestation. The right post harvest practices such as good processing techniques, and proper packaging, transportation and storage (of even processed foods) can play a significant role in reducing spoilage and extending shelf life. The challenges in
processing lie in retaining the nutritional value, flavour, aroma, and texture of foods, and presenting them in near natural form with added conveniences. However, such qualities cannot be readily quantified and correlated with physico-chemical parameters, sensory evaluations providing the only means of benchmarking. Besides, processed foods need to be offered to the consumer in hygienic and attractive packaging, and at low incremental costs.

The challenges for the food preservation, distribution and processing sectors are diverse and demanding, and need to be addressed on several fronts to derive maximum market benefits. Presently, the organizations addressing the educational and R & D requirements are too few, and there is a pressing need for supplementing their efforts. In the emerging scenario, the Food Engineering professional needs to develop sufficient awareness and appreciation of the relevant principles of life sciences, and physical sciences, as well as of a wide variety of other topics including: nutrition, preservation and storage techniques, processing unit operations, bio-processing, waste management, distribution and supply chain management, food laws and regulations and so on. Besides, the professional needs to develop an appreciation of R&D and innovation in critical technology areas such as: newer or novel process development in preservation and storage techniques, rheology, colloids and dispersal systems, packaging-polymers and composites, sensors for detection and process control, bioprocess engineering, and so on.[6]
Retail in Food Processing
The size of the Indian urban food market is estimated at Rs 350,000 crore. The domestic market for processed food is huge and fast growing. The retail boom will create a huge demand for the food-processing sector in the coming years. Little wonder that 2007 has been designated the Year of Food Technology.

The private sector is yet to realize its full potential in the food-retailing sector, as the market is still to explore. Though, it has now started discovering the money there is to be made in the urban food retailing market.

Assured Market
Urban centres have the potential of development process. But they do not produce food as they lack agricultural land; on contrary the rural areas do. In that sense, the urban areas provide an assured market for the food produced by farmers. The urban food marketing system thus assumes considerable importance for both feeding the urban population and helping farmers.

There are certain distinct characteristics of urban food demand. The urban population generally has a higher purchasing power. The rising average income is leading to greater demand for high-value processed food. A considerable number of urban women work, creating a demand for heat-and-serve foods.
The urban population density is high and this demands a chain or a network of retail outlets. Indian food retailing is poised for a quantum leap. Not only are newer names set to dot the retail landscape but also such new formats, as hyper-and super-markets are to emerge.

The key drivers for increased demand in value-added processed food products are: a) growth in consumer class; b) change in lifestyle characterized by expanding urban population, increased number of nuclear and dual-income families; c) change in attitudes and tastes with increasing modernization and to a lesser extent westernization of tastes, particularly, of the youth; d) low penetration rates; and e) ability to offset seasonal supply-and-demand effects in fresh products.

It has been estimated that during the Eleventh Plan period, an investment of Rs 1 lakh-crore is expected in the food-processing sector. Realizing the need for a regulatory framework for the retailing sector, the government has merged 16 laws relating to the food-processing sector into one piece of legislation and this is expected to be put in place from the 2007-08 financial year.

**Stress on Marketing**
To tap into the huge market for processed foods, an efficient marketing system is necessary to bring about demand-driven production; marketing becomes the key to catalyzing agricultural development and with that fostering inclusive growth. Besides, it reduces intermediaries, increases farmers’ realization and lowers consumer prices.
An efficient marketing system can reduce post-harvest losses, promote graded processing, packaging services and food safety practices, induce demand-driven production, enable high value addition and facilitate exports.

Marketing reforms are needed, as they are critical to development of the potential urban food demand. The National Commission on Farmers, headed by Dr M.S. Swaminathan, has suggested encouraging public-private partnership besides encouraging private sector investments to tap this huge potential.

At present, there are 7,521 regulated markets. Most of these lack critical infrastructure. Therefore, massive investment is needed to provide critical agricultural marketing infrastructure. It is estimated that at least Rs 12,234 crore is needed for the regulated markets. Initiative has to be taken to promote public-private partnerships as they ensure efficient resource utilisation and better management practices. There are many examples of successful public-private partnerships. Safal market in Karnataka is an instance of the modernisation of wholesale markets. ITC's e-Chaupal, Haryali Kisan Bazaar, Mahindra Subh Labh, Cargil Farmgate Business and Tata Kisan Sansar are all initiatives of marketing distribution in the PPP format. Besides, commodity exchanges and futures markets have come up in the form of National Commodity and Derivative Exchange Ltd (NCDEX) and Multi-Commodity Exchange Limited (MCX).
Incentives to Corporates
To encourage the private sector to make investments in marketing infrastructure on the required scale, a favorable regulatory environment needs to be created so as to attract large corporates.

This would include: a) liberalized credit norms to entrepreneurs for agricultural marketing activities; b) changes in the market regulatory framework to allow private entrepreneurs establish market yards and other regulatory facilities; c) changes in the co-operative laws to allow farmers' co-operatives to work along corporate lines and compete with private trade; d) review of several legal instruments to facilitate the entry of entrepreneurs in marketing activities; and e) provisions to allow private entrepreneurs to cover price and yield risks for farmers.

The emergence of organized retailing in recent years and the creation of quality retail space have led to an increased demand for quality produce and thereby investments in supply chain infrastructure by private players.

Reliance Initiative
A visit to the fruits and vegetables stores of a leading corporate would reveal the depth and width of the market for processed foods. In fact, the company opened more than 17 such stores in one city alone. The company also plans to enter into agri-horticulture and the processed food sector. Subsequently, a subsidiary is to market agri-horticultural products across the country. Conceptually, the company is creating a virtuous circle of prosperity by bringing farmers and consumers together in a win-win partnership.
The retail business should partner with farmers, logistics operators and traders to enhance their purchasing power. A supply chain, logistics and information technology infrastructure would string the whole plan together.

Evolving System
It has taken some time but finally it seems that the evolution of organized retailing in food products is on in India. Many retail start-ups promised a lot. But failed. Through trial and error, a sustainable business model is evolving. A significant number of new businesses are poised for a major surge.

Notably, private investments in marketing of processed food for urban centres have reached the inflection point with several large corporates beginning to invest significantly. Each of these retail businesses has created a sustainable model of its own. In fact, each has developed a model unique to the Indian context. The entry of large business conglomerates is likely to attract greater investments and create a cascading effect across the SME segment of the food and agri-space.

Retail sector pushes for reforms in food processing
According to The Times of India, New Delhi dated February 09, 2007: Major players in the retail sector are pushing hard for abolition of or amendment to the Agricultural Produce Marketing Commission Act to speed up growth in the food processing industry, which is expected to bring in a major chunk of their moolah.
Global consultants Dun & Bradstreet last year estimated that India wastes roughly $13 billion worth of farm products, including dairy items, annually because of inadequate processing and cold-storage facilities. A FICCI study now says that despite being the second-biggest food producer in the world after China, India's share in the $6.2-billion global processed food market stands at less than 1%, leaving a huge scope for growth.

The study identifies the APMC Act as one of the major hurdles impeding growth as it does not allow processing units to store fruits or vegetables for more than a month.

The study also suggests a 10-year tax holiday, excise relief, fiscal incentives for cold-chain setups and a regulatory mechanism. Special incentives have been suggested for investors who enter all levels of processing industry in an integrated manner and for those providing one or more services. An excise exemption has also been sought on equipment and refrigerated trucks to attract investments and keep prices down.

Available data pegs Indian food exports in 1998 at $5.8 billion against a world total of $438 billion. At the start of 2000, the Indian food industry had a turnover of Rs 140,000 crore. This indicates a vast scope for both investors and exporters. India processes only 2% of the fruits and vegetables it produces annually.

Wal-Mart, the world’s number one company in the fortune 500 list has finally firmed up a plan to enter India through a 50:50 joint venture with Bharti Telecom. Bharti Group had been discussing their retail business with the Tesco for quite sometime and it was
reported earlier that they are going together. Only recently Bharti has withdrawn from that discussion and the very next day announced the formation of JV with Wal-Mart. This only indicates that the discussion continued by Bharti parallely with both Tesco and Wal-Mart and finally the decision was taken in favour of Wal-Mart who were very actively scouting around for the joint venture partner in India and the choice was for the large all India group with significant presence. Reliance could have been the other choice for Wal-Mart along with some of the big groups like Raheja Construction including the existing players in retail domain like Shopper Stop, Pantaloon etc. Even the domestic group like Godrej was also named as prospective partners for Wal-Mart. Finally the issues are resolved and Bharti-Wal-Mart joint venture is formed. Mr. Sunil Mittal of Bharti gave the press statement that it is not necessarily the joint venture of equal equity participation but a joint venture of two equals. The real term retail revolution therefore is about to begin in India and that will impact the prospects of our processed food industry.

The success of processed food business requires intensive distribution. Our retail universe is very complex. There are about 12 million retail outlets in India. More than 80 per cent of these retail outlets are run by small family businesses which use only household labour. We are therefore, a “nation of shopkeepers” and the retail industry is highly fragmented and unorganized. Organised retailing is still in a very nascent stage. With Wal-Mart’s entry and Reliance Group’s foray into the retail business things are going to be different now on. We can therefore say that retail revolution in India is about to begin. The left parties in the UPA government has started making noises and expressing concerns over the repercussions of entry of such big giant in the world of retailing.
Commerce Minister Mr Kamal Nath is also reportedly saying that the Government is going to examine the impact on the neighborhood retailers because of big players entry into the field including the foreign players.

Indian retail distribution is so complex that it becomes an enormous task for the marketers to build a good and efficient distribution system. And as efficient distribution is at the core of creating any success story in business and more so in fast moving consumer goods (FMCG) business like processed food, many MNCs have gone ahead for acquisition of domestic business form this consideration itself. For example, the major attraction of Coke acquiring Parles brand is to get access to their distribution. Similarly P&G and Pillsbury have tied up with Godrej Soap only for the consideration of easy access to the retail universe to ensure the availability of the products. Hindustan Lever is the most efficient in distribution of FMCG goods. HLL has direct access to over 1 million outlets which they serve directly. The Wal-Mart entry and Reliance investment in the efficient supply chain management will significantly reduce the length of this chain and will be more cost effective. Reliance and Wal-Mart will also bring in quality merchandise at lower cost because of their scale of operation. The product will thus be available in these organized retail outlets at costs which will not be more than the price at which neighborhood retailers are selling. It could be even less costly because of efficiency of the system and in addition there will be daily low prices at these stores. I know of many new investors willing to play a role in the entire supply chain linkage for Wal-Mart and Reliance. This is a new found investment opportunity by setting up cold chain and
logistics provider businesses. Apparently therefore, one can think that our traditional retailers are going to face a threat.

However, we should not think that these small retailers eventually will have to perish and will be thrown jobless or will lose their livelihood. It is not going to be so if they are enterprising and agree and most importantly act to play a different role in the new value chain. Essentially there are two different kinds of roles that these traders will have to play. One, to become a franchised outlet in those localities where they are operating now. But this will be possible for those who own a real estate which meets the criteria of the big organized retail players or have the ability to invest to create new facilities. The other possibility for them is to become sourcing agents and quality inspectors for large players after taking the necessary training. There will be opportunity for those who can invest large fund to create storage and warehouse and packing stations for the Wal-Mart and Reliance. Of course, these possibilities are not going to cover all small retailers who earn their daily livelihood from whatever they sell from their shops. But they will still remain. India is a vast country and Wal-Mart and Reliance will not be able cover all such small pockets of market. The new role has to be played by at least those reasonable size retailers in metros, cities and towns. Because these local retailers will not have any value proposition for the consumers, they will not be able to provide ambience to make shopping pleasurable nor they can offer lower price than what Wal-Mart and Reliance will offer.

There is going to be a need of huge trained work force to work in these retail outlets. Some institutions are already come up for providing those training to simple graduates
and non-graduates to be ready for working in organized retail outlets where customer care is an important part of their business. Business Schools have started offering programme on retail management. I have been asked by my publisher to immediately write a book on Retail Management. The impact of the retail revolution is going to be very positive in our economy.

In processed food industry small and new players will be able to find ways to place their products in these stores by producing store label brands for them. This will also help them to sell their products abroad through say Wal-Mart itself. Processed food industry should therefore welcome this new development. Everything is going good for them. Food processors should quickly line up to capture this new opportunity.

Reliance Chairman Mr. Mukesh Ambani has said that our country is too big and thus there is a room for them also to play their part. This is true. There is no reason for other organized players in retail to get panicky about Wal-Mart entry because they have other global and successful players to tie up with. And lastly Wal-Mart is not the last word. Even they also failed. After losing money for consecutively for eight years in Germany to the local players and incurring huge loss Wal-Mart had withdrawn couple of months ago from German market. Who knows Reliance and other established local players can put up a good fight against Wal-Mart and outsmart Wal-Mart as well in terms of performance. Only advantage that Wal-Mart have is that they are the biggest and they know the game better than anyone else. [9]
Organized retailing can bring in the expected growth in the food and agriculture based industry

IN the New Year let us take some positive look at our processed food industry. Many things have happened in the recent years for making the industry prosper and integrate faster with the global food trade to eventually become one of the leaders in global food business, which is a legitimate expectation that we are nurturing for several decades. The kind of activities we have witnessed in the post liberalization era in the industry and economy and that too in the last five years has not happened in last three decades. It is true that not all actions have delivered expected results but several actions taken have collectively delivered some significant results that are clearly visible. If I have to list those activities I will specifically highlight the following:

- Government announcing specific schemes for new investment as well giving 100 per cent automatic clearance to FDI barring a few negative list
- Setting up Agri Export Zone (AEZ) to boost local production and export of select fruits and vegetables and also setting up food parks in various states
- Government giving a shape to vision document and policy framework
- New Integrated Food laws cleared for implementation.

In terms of private sector initiatives E-choupal of ITC Ltd is a major step in integrating rural farmers to market. The various e-governance initiatives of states and central govt. covers agriculture education and marketing information services. Some of the states have done commendable progress in this direction. Additionally, community information centers (CICs) set up in certain states have helped farmers to access the information related to agriculture extension services, scientific inputs in farming and farm management and market related on line real time information. To what extent our farmers
could utilize these support is, of course, can be questioned and I have covered all those
issues earlier. What I intend to do now is to highlight what good these initiatives can do
to our food industry provided we want to make use of these infrastructure. For example,
e-choupal initiatives have been utilized to open retail outlets to sell agriculture related as
well for retailing other daily consumption products by organizations like Mahindras and
Godrej group.

The favorable business and policy environment has helped in the inflow of FDI into this
sector. Some of this investment in the form of FDI did not yield results. Many MNCs had
come and gone back like Nutricia. Many MNCs are struggling still for survival. Many
Indian businesses have changed hands and were acquired by the MNCs but these are
normal in any capitalist economy where there will be constant alignment and re-
alignment of businesses in terms of ownership and portfolio reshuffling to ensure better
control and growth as the market forces demand. It does not make much difference to us
if the ownership of some of old domestic businesses gets passed on to foreign companies.
It is also true that some new domestic companies that have come up and within a short
period of time created linkages with the foreign large retailers and making good business
now. Examples are Capital Foods in Gujarat or Satnam Food in Haryana. These
companies are supplying to large retailers like Tesco. There could be many more success
stories like this.

What is in our interest is to see that industry is growing, farmers getting better price,
quality is improving, new projects are being set up successfully, supply chain efficiency
is improving, hygiene, safety, packaging standard are being upgraded, disclosures on
product contents and nutrition appearing on the label, export performance is improving and employment is increasing. Although these indicators are all on the rise yet these are still not at expected level. But nobody will deny that we are going in the right direction.

However, the most significant thing that can happen for this industry is through organized retailing. All these years we were only talking about the huge wastage because of lack of infrastructure and marketing opportunities but no step was taken in that direction to contain the wastage. We are now taking steps to build infrastructure in terms of cold storages, roads, processing facilities, setting up rural enterprises etc. The middlemen exploitation and poor infrastructure and absence of proper systems of control and monitoring mechanisms had made the industry inefficient. The price of fresh products in urban market is four to five times the farm-gate price whereas it is only one to one and half times in developed countries. As the efficiency increases product prices will come down and therefore, it will be more affordable and consumption will increase. And only competition can make that happen.

The organized retailers will eliminate the losses and therefore the prices will come down and quality will improve. It was reported in a study by Indian Council for Research on International Economic Relations (ICRIER) that prices of certain products including poultry in Bangalore have reduced after Metro Cash & Carry streamlined the supply network and reduced the number of intermediaries. The same thing is going to happen in other cities because of collective actions to reduce the wastage by the organized retailers.
The agitation by the roadside retailers forced the Reliance to close down the fresh stores in some states like UP and Bihar but these actions are politically motivated and definitely not going in the interest of farmers as well as not in the interest of the food industry. Industry requires quality raw material at lower cost to become competitive. In the traditional system farmers have been ruthlessly exploited by the cartels of middlemen who control the access to the major urban markets. With professionally managed retail chain, if Indians or foreigners enter this space it will benefit both primary producers and the consumers. Both will get better prices as well as better quality. If this happens on a large scale we will see economic benefits trickling down to rural areas for the first time. Assurance of off-take and better prices will make farmers credit worthy and will help them make investment in farm and supply chain infrastructure. It is not important whether the organized retailers are Indians or foreigners, as it does not matter if the cat is black or white as long as it catches mice.

The best thing that can happen in the new year for the food industry is that FDI in retail sector is made open which will trigger the growth of the sector by expanding the market, bringing in improvement in quality and reducing the price. This will help farmers and processors to get linked with global agri supply chain. Domestic retailers are making that effort. Foreign and giant global retailers will accelerate that process to help the processed food industry
Food Retailing Has Now Become Industry

Food retailing has come of age -- from a period when food items were sold in small roadside grocer shops & mandis and bazaars to a stage when food products are retailed through supermarket stores where consumers can inspect, select and pick up the products they like in a comfortable ambient and still pay a fair price for the product and the merchandise and sometimes even pay less than the price they would have paid at the nearest food stores. Shopping foods is no longer a strenuous and uncomfortable affair. Instead, it is a pleasurable experience. From simple trading activity, food retailing is now graduating to a status of an industry.

The first visible sign of the change in food retailing was seen in mid-eighties. Around that time a few new food stores were set up in all metro cities in India. Calcutta was the only exception where it started a little later. We had at that time couple of leading food stores started operating such as "Morning Stores" and "Modern Stores" in Delhi, "Nilgiri" in Bangalore, "Food Land" in Mumbai "Spencers Food Stores" in Chennai.

Food business analysts are of the opinion that food retailing will be changing and supermarket will soon be established in various smaller towns and thus food retailing industry has been predicted to be an in thing. To a large extent we can see that it is happening.

Spencers were the first to tie up with a Singapore based large retail chain -- "Dairyland" and had set up the food stores in Chennai. This was a technology tie up. The most crucial issue related to retail business is system and inventory management. A great deal of
knowledge and experience are required in these areas in order to achieve ideal or optimum stock rotation and pricing for perishable and nonperishable foods and also for processed and fresh foods. Failing which one can lose money in the retailing business.

In Mumbai, Garware group during late eighties had set up large food store which is now reported to have been closed down. But Food Land is still operating.

Prior to that, in cities like Mumbai and Delhi we had co-operative stores like "Apna Bazzar" in Mumbai and "Kendriya Bhandar" in Delhi. Both were very successful and are operating many outlets in all strategic localities in the city. When Escorts group was thinking in late eighties to diversify into non auto sectors which is their main business we deliberated a great deal and decided to get into agri business or food business. Escorts' the then Chairman Mr. H.P. Nanda had also rationalised that decision by saying that "we sell tractors and harvestors for agricultural sectors and our decision to diversify into agro sectors therefore is but a natural extension". And I was hired to give their dream a shape. Having worked in food business earlier for long years I knew that both failure rate in food business and the gestation period are higher than those of other consumer product businesses where risks are relatively lower. I therefore was looking for a relatively lower risk food project and finally zeroed in on food retailing after drawing up an ambitious plan. At that time MRTP provisions were restricting large group's entry in many industry sectors. But the then prime minister Late Mr. Rajiv Gandhi first created a ministry of food processing and gave it a priority status by putting it under Appendix I category. Nanz Group of West Germany, a two and half billion dollar food retail store chain was roped in by me in joint venture with Goetze (an Escort group company) and all
clearances were obtained which paved the way for setting up first foreign food retail store in India. Later on "Marsh" food chain of USA also joined this by taking 30% equity in the joint venture. Today there are twenty food stores under "Nanz" operating in northern India alone -- some directly owned and some are franchised.

Recently, I enquired about the financial performance of Nanz stores. I was told that they are still not making profit although very close to the break even point. The first "Nanz" store that I had started at South Extension was in 1990. Today after eight years of the stores existence the company is still in the red. Some stores are making money but some are still losing. Mr. Briganza, CEO of Spencer's food store in Chennai which belongs to the RPG Group told me that their store is making money. But still all such food retailing ventures did not work. Mr. K.V. Rao of Dolphin International also ventured into food retailing in Delhi and subsequently in Bangalore. The name of the store was Green Food Store located in Green Park which was closed down after running it for three years.

Once developed, these food stores will become really a dominating trade partners for the food industry, who will be forced to give special discount and trade terms for them to get the shelf space in those successful food stores. Once established, the store label brands will become a real threat to the industry as manufacturers have to compete with the store label brands which are normally sold at a lower price. In Great Britain we have such big food stores namely "Sainsbury" and Tesco". Soon we are going to see either these stores in India or at least their equivalent.
Ready To Eat Food

The market for semi-processed/cooked and ready to eat foods was around Rs 82.9 billion in 2004-05 and is rising rapidly with a growth rate of 20 per cent. With the changing life styles of the Indian middle class and the busy schedules of both the husband and wife in the family the demand for semi-processed cooked/ready to eat food will go up steadily as hired domestic help is also becoming costlier.

HLL has entered the ready to eat segment through Indus Valley rice meals in seven flavours. MTR Foods has also launched a wide range of rice meals and other curries. Satnam Overseas has also entered this growing market with its Kohinoor brands of rice meals and curries. ITC ‘s more than 50 packaged branded food products under Kitchens of India and Aaashirvaad brands with different varieties of ready to eat, cooked, food is gaining popularity in the market.

Pizza Corner has also expanded its outlets rapidly this year. There are currently 37 Pizza Corner outlets of Global Franchise Architects (GFA) across India. The total production of culinary products and snack food was around Rs 1750 crore in 2004-05 and is growing at a moderate rate of 8 per cent. The culinary products including mainly wheat based products comprising of noodles, vermicelli, macaroni and spaghetti is gaining popularity. HLL (Kissan and Knorr range) and Nestle (Maggi) dominate this segment, as both have large product portfolios. Heinz and Top Ramen are also knocking at the door.
Indian snack food market has reached a value of Rs 1530 crore. It is one of the largest snack markets in the world. Potato chips are by far the largest product category within snacks, with 85% of the total market share. Snack nuts and savory snacks also add to the market. At present, popcorn has yet to break into the Indian market.

Frito Lay's India, Pepsico’s Snack Food Division having snack foods plants in Channa (Punjab) and Pune (Maharashtra), and going for another in (Sakrail) West Bengal with investment of Rs 75 Crores as the state of West Bengal has immense opportunities for agro-based industries. The company has carried out backward integration to source potatoes and other crops with farmers across the states.

**The packaged foods firm is stepping up presence in customized instant mixes.**

It was one of the early movers to bite into the instant foods segment in the late seventies. Four decades later, the company, which started as Mavalli Tiffin Room (MTR) - a neighborhood eatery in Bangalore - has become a leading packaged foods company with over 300 products offering just about every meal solution.

The real turning point came three years ago when MTR was acquired by Norway’s Orkla group, which made its intent clear from day one - establish MTR it as a pan-India brand.

The first goal has since been achieved and MTR is now working on its next target: it wants to make instant mixes the face of the brand and even launch instant mixes for Indian desserts.
Sanjay Sharma, CEO of MTR Foods, says, "Instant mixes have given us volume growth in North and West India. We have already ramped up our production and will now grow our presence in department stores and neighborhood grocery shops."

MTR is also set to bring back Badam Halwa mixes that can be used in different forms by users. "We had a product called Badam Feast that never took off due to lack of awareness. But seeing the sales of Gulab Jamun mixes over the last three months, we realized that the Indian sweet instant mixes segment remains relatively unexplored," says Sharma.

With Orkla investing around Rs 100 crore, the company re-launched the MTR brand after redesigning its packaging. Alongside, it invested Rs 15 crore for capacity expansion of its spice plant from 5,000 tons to 14,000 tons.

Extensive consumer research and studies conducted by MTR revealed that while the average Indian buyer did not want readymade items, he looked for mixes that can be customized. "That's one reason why ready-to-eat meals have never been successful in India.

While they are exported in large numbers, on a day to day basis, Indians prefer packaged foods that can be adapted to personal preferences," says Sharma.

"We saw that there is a growing preference for North Indian dishes like paneer in Chennai, where it is treated as a special dish. So we have started stocking our supplies as
per customer preferences and the feedback from store owners on what item was moving fast," says Sharma.

MTR has also been testing various frozen food items like idlis, parathas and even poha that can be delivered to consumers in ready-to-eat format.

"The problem is that frozen foods need an ecosystem that would ensure it is kept fresh. This includes refrigerated delivery vehicles and proper storage facility at the stores."

For now, MTR is serious about growing its leadership in spices in Karnataka and Andhra Pradesh where it has a strong brand recall, Sharma reasons, "Spices contribute close to 35 per cent to our revenues followed by instant mixes. But spices are a fairly segmented market due to culinary preferences in each state. So, we will look to strengthen our hold in Karnataka and AP."

**Ready-to-eat food**

According to the report of Euromonitor International, a market research company, the amount of money Indians spend on meals outside the home has more than doubled in the past decade, to about US$ 5 billion a year and is expected to double again in about half that time. The industry is estimated to grow at 9-12 per cent, on the basis of an estimated GDP growth rate of 6-8 per cent, during the tenth five-year plan period. Value addition of food products is expected to increase from the current 8 per cent to 35 per cent by the end of 2025. Fruit and vegetable processing, which is currently around 2 per cent of total production is estimated to increase to 10 per cent by 2010 and to 25 per cent by 2025.
With the growth of 150 per cent in sales, the popularity of food and agro products is not surprising. With such promise in the sector, a number of foreign companies have joined the competition. While US brands such as McDonald's, Pizza Hut and Kentucky Fried Chicken have become household names, more are on their way.

The new wave in the food industry is not only about foreign companies arriving here attracted by the prospective size of the market. It is also about the migration of the made in India tag on food products traveling abroad. Indian food brands and fast moving consumer goods (FMCGs) are now increasingly finding prime shelf-space in the retail chains of the US and Europe. These include Cobra Beer, Bikanervala Foods, MTR Foods' ready-to-eat foodstuff, ITC's Kitchen of India and Satnam Overseas' Basmati rice.

Major social, economic and demographic changes over recent years have had great influence on the food we eat, and on where, when and how we do so. As a result the convenience food sector has grown by 70% over the past decade, creating a huge market. Convenience foods are foods which are designed to save consumers time in the kitchen and reduce costs due to spoilage. These foods require minimum preparation, typically just heating, and are packaged for a long shelf life with little loss of flavor and nutrients over time.

**These products tend to be criticized because:**

- They typically are high in fat and calorie contents
- The reduced time cost and nutritional content associated with these foods is specifically blamed for obesity
- Sometimes Genetically Modified Foods are used
- Sometimes an irradiation process is used
• If heat processing is used the vitamins are lost
• Preservatives are always used

These products tend to be used because of:

• Cost is not very high
• Time costs: Convenience foods reduce the time it takes to prepare dinners significantly.
• Variety: Due to packaging techniques such as canning and freezing, foods are available at all times of the year.
• Food safety: Packaging and processing techniques, such as canning, freezing, and irradiation, reduce spoilage and the presence of bacteria in the consumed products.

With changing times eating habits are also changing!

Initially it was readymade mixture for dosa, idli, gulabjamun, dhokle, which saved our time in arranging material to prepare these dishes. Companies like MTR, Haldiram, Kohinoor, Ashoka have flooded the processed food market with so many food items that sometimes after window shopping the ready-to-eat section of any supermarket you question the importance of cooking habit at home. Chole, rajma, paneer, dal fry, even aloo matar and pulao, every other dish is available today in the read-to-eat food section in all supermarkets. Thanks to the companies like Haldiram, MTR, Kohinoor and many others upcoming companies, who are trying to cover the preparation of whole list of food items. The bachelor section is the happiest one to get benefits from these companies. As they stay alone, so often they miss home made food. The readymade food section has helped to fulfill the choice of their taste buds, which ranges from so many different places. Not only the bachelors but husbands having working wife have not to be
dependent on them to pacify their taste buds. The Ready-to-eat industry of Indian foods is taking off, thanks in part to the demand from global Indians, NRIs and others looking for convenient food, (almost) authentic dishes and entrée on the go. This demand for ready-to-eat meals has captured a large amount of the food retail market in India and around the world. Walk in into any desi grocery shop in North America and one can find a wide assortment of emerging desi brands. Interestingly, the technology for this industry, at least for Indian players has taken off from the Defense Food Research Laboratory, Mysore — Military Meals Ready a.k.a. MRE’s, MREs — that works towards getting “just-cooked” freshness to Indian soldiers!

One view of looking at this ready-to-eat food is that it helps to fulfill the taste of bachelors, soldiers, and even NRIs. But is Indian kitchen really prepared to welcome it. Indian eating habits are very different from the rest of the world. Its in India only where home cooked food is still given the importance. People carry tiffin to offices, kids carry tiffin to schools. Cookery classes are still followed up by girls during their vacations and people still look forward of having variety of food cooked at home. If every woman is relaxed of having all the cooked food in her kitchen shelves and least bothered about cooking at home then imagine what will happen. It will be bring India also in under such category of countries where everybody eats ready-to-eat food. Experiments with food will continue and that will add fun to it. It’s the matter of making your life easier and hassleless. You can go to restaurants and have your food, you can order the restaurants to deliver food, and now you can just open your favorite dish packet and microwave it before serving. [10]
Even a cursory glance listing on GaramChai.com (an online Directory) brings up listings of hundreds of Restaurants and Bazaars serving the Indo-American community across North America. Restaurants range from the ubiquitous ‘Taste of India’ and ‘Udupi Bhavans’ and chains like Saravana Bhavan to the few upscale (read expensive) restaurants. These restaurants attempt to serve ‘authentic’ Indian cuisine from the different regions of India, adding an exotic touch to attract western clientele too. The range of operations is truly breathtaking. In larger metros, the upscale restaurants try and create either authentic ambience (importing expensive Natarajas and decorative artwork) or a completely retro look, as the case with the ‘Rupee Room’ that I had visited during a business trip to New Jersey. In smaller towns and cities in the US and Canada, the Indian Restaurants also double as grocery shops. Indian takeaways and ‘roti shops’ are also common in larger metros. To serve the varied palate, and to prepare authentic dishes ranging from the ‘regular’ dosas and naan combo to Hyderabadi Biriyani, stuffed capsicum, chicken chettinad or Murgh Ke Shami requires authentic ingredients. The story behind the supply-chain of Indian ingredients is intriguing and complex.

The interesting aspect of supply chain serving the ethnic restaurants is that it also attempts to serve the needs of the Indian Bazaars and grocery shops. There are literally hundreds of ethnic shops and bazaars specializing in Indian and South Asian grocery in the US and North America. With the growth of Indo-American population, the grocery vendors have also attempted to keep pace. These shops procure Indian grocery, produce and packaged products including brands familiar to ethnic community like ‘Parle G’ biscuits and stock them. Similarly, a whole cottage industry has sprung up in growing
‘Indian’ vegetables like drumstick, bittergourd and the like in sub-tropical and moderate regions of the US like Florida and California and supplying them to wholesalers and retailers.

Growth in Ready-to-eat dishes has been one of the most noticeable trends in the recent years. The market has also been equally receptive to generation of sufficient demand, especially among double-income working couples, single technologists on business travel in the US and students. What began as an experiment by a few suppliers to provide ‘chutney powder’ and the like in a packaged format has really taken off. Aided by food-preservation and packaging technologies developed by the military (called MRE’s, Meals Ready To Eat) the technology has successfully been adopted to freeze-and-microwave even crispy dosas, samosas and vadas. Brands like Deep Foods, Haldirams and Shalini Foods have really been at the forefront of innovation, adopting many of the emerging technologies in processing and packaging foods. Amul has been similarly innovative in packaging Ghee that it is best known for, along with Gulab Jamuns and Rosgullas in heat-and-eat packs. [11]

This report is based on trends observed in the changing Indian lifestyles, dietary intake patterns and the heightened need for convenience. It captures the current attitudes towards consumption of ready to eat foods and is aimed at enabling the NPD and marketing team in FMCG companies, to identify potentials in terms of advertising, product formulation & packaging, and emerging consumer segments.
Scope

* Identifies current and emerging categories in ready-to-eat foods
* Explores drivers and inhibitors behind Indian consumers' product choices of ready-to-eat foods
* Focus areas for FMCG companies in terms of marketing communication, product formulation and packaging and target consumers
* Geographic scope is India

Highlights

There is a rise in the demand for foods based on traditional Indian recipes across different states in India and abroad. This can be attributed to a number of factors including paucity of time and declining skills to prepare several traditional Indian foods, and the rise in the globalization of Indians and Indian food.

The extensive coverage of topics related to health and wellness in the media is increasing awareness amongst Indian consumers regarding health issues and the long term ill-effects of consumption of fast-food.

Since Indians' dietary patterns have changed such that they don't have their ethnic foods during their breakfast, lunch or evening snack, there is an inclination to balance the dietary intake by opting for a traditional Indian cuisine during dinner

- Reasons to Purchase
- Information on current consumer and product trends in the Indian ready-to-eat foods market
- Insights into Indian consumer attitudes towards purchase and consumption of such ready to eat foods
- Identifies opportunities in terms of marketing communication, product formulation & packaging, and emerging consumer segments for FMCG companies in India. [13]

Ready-to-eat foods market in India to reach Rs 2900 Cr by 2015. Tata Strategic recommends focusing on affordability, acceptability and availability of ready-to-eat foods.

Tata Strategic Management Group, today, released its analysis on the Ready-To-Eat (RTE) foods market in India currently worth Rs. 128Cr. (2006), expecting it to further expand to Rs 2900 Cr. by 2015. The factors contributing to this growth would be changes like cold chain development, disintermediation, streamlining of taxation, economies of scale on the supply side, coupled with increasing disposable incomes, diminishing culinary skills and the rising need for convenience on the demand side.

The Tata Strategic report on the Ready-To-Eat (RTE) foods highlights that the RTE market in India has remained under penetrated owing to factors like consumers’ penchant for freshness, low affordability and the Indian housewife’s preference for home cooked food. The report also draws attention to the ‘perceived’ taste and nutrition gap and poor range availability for the Indian consumers.

Significant RTE foods industry data highlighted in the Tata Strategic report:

Packaged foods in India have grown at approximately 7% per annum between 2000 and 2005, with Ready-to-eat foods (RTE) being the fastest growing category at CAGR 73%.
The Indian RTE foods market, canned/preserved segment is more popular, contributing to approximately 90% of the market and growing at a CAGR of 63% between 2001 and 2006. The chilled and dried ready meal segments are non-existent.

According to the report, the packaged foods industry in India has not experienced significant growth due to inadequate demand arising from low household incomes and consumer preference for fresh and home-cooked food.

Speaking on the future outlook for the RTE market, Mr. Raju Bhinge, CEO, Tata Strategic Management Group said, “There is a huge untapped market opportunity arising due to rapid demographic shifts in income, urbanization and proportion of urban working women in India. The industry needs to concentrate on broadening the market and increasing penetration amongst Indian consumers.”

Tata Strategic analysis of the Indian RTE market also put forth that the industry players would have to significantly improve their price competitiveness with respect to other options such as domestic help, eating out and ordering in, available to the Indian consumer. Besides price considerations, the product range offered by industry players will have to be strengthened. At the moment the regional cuisine and non-vegetarian cuisine markets are relatively under serviced with concentration on the vegetarian North Indian meals.

Mr. Pankaj Gupta, Practice Head- Consumer & Retail, Tata Strategic further added, “According to our analysis, India provides an attractive opportunity for both Indian and International players with a mix of demand and supply side changes. If consumer demands of affordability, availability and enhancing acceptability are met, the RTE foods
The Indian ready-to-eat (RTE) and ready-to-cook (RTC) food segment has emerged from its early days of being a fringe alternative to home-cooked meal or to eating out. A fast-paced urban lifestyle, increasing prevalence of nuclear family structure, rising disposable income, increasingly larger number of globe-trotting Indians with an experimentative palate are all favorable demographic factors spurring the adoption of RTE and RTC foods in India.

Further, the growth of modern retail has provided unprecedented brand and category visibility to convenience foods. Also, technological advancements in packaging and flavor science have brought RTE and RTC foods centre-stage among urban Indians.

In the RTE and RTC segments, and specifically in pasta, vermicelli and instant mix categories, the competitive landscape is largely dominated by 4-5 players, including MTR, Gits, ITC, Bambino, and Kohinoor Foods. Apart from focusing on the domestic market, these companies have also expanded their reach internationally in geographies with a sizeable Indian Diaspora.

On the domestic front, there is an interesting competitive dynamics emerging. With the introduction of private labels, e.g. Tasty Treat by Big Bazaar and in-store, freshly-made snack mixes, e.g. idli and dosas, modern retail presents a credible threat for branded RTE
and RTC players, who have traditionally relied upon this channel for increasing their visibility and reach.

The urban consumers are not complaining though, as they have wider options in product range and prices, easier availability, and increased convenience. A larger proportion of urban consumers are experimenting with RTE/RTC foods on a more frequent basis with the top two value propositions being “saves time” and “tastes good”. Among the three categories mentioned earlier, pasta and instant mixes lead in terms of frequency of consumption, with vermicelli taking a relatively lesser share of wallet. These findings have emerged from a dipstick consumer research study the analyst team at Religare Information services conducted across the metros and Tier I cities in putting together this report.\[15\]

Godrej Tyson Foods, the 49:51 joint venture company formed a year ago, is getting ready to unveil the US-based Tyson brand through the food services channel comprising institutional sales.

“These company will launch the Tyson brand in the B2B segment as users of the food service channel are more familiar with the brand than the retail consumers,” stated Malik Sadiq, chief executive officer of Godrej Tyson Foods.

Currently with two brands under its fold — Yummiez and Real Good Chicken (RGC) — Tyson is being introduced through a co-branding initiative with the existing two brands rather than a standalone one at the retail level. Having entered the ready-to-cook segment
under its Yummiez brand, the integrated poultry company is now poised to make a foray into the nascent ready-to-eat category in the near future.

“The ready-to-eat segment is a far younger market than the ready-to-cook segment. But we plan to enter this market within a year. The products will be made to cater to Indian taste,” claims Sadiq.

Further segmentation within its foods portfolio is also envisaged with region and age-specific items planned in the future. “There will be different kinds of segmentation within our portfolio. There could be more regional brands as well as different foods to cater to kids and adults,” he said.

“The ready-to-cook segment is possibly growing faster than the ready-to-eat segment today. But like all nascent markets there is transition from raw to packaged ready-to-eat food. Today, we already have a range of finger foods under the Yummiez brand and intend entering the ready-to-eat segment as well,” added Mr Sadiq.

Supply chain issues

“Today, we are present in mostly all the retail chains such as Reliance Fresh and Spencer’s; development of cold chain facilities is an issue. While fresh chicken has huge potential, supply chain issues continue to pose a challenge for us,” he said. [16]
Indian industrial giant ITC has come with a big team and a large and nicely designed stall to anuga to make its presence felt and presented to the public for the first time a complete range of frozen products under its brand “Kitchens of India”.

In the last years, ITC already offered Indian convenience food to the world market, like curries and cooking sauces. With these products, ITC has entered several markets like Germany, the US or Switzerland. In the US, the company is already the market leader in the convenience segment of Indian ethnic food, as was told to by Hemant Malik, Head of Marketing of the Food Division of ITC (left on the photo; next to him is Mr. Ganesh Kumar, Category Manager Staples). In Germany, the products are available with large retail chains like Kaufhof and Edeka.

At anuga, ITC launched a complete range of frozen products, obviously the next logical step in the convenience segment: naan, stuffed parathas, samosas, and complete dishes, for example “Green Peas and Cottage Cheese Curry”. The consumer has just to put it in the microwave or in the oven for a few minutes, then food can be served. All products come in a nice packaging under the brand “Kitchens of India”.

ITC’s experience of Indian food in Western stomachs originates in its hotel business, Mr. Malik explained. Guests in the hotel restaurants always liked the food and asked, how and where they could buy such good food later on. ITC made a new business out of that. And he added, that India has good food. “We like to bring our good food to more people”, he said.
After having entered some central European markets, ITC is now targeting France, Italy and Scandinavia. In these markets, ITC is looking for the best distributing options.

ITC Foods has announced plans to bring its frozen foods to the domestic market within the next six to eight months. The frozen foods including meals packaged in trays and snacks would be marketed under the Kitchen of India brand.

ITC recently began exporting frozen vegetarian foods to markets such as the US and Canada, after the products had been launched during the last anuga fair in Germany. As exporting non-vegetarian foods out of India is restricted, the company has to limit itself to vegetarian food only.

The frozen foods range is produced at the company’s Bangalore facility, which will be used for production for the domestic market as well, ITC Foods CEO Ravi Naware has informed.

Unlike Western markets, the frozen foods segment is still small in India, estimated at only about Rs 25-30 crore according to various sources. Various factors like the lack of refrigerated supply chains and missing frozen display cases on the retail front seem to be the main reasons for that.

Frozen foods are regarded as healthier by many people compared to dry ready-to eat meals, as preservatives and other special ingredients are not needed and mostly not used

With rapid economic growth lifestyles are changing.
Urbanization and nuclear families influence eating habits. Demand for ready-to-eat foods is soaring within the country; and importantly, export markets for traditional foods are developing.

The retail revolution has begun to augment the prospects for convenience foods. New products are being launched and established products revamped.

Organized by All India Food Processors Association in conjunction with Assochom India and supported by Union Ministry of Food Processing Industries and India Trade Promotion Organization, the seminar is expected to provide an opportunity for entrepreneurs, food technologists, export houses, marketing experts and logistics service providers to discuss food industry issues holistically and chart a roadmap for the future.

India is without doubt one of the most promising markets for the international food manufacturing and retailing sector, in the short, medium and long term.

There are so many obvious benefits: a 1.1bn official population; an 8% per-annum growth-rate economy (now the tenth-largest in the world); an increasingly-liberalised trade regime; and an informal food supply chain that is still open for exploitation by commercial food companies. These factors alone suggest a promising future for the food industry in India, both domestic and international.

By forging commercial plans out of innovative ideas that reflect local Indian practices and customs, the retail segment of the US$91.66bn Indian food industry and the branded goods manufacturers that supply it are looking at a veritable commercial gold mine.
This comprehensive report from just-food provides sector-by-sector analysis of the booming food retailing industry in India, including a look at the commercial retail sector, a review of 12 different product sectors, market values and forecasts to 2015 and the future for processed food consumption in India. [19]

It's fast becoming a reality. For, even as the Rs 25-crore ready-to-eat packaged foods market faces challenges back home, the category is gathering momentum overseas.

From ITC's Kitchens of India and MTR Foods, to Tasty Bites Eatables and Satnam Overseas, everyone seems to be wanting a slice of the NRI's food pie.

ITC Foods has already had a test run of its Kitchens of India range of ready-to-serve packaged foods in Selfridges, UK. Mr Ravi Naware, Chief Executive, ITC Foods, said, "Retailing in the UK, other European countries and the US is very much on the agenda. Next year, we plan to begin retailing in supermarkets in the UK."

Or take the Rs 130-crore MTR Foods. "We plan to begin selling our ready-to-eat food range in Sainsbury, UK, within the next six months," said Mr Sadananda Maiya, Chairman & Managing Director, MTR Foods.

The company's presence on the global map - at roughly 8 per cent of its sales - is currently marked by exports to the US, Canada, UK, Germany, France and Japan, among other countries. MTR has projected exports to account for 20 per cent of its sales in five years.
The Pune-based Tasty Bite Eatables Ltd (TBEL) claims to be the largest-selling Indian food brand in the ‘natural foods' category in the US. Mr Ravi Nigam, Executive Director and President, TBEL, attributes the brand's performance in the US to "significant" investments on the distribution front. "We have decided to focus on our largest revenue generator — the Ready-To-Serve (RTS) or retort packaging category," Mr Nigam added.

The Rs 100-crore Bikanervala Foods Pvt Ltd plans to set up manufacturing units for traditional Indian sweets and ethnic snack foods in Canada and Dubai, said Mr S.S. Aggarwal, the company's Managing Director. The first Bikanervala Indian fast food outlet-cum-sweet shop in the US is expected to take off in New Jersey in six to eight months.

Bikanervala's manufacturing facility in Canada — a joint venture with a Toronto-based NRI — will involve an initial investment of about Rs 2.2 crore. According to Mr Aggarwal, setting up an overseas production base would help the company maintain freshness and enhance product shelf life. [20]

According to FICCI’S Food and Beverage Survey, 2006, the ready-to-eat food sector is growing by 20% annually. And that's a substantial figure of growth in the Indian food and beverage industry worth Rs 3,58 400 crore.

The sheer variety that’s available on supermarket shelves and your local kirana stores is mindboggling. MTR, ITC, Tasty Bite, Currie Classic and Kohinoor offer customers several ready-to-eat options in regional category to choose from: so the choice is from kharabath, palak paneer, baghare baigan, Kashmiri rajma, avial and even the evergreen
dal makhni. Costing as little as Rs 25 and going up to to Rs 150 (dal Bukhara), the ready-to-eat packs are clearly here to stay

Jostling for shelf-space with economically priced read-to-eat packs are ITC’s premium tins comprising: dal Bukhara, dal Dakshini, chicken Chettinad, mirch ka salan, Awadhi badam halwa et al. Actress Kareena Kapoor says, “Earlier I’d pick up dal Bukhara tins from ITC Maurya Sheraton every time I visited Delhi, now I can get it here in Mumbai. That’s convenient for me and others who want it.”

M Chellayan, director, the Nilgiri Dairy Farm (Nilgiris), says that with more “disposable income” many middle and upper middle class people are going in for ready-to-eat dishes. From gourmet cuisine like Bohri biryani to delectable desserts: everything you’ve wanted to sample is now available in pouches or tins : all you need to do is just heat and eat.

Traditionally Indians prefer fresh food served in homes/eateries and in the initial years there were enough reservations about food packed in alumnimum pouches that stayed on shelves for days before consumption. That phase seems to be over and the ready-to-eat market today is worth Rs 70-80 crore (discounting the bigger ready-made market comprising juices, noodles etc which together put the market cost to Rs 1,000 crore. Upbeat about the growth potential, top producers MTR, Kohinoor, Tasty Bites, Indo-Nissin, Currie Classic, HLL, have stepped up production, and expanded their range of products.

MTR chairman and managing director P Sadanand Maiya: “MTR products currently reach 1 lakh outlets across India. We have about 65% share in the ready-to-eat market. In
north India, the market for us has grown 25%, while in south we have grown 50% in the last one year. With restaurant costs escalating in the US, Japan and even India (if you think premium restaurants and five-stars), gourmets have an easy option to buy ready-made packs without spending a bomb or spending too much time getting ingredients to make them. In 1998, the ready-to-eat food market was a paltry Rs 6 crore. But by the year 2008, it is expected to touch Rs 300 crore, so there’s plenty of reason to cheer for us.

ITC Foods is all set to invest Rs 450 crore in the next three years (besides the estimated Rs 150 crore it has already put in) in the branded food market. As for the ready-to-eat food market, ITC has created two distinct segments — the upper end catered through the Kitchens of India brand and the middle level market through the Aashirwad series. Aashirwad is available in 15,000 retail stores, while Kitchens of India is available at 7,000 outlets

If the current figures are an indication, looks like cut-heat-eat formula is all set to redefine the culinary palate of urban India.  

IT'S EIGHT in the evening, you're still in office, and some friends have invited themselves over for dinner. What will you do? Rush home, don the apron and rustle up something delectable? "Nah!" says Rohit, a self-confessed lover of cooking. The great stuff he churns out in the kitchen has many of his bachelor friends lining up for homemade food. What Rohit does now in moments of crisis is pick up ready-to-eat side dishes straight off the super market shelf and team them up with pre-packed parathas and rotis. For dessert, he chooses from any of the readymade ones on offer. His friends can't really make out the difference.
If you're a regular super market shopper, chances are you would've noticed the number of items on offer in this segment growing by the day. Thanks to change in mindset on eating packed food and the fact that no preservatives are used to extend the shelf life, more and more people, especially working couples, are taking to ready-to-eat food in a big way.

And, the variety on offer is mindboggling. Five companies, MTR, ITC, Tasty Bite, Currie Classic and Kohinoor, put together offer customers more than 25 options to choose from.

These packs come in the range of Rs. 15 (for lemon rice and the like) to Rs. 40 (Palak Paneer et al). The `Buy two get one free' scheme of ITC has caught on very well with customers, store managers say.

In the premium segment are ITC's tinned offerings like Dal Bukhara (from Bill Clinton's favourite restaurant at Maurya Sheraton, Delhi), Dal Dakshini and Chicken Chettinad.

M. Chellayan, Director, the Nilgiri Dairy Farm (Nilgiris), says that with more disposable income on their hand, many middle and upper middle class people are going in for these dishes. S. Prakash, Senior Manager of Alankar Supermarket, agrees. "We've had to replenish our stock often," he says.

Though people are open to trying out new dishes, the fact that it is pre-cooked and packed rankles some. But, one bite and they are hooked. "I opened a packet of MTR's Bisibela bhath bravely, but wondered how it would taste. I refused to believe that something cooked a month ago and packed, that too without any preservatives, would still be fresh. But, one spoon was enough to make me a convert. I now buy packed subzis
when I am in the mood to eat something nice without going through the bother of cooking," says Leena, who works in the field of medical transcription. [22]

Over the past two years, the ready-to-eat packed food market has grown from an almost insignificant number to become a US$20-million-revenue industry in 2004. Industry players say that, considering the current 35% growth rate, revenues in this sector can easily touch $50 million in the next three years.

"Indian lifestyle is undergoing a massive socio-economic change, which is also being reflected in food habits," says Ravi Naware, divisional chief executive of ITC Foods, a wing of ITC Ltd, one of India's largest fast-moving consumer-goods company. "In urban India, where time is more important than money, it's tough to return from office and put the hours into cooking that a typical Indian meal demands. Also, young Indians have not picked up the cooking skills from their parents, mostly because they are simply not interested."

J Suresh, chief executive officer (CEO) and executive director of MTR Foods that claims to be the largest player in the segment with over 65% market share, adds that ready-made food is not considered extravagant expense anymore. "Many Indian households with little time and inclination to spend in the kitchen are adopting this as a necessity. Moreover, with disposable income going up as families become more double-income and salaries going up, people don't mind spending on something that will save them the sweat in kitchen," he says.
The quick-fix food concept is not really new in India, it has only picked up of late. It was launched over a decade ago in different forms but failed to take off primarily because of a general preference for freshly cooked food. And also, as Naware says, "because retail outlets in India lacked the adequate refrigeration facilities". With the availability of a new technology called Retort - that packs cooked food in a four-layer package, which is then heated to 120 degrees Celsius to kill all living organisms, thereby ensuring freshness through its much longer shelf-life - the ready-to-eat food concept has become far more acceptable." Besides, says Suresh of MTR Foods, all ready-made food makers have adopted Hazard Analysis Control Point Certification from the British Standard Laboratory, which signifies that factories making such products follow strict food and safety norms.

Nevertheless, all ready-made food makers say the primary driving force behind the growth of this sector is the changing Indian mindset toward food. Convenience is the new buzzword. "There was a time when eating out was a luxury," says Amit Jatia, managing director of McDonalds India. "Not any more. Likewise, an urban Indian no longer hesitates to pick up a phone and order meal from a neighborhood restaurant or pick up a ready-to-eat meal from the next-door store." According to AC Neilsen ORG MARG, a top market research outfit, it is not just ready-to-eat food that is growing at a scorching pace, but "eating habits are changing rapidly and fast-food consumption is now a part of everyday life...Almost a third of urban Indians now claim to opt for fast food, even for breakfast. Dinner, however, remains the most-preferred occasion for eating fast food," says Sarang Panchal, executive director of AC Neilsen.
According to the findings of the latest online survey from AC Nielsen, urban Indians are among the top 10 most-frequent consumers of fast food across the globe. The survey finds that a huge 71% of urban Indians consume food from take-away restaurants once a month. Some 37% of the adult Indian population does so at least once a week. This makes India one of the top 10 countries among the 28 surveyed in terms of frequency of fast-food consumption.

"The incidence of fast food consumption in urban India is accelerating much faster than most people anticipated," says Panchal. "Contrary to the belief that a reliance on traditional and home-made preparation may hinder the growth of fast food, changing lifestyle has altered the view toward out-of-home meals. A willingness to spend and, most importantly, the urban Indian acquiring a more global palate has catalyzed consumption."

Among the international fast food chains and local operators, McDonald's is the most popular of all take-away options. Nonetheless, selling fast food and ready-made food is not exactly easy, say the players, especially for foreign players, as Domino's Pizza India CEO Arvind Nair discovered. Which is why, he says, "Imported fast food chains were quick to adapt to Indian tastes and even the regional variations.

Indians' discerning taste buds is a big reason why industry experts like Naware and Suresh feel that foreign players would find little opportunity in this new fad "unless it is ready to tie up with a local player". However, for foreign players, India could be a good sourcing point for the overseas markets. "The growth of ready-made food and curry
pastes has also been scorching in overseas markets," says Naware. "The potential for exports are very good. We are experiencing explosive demand for ready-made Indian food from overseas markets like the US, the UK, Canada and Europe. This demand is not only generated by the non-resident Indian community but also by the local populations that are increasingly getting exposed to Indian cuisine through Indians living there, and also through their travels. They will either use ready-to-cook or ready-to-eat food". India exported about $7 million worth ready-made Indian food in 2004, which is growing at around 20% a year.

According to industry insiders, the opportunity for foreign players in the country’s fast food segment is huge. The snowballing retail revolution aimed at India's 300-million-strong middle class has created a natural habitat for imported fast food. "That has happened because marketing ready-made and fast foods in the rest of India requires huge wherewithal that Indian companies do not have. This is where foreign players can excel," says Naware. [23]

**Future of Processed Food Industry**

**India's Potential Untapped-Food Industry**

India is the world's second largest producer of food next to China, and has the potential of being the biggest with the food and agricultural sector. The processing food segment accounts for 29.4 billion, in a total estimated food market of about USD 91.7 billion. The food processing industry is one of the largest industries in India. It currently ranks fifth in terms of production, consumption, export and growth prospects.
The Confederation of Indian Industry (CII) has estimated that the food-processing sector has the potential of attracting USD 33 billion of investment in 10 years and generates employment of 9 million person-days. The Government has formulated and implemented several Plan Schemes to provide financial assistance for setting up and modernizing food processing units, creation of infrastructure, support for research and development and human resource development in addition to other promotional measures to encourage the growth of the processed food sector.

Though the industry is large in size, it is still at a nascent stage in terms of development. Of the country's total agriculture and food produce, only 2 per cent is processed. The highest share of processed food is in the dairy sector, where 37 per cent of the total produce is processed, of this only 15 per cent is processed by the organized sector.

India's food processing sector covers fruit and vegetables; meat and poultry; milk and milk products, alcoholic beverages, fisheries, plantation, grain processing and other consumer product groups like confectionery, chocolates and cocoa products, soya-based products, mineral water, high protein foods etc. We cover an exhaustive database of an array of suppliers, manufacturers, exporters and importers widely dealing in sectors like the food industry, dairy processing, Indian beverage industry etc.
**Indianisation**

International fast food brands spice up their plans of entering India. Many like UK brand Dixy Chicken and pizza outlet Papa John's made their foray recently, Cinnabon and Barnie's will open their first store this year and a host of other brands, including SumoSalad and Panda Express, are scouting for local partners to tempt the Indian palate.

Fast-food retail chains such as KFC, McDonald's, Domino's, Pizza Hut and others are re-learning marketing lessons and segmenting their product portfolio to capture Indian consumers across diverse income levels and lifestyles. The strategy is an attempt by some top retailers to tone up profit margins with a multi-layered product portfolio that addresses the aspirational need of consumers willing to splurge while meeting the basic requirement at the bottom-end.

With cut-throat competition to set up standalone outlets at busy marketplaces getting tougher, fast-food chains have come up with a new recipe for success takeover and manage canteens across schools, colleges and corporate offices.

With global supermarket majors such as Wal-Mart, Tesco and Carrefour among others increasing sourcing of processed foods from the country, it makes monetary sense for local companies to enter/expand in this arena.

**Bon Appetite**

The total food production in India is likely to double in the next ten years and there is an opportunity for large investments in food and food processing technologies, skills and
equipment, especially in areas of Canning, Dairy and Food Processing, Specialty Processing, Packaging, Frozen Food and Refrigeration and Thermo Processing. Fruits and Vegetables, Fisheries, Milk and Milk Products, Meat and Poultry, Packaged/Convenience Foods, Alcoholic Beverages and Soft Drinks and Grains are important sub-sectors of the food processing industry. Health food and health food supplement is another rapidly rising segment of this industry, which is gaining vast popularity amongst the health conscious.

In a bid to remove constraints in the way of investments in the sector, the Ministry of Food Processing Industries (MoFPI) is set to push for creating a favorable fiscal environment to induce venture capital and mutual funds to invest in different components of supply chain or in the entire chain. This follows the recommendations of a Rabo Bank study commissioned by the Ministry to unlock investments to the tune of USD 33.4 billion in this sector over the next 10 years.

Since the sector offers immense growth potential, a large number of multi national companies (MNCs) have entered India to take advantage of the opportunity. Unilever, Nestle, Pepsi and Cadbury are some of the big, successful overseas players in India that face strife from established Indian brands.

According to a recently published report by RNCOS, Indian Food Processing (2006), :"In next 3 years, the Indian food processing industry is anticipated to grow to 3 times its current size making India a key and consequential player in the food and agriculture
trade. Despite being recognized as a promising growth area, the current share of Indian food processing market in the world food trade is only 2 percent."

The food processing and bakery products sector has given the stock markets something to munch on. Stocks of major players in this slow-moving sector have been performing well on good corporate results, helpful economic conditions and good weather. Although thin margins will call for increased volumes for these companies to remain afloat two years down the line, the long-term prospects are still good because opened-up rural markets and an ever-expanding consumer base will ensure volumes.

This "Indian Food and Beverages Forecast (2007-2011)" report gives an in-depth analysis of the present and future prospects of the Indian food and beverages industry. It looks into the industry in detail with foci on organized food retailing, consumer food purchasing behaviour, food processing industry and packed/convenience food industry. This report helps clients to analyze the factors and examine the opportunities critical to the success of food and beverages industry in India. [24]

The Indian food industry is set to grow by USD 100 billion to USD 300 billion by 2015, a study said.

"The Indian food industry estimated at USD 200 billion (Rs 8,80,000 crore) in the year 2006-07 is slated to reach USD 300 billion (Rs 13,20,000 crore) by 2015 with share of processed food in value terms increasing from 43 percent to 50 percent," a report by FICCI-Technopak said.
Food processing, being the major sector in the Indian food industry, stands at USD 85 billion (Rs 3, 74,000 crore) and gives direct employment to about two million workers, the report said.

The food processing industry is highly fragmented and dominated by the unorganised sector with 75 percent units falling under it.

"The increasing contribution of food processing sector would largely come from the organized sector," the report said.

The key growth drivers for the Indian food industry would be higher disposable incomes, shifts in spending orientation, increasing organized food retailing, increasing export opportunities, favorable regulatory environment and Government support and investment inflows, amongst others, the report said.

"In addition, openness to experimenting with processed and convenience food, and the increased phenomenon of organized food retailing has also led to reorientation of the entire food business," the report said.

The study also recommends collaborative efforts by both government and industry to create and upgrade existing agricultural infrastructure, while developing greater linkages with national and international markets.

"Policy level efforts should be initiated by the Government in consultation with farmer groups and the industry to minimize the prevailing gaps amongst various stakeholders," the report said.
There is an urgent need to create and augment strong production infrastructure, processing infrastructure, distribution and market infrastructure, along with emphasis on augmenting support infrastructure, at the same time.

"The increased investment needs to be sought from the private sector for infrastructure development," the report said.

The amendment of the APMC Act should be implemented in letter and spirit to reduce malfunctioning of the Indian marketing system, the study said.

Efficient price discovery mechanism should be evolved to safeguard interests of different stakeholders for agriculture produce, the FICCI report said.

"Systematic approach should be made to brand Indian fresh and processed food products in the international market," it said, adding the Government should make sincere efforts to help Indian players meet global quality standards.

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Over the years India’s processing sector has yielded poor results despite the country being one of the top food producers in the world
The **food processing sector** has surfaced as one of the drivers of India’s economic growth. Besides, fast economical growth, the country is also witnessing a transformation in the consumption trend from cereal to diverse and nutritious diet including fruits and vegetables, milk, fish, poultry products and meat. India has incredible possibilities to undertake large-scale **process-based farm activities** to make use of the emerging business opportunities. The country’s homogenous market gifted with emergent economy and altering lifestyles has created tremendous opportunities for food producers, machinery markets, service providers and others.

While developing countries have exploited the international food processing market in a huge way, India is still to make advances on this front as is obvious by her share in the world trade, which stands at a mere **1.5%**. \(^{[26]}\)

The Economic Research Analytics practice at Frost & Sullivan is pleased to announce its 2008 Quarterly Analyst Briefing Presentation on the Indian food industry to be held on Tuesday, March 4, 2008 at 8:00 a.m. PST.

After China, India is the second largest producer of food and beverages in the world. The transition from an era of food scarcity to surplus serves as a witness to tremendous progress made in this industry. Being one of the largest and most dynamic markets in India, food has seen rapid growth in most of its segments. Increased per capita income and high corporate interest in the organized retail market creates a platform for the Indian food industry to leap forward.
All participants in this sector, especially those looking at market entry and investments in India, will benefit from this briefing. Highlights of the briefing include a political and economic backdrop of the country, industry related policies, industry profile, growth drivers and growth opportunities.

“This is the biggest challenge and driver for the food and beverages industry as it expects increased growth due to improved retailing and supply chain management, as well as the priority status given to this industry by the government. The food and beverages industry is, however, restrained by the under-developed infrastructure of the country.”[27]

According to the latest research report, “Indian Food and Drinks Market: Emerging Opportunities”, by RNCOS, buoyed by the growing domestic demand, rapid urbanization and a growing middle class population, the Indian processed food industry is projected to experience rapid growth in near term. “The Indian food processing industry will not be affected by the current economic crisis as food like milk, fruits and vegetables are the basic necessity for human survival”, says an analyst at RNCOS.

The industry will continue to see fast growth as the domestic consumption of processed food remains low, mainly due to large rural population with low per capita income and conventional consumption habits. However, changing consumer demographics and an anticipated shift in consumption practices led by western cuisine, particularly among the youth, will drive the Indian food processing industry in the next few years, says the report.
Rising urbanization and income levels are also helping the Indian food processing industry to prosper. The research indicates that demand pattern for food in urban India largely differs from that of rural India. This is mainly in part due to the fact that urban people generally have higher purchasing power and this leads to greater demand for high-value processed food. Additionally, rapid evolvement of modernized food retail formats, including hypermarkets, supermarkets and mega retail food stores in malls, is also propelling the processed food market. Such stores facilitate greater exposure and visibility of processed food to consumers, and offer quality and hygienic services.

Apart from the Indian food processing sector, “Indian Food and Drinks Market: Emerging Opportunities” also gives extensive analysis on various other sectors, such as packaged food, functional food and storage facilities. It also describes government and investment policies fuelling growth in the food and drinks market of India. The research highlights various opportunity areas coupled with briefing on the factors which are blocking the market growth and require immediate attention.\(^{28}\)

With vast population base, growing middle class and strong macroeconomic environment, the Indian food & drinks market has emerged as the one of the fastest growing segments in the Indian retail industry. Rapid lifestyle transformation, particularly among those living in urban areas, has resulted into a dramatic increase in the demand for processed or health food, packaged and ready-to-eat food products. Arrival of food multinationals and proliferation of fast food outlets have further added to the growth in this industry. The changing scenario of the retail industry, like opening up of new supermarkets/hypermarkets, shopping malls and fast food outlets, coupled with favorable
industry trends, is about to bring radical shifts in the food & drink industry, says “Indian Food and Drinks Market: Emerging Opportunities”, a latest industry analysis by RNCOS.

The report provides in-depth research and rational analysis on the food & drinks industry in India. It provides detailed overview of the consumption patterns of Indians in various food segments, like milk, fruits, vegetables, meat, etc. The beverage segment talks about the type of beverages, their sales and consumption patterns among the Indian populace. The report aims at assisting clients in analyzing the potential growth areas, challenges and drivers critical for the Indian food & drinks industry. [29]

The branded packaged food industry is expected to grow at the rate of 9-12% per annum depending on the segments, including snacks food, ready-to-eat food, healthy and functional food. The total domestic food business is estimated at about Rs 5 lakh crore annually. Of which, the branded packaged food industry is estimated to be about 7.5% or Rs 37,500 crore.

The growth in the economy, coupled with a strong desire among consumers to maintain a healthy lifestyle and the growing awareness of functional ingredients such as herbs, minerals, vitamins, omega fatty acids and probiotics is driving the functional foods and beverages market, he said.... The food ingredients market is also increasing with a rapid growth rate, as consumers increasingly demand bigger, bolder tastes, foods that are healthy, and ingredients that are natural or sustainable.
"Consumers are becoming more sophisticated and want more upscale flavors and ingredients. The food ingredient business can grow at 40% in the next year," he said. The food processing sector in India has a market size of $70 billion, employs 13 million persons directly and two-and-a half times that number indirectly. The Indian food processing market is one of the largest in terms of production, consumption, and export and import prospects. [30]

**Packaging Industry in India**

An increasing population and growing consumer demand for packaged foods has forced food and beverages industry to look at new technologies that provide flexibility, ease of operation and constant tracking of the production process. Complete transparency is required along the production process for assuring consumers health and hygiene. This demands continuous monitoring and efficient traceability of the entire production process in the food manufacturing plant.

Interest in biodegradable disposable plastic items has steadily grown over the last decade. Disposable packaging materials used to ship and protect purchased items as well as disposable containers used for food and drink are of special interest. The idea that one time use items can be disposed off with the peace of mind, that they will not remain for centuries in a landfill, or as litter, is one of the tenets driving the recent interest in "green" technologies and lifestyles. With packaging materials, the reduction in usage of raw materials, re-use and recycling is of course the best route to sustainable lifestyle. However, for various reasons, in practice, much of the material ends up being discarded
to a landfill or accidentally shows up as litter. For these instances, it is advantageous to have a plastic material that would biodegrade when exposed to environments where other biodegradable materials are undergoing decay.

**Growth: Indian Food and Drinks Market**

With vast population base, growing middle class and strong macroeconomic environment, the Indian food & drinks market has emerged as the one of the fastest growing segments in the Indian retail industry. Rapid lifestyle transformation, particularly among those living in urban areas, has resulted into a dramatic increase in the demand for processed or health food, packaged and ready-to-eat food products. Arrival of food multinationals and proliferation of fast food outlets have further added to the growth in this industry.

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**Opportunity**

Supermarket sales will expand at a much higher rate than other retail formats. This is because greater number of higher income Indians will prefer to shop at supermarkets because of convenience, higher standards of hygiene, and attractive ambience.
It is expected that fruit consumption will increase at a CAGR of 4.33% for the period spanning from 2007-2011, highest among all the food products taken in this report.

The processed-food market is the main focus for foreign companies as this segment is underdeveloped and presents enormous potential for growth. The growth of modern, organized retailing — in contrast to the kiosks and small shops from which Indians have been purchasing food traditionally — will also increase the demand for value-added foods.

Rising household incomes, increasing urbanization, changing lifestyles and the rapid growth of the private-sector and dairy-processing industry should lead to greater demand for value-added, milk-based products, such as processed cheese, table butter and ice cream. [31]

Packaged food sales in India are forecast to soar by more than two-thirds over the next four years, according to research from industry analysts BMI.

Rising disposable incomes and the on-going urbanisation of India's population are set to drive the packaged food market in India, BMI said.

The analysts forecast that, by 2012, packaged food sales will climb over 67% to US$21.7bn, figures that add further weight to the perception of India as a key emerging market for multinational food manufacturers.

The young, urban, rich are also starting to demand more "premium" food and beverages, BMI said, a trend that looks set to propel per capita spending on packaged food.
"Although non-essential consumer goods are barely established at the mass-market level, premiumisation is already becoming a viable growth option, particularly among younger consumers in major urban centres," BMI said in its report.

With India's economy forecast to grow at 7.9% a year between now and 2012, multinational interest in the market is "massive", BMI said. However, local conglomerates are investing more in the country's food sector, the analysts added.

The likes of Reliance Industries and RPG have broken into India's burgeoning organised retail sector, while the likes of cigarette giants ITC and Godfrey have made moves into packaged food.

Food specialists, like dairy group Amul, are also looking to become "food generalists", BMI said.

"A dynamic industry should fuel competition, which will in turn heighten marketing and promotional spending, as well as drive down the price of non-essential, added-value items," BMI added. "Such a trend would fuel consumption and drive down food spending in value terms, with higher volume sales able to offset slightly lower per-unit sales prices." [32]

Around the world, burgeoning food prices have become a constant worry. According to data released by United Nation’s Food and Agriculture Organisation, the monthly food price index is up 3.4 per cent in January due to higher global prices of cereals, sugar and vegetable oils. The main reason for this escalation is adverse weather conditions that have
affected major food producers and exporters around the world. This includes Australia, Pakistan, Russia and many others.

Galloping inflation has led to escalating input costs. Companies have no choice but to go in for another price hike in the coming quarter to protect their margins.

Following the trend, most FMCG players have already announced price hikes in the recent times. ITC has decided to take a direct and indirect price increase of eight per cent (Financial Chronicle, February 3, 2011) on packaged foods where it has brands like Bingo and Sunfeast. Marico, Dabur India and Godrej Consumer Products are also all ready to hike product prices further. Biscuit giants Parle and Britannia have tried everything from reducing the number of biscuits per pack to reducing the size per biscuit to taking a direct price hike. On the contrary, Parle have been innovative in tackling this problem which can be understood from company’s recent plans to increase the package weight of its flagship Parle-G and Parle Marie brands by at least six per cent without any change in the maximum retail price (Hindu Business Line, February 9, 2011).

The rise in cost of packaging is yet another strain on FMCG companies which are already under pressure due to high prices of paper and metals that go into commodity packaging. In such a scenario companies like ITC which have in-house paper and packaging division are likely to have an advantage over competition. However, some commercial packaging firms are working on developing newer, cheaper packaging materials to control costs. The measures include tweaking the size and thickness of packages as well as replacing costly material with lower-cost alternatives. [33]
The Harmful Effects of Eating Processed Foods

Some of the many additives included in processed foods are thought to have the ability to compromise the body’s structure and function and are suggested to be related to the development of skin, pulmonary and psycho-behavioral conditions. Butylated hydroxytoluene (BHT) and butylated hydroxyanisole (BHA) are currently being investigated for their potential to damage genetic material and therefore promote cancer. Sulfites have been found to aggravate asthma (hypertext) in certain children and adults. Artificial colorings have been noted to cause hypersensitivity reactions in sensitive persons promoting conditions such as ADHD (attention-deficit-hyperactivity disorder), asthma and skin conditions such as urticaria and atopic dermatitis. Therefore, avoiding foods that contain these and other chemical additives may greatly contribute to health.

Artificial Sweeteners

One of the most commonly used sweeteners is the controversial compound aspartame. Aspartame gains its controversy because animal studies have shown that it can lead to accumulation of formaldehyde after consumption, and one of the breakdown products of aspartame in the intestine is the toxic compound methanol. However, low levels of aspartame have not shown direct symptoms in humans, so it is presumed safe in food products. There is a problem with this assumption, though, because so many processed products contain aspartame, and therefore people who consume mainly processed foods may be taking in relatively high levels of aspartame. Few real data have been collected to look at the level of aspartame the average person consumes and how this level may affect health, or the long-term effects in humans.
**Coloring Agents**

Most processed foods are colored with synthetic or additional coloring agents. Based on the idea that we "eat with our eyes", many food manufactures choose to enhance a color, even if the initial food is not as colorful. A variety of types of coloring agents are used, including many synthetic compounds. Besides the issues of ingesting compounds that are not natural, colorings are often used to improve the color of foods that have lost color during storage or from heat. The colored compounds in natural foods are some of the most important phytonutrients, however, and this loss of color can mean a loss of nutrient value, which may be masked by the addition of synthetic compounds.

Many of the artificial colorings featured on the GRAS list are derived from the manufacturing of coal tars, including FD&C Yellow#5 (tartrazine) and FD&C Blue#2 (indigo carmine). Some of these coloring additives have been found to promote hypersensitivity reactions in people, especially children. In sensitive persons, consumption of these artificial colorings has been linked to ADHD (attention-deficit-hyperactivity disorder), asthma, and inflammatory skin conditions such as urticaria and atopic dermatitis.

**Preservatives**

A major concern with processed foods is the use of preservatives. The most commonly used preservatives are butylated hydroxytoluene (BHT) and sulfites.
Butylated Hydroxytoluene (BHT)

BHT is controversial; in 1978, a government-sponsored review of safety data indicated that no direct toxicity was observed at the permitted levels in a food, however this report also determined that more studies were needed to assess safety. Since then, BHT has been shown to induce tumors in the stomach and liver in animals when used at high levels. Again, although this was allowed in foods at a low level per each food, it is one of the most common preservatives and is present in many processed foods. The amount consumed in the entire diet may be higher than the "permitted" level per food and remains a concern by many scientists.

BHT and butylated hydroxyanisole (BHA) are being investigated for their ability to damage genetic material. In addition, research has shown that these compounds can rupture and damage red blood cells as well as stimulate symptoms of chemical sensitivity.

Sulfites

Sulfites are also a common preservative. Sulfites are prohibited to be used in foods that provide the nutrient vitamin B1 because it can destroy this vitamin. Furthermore, some people are sensitive to sulfites and respond with adverse reactions. Due to the reports of adverse reactions, the FDA banned the use of sulfites on fruits and vegetables in 1986, and is still reviewing whether it should be banned from other uses. Sulfites have been found to aggravate asthma in children and adults. Between five and ten percent of chronic asthmatics are thought to be sulfite sensitive.
Pesticides

Organic foods offer a healthier alternative to conventionally grown foods, as they are not grown with any of the synthetic chemical pesticides or fertilizers that are suggested to pose great threats to our health. The Environmental Protection Agency considers a number of herbicides and fungicides to be potentially carcinogenic and therefore able to cause genetic damage leading to the development of cancer, and most pesticides are known to cause some risk to humans. Examples of pesticides include organophosphates, organochlorines, thiocarbamates, and organoarsenic compounds.

In addition to their potential to cancer, pesticides are thought to pose special health threats to children so the benefits of organic foods may be of paramount importance in safeguarding their health. Both the Natural Resources Defenses Council and the Environmental Working Group have found that millions of American children are exposed to levels of pesticides in their food that exceed limits considered to be safe. Certain pesticides are known neurotoxins, able to cause harm to the developing brain and nervous system which is why they may be particularly harmful to children. In addition, some researchers feel that children and adolescents may be especially vulnerable to the cancer-causing effects of certain pesticides since the body is more sensitive to the impact of these chemicals during periods of high growth and development.

Trans-Fats

Trans-fatty acids are an example of what can happen to essential nutrients when a food is processed. Also called hydrogenated fats, these fatty acids are found in margarine, vegetable shortenings, crackers, cookies, snack foods and numerous other processed
foods. Trans-fats are produced by a chemical process in which hydrogens are added to an unsaturated fatty acid. The food industry uses this process because it converts a liquid fat to a soft solid form, like margarine, and also because it increases the shelf-life for fats. In this process, however, the fatty acid molecule shifts structures to a structure that is not found in the body; that is, the fats in the body occur in what is called a "cis" 3-dimensional structure, and trans-fatty acids are the opposite of that, and are a "trans" structure. Chemically, they are different.

Your body notices this difference. Although you may be eating fat, and think that the fat you are eating will support your body's functioning, it instead is a different structure than the one that your body needs and your body has a different response to these fats. Trans-fats have been shown to increase LDL cholesterol (the one associated with increased risk of heart disease) and decrease HDL cholesterol, the "protective" cholesterol. So clear is the promotion of high LDL cholesterol levels by trans-fats, and the resultant association with increased risk for heart disease, that the FDA has been prompted to require these trans-fats be labeled separately on foods so consumers can see when they are present. Trans-fats have also been linked to certain cancers, including breast cancer, and labeling them will allow you to see how often they are used in processed foods and allow you to avoid these foods. [34]

Every day, 7 percent of the U.S. population visits a McDonald's, and 20-25 percent eat fast food of some kind, says Steven Gortmaker, professor of society, human development, and health at the Harvard School of Public Health. As for children, 30 percent between the ages of 4 and 19 eat fast food on any given day.
But that's just the tip of the iceberg. Americans get processed food not only from fast-food restaurants but also from their neighborhood grocery stores. As it stands, about 90 percent of the money that Americans spend on food is used to buy--that's right--processed foods.

Think about it ... if it comes in a box, can, bag or carton, it's processed. The fact that these foods are so readily available, and, often, of such poor quality, has led some, like associate professor of pediatrics at Harvard David Ludwig, to say that they're actually discouraging healthy eating and leading to a "toxic environment."

"There's the incessant advertising and marketing of the poorest quality foods imaginable. To address this epidemic, you'd want to make healthful foods widely available, inexpensive, and convenient, and unhealthful foods relatively less so. Instead, we've done the opposite," says Ludwig.

Processed foods have, indeed, been implicated in a host of chronic diseases and health conditions that are currently plaguing the nation. What follows is just a taste of the risks processed foods may present to your health

**Obesity**

The World Health Organization (WHO) says processed foods are to blame for the sharp rise in obesity (and chronic disease) seen around the world.
In one study by Ludwig and colleagues, children who ate processed fast foods in a restaurant ate 126 more calories than on days they did not. Over the course of a year, this could translate into 13 pounds of weight gain just from fast food.

"The food industry would love to explain obesity as a problem of personal responsibility, since it takes the onus off them for marketing fast food, soft drinks, and other high-calorie, low-quality products," Ludwig says.

However, "When you have calories that are incredibly cheap, in a culture where 'bigger is better,' that's a dangerous combination," says Walter Willett, M.D., D.P.H., professor of epidemiology and nutrition at the Harvard School of Public Health.

**Diabetes**

"In the last 50 years, the extent of processing has increased so much that prepared breakfast cereals--even without added sugar--act exactly like sugar itself ... As far as our hormones and metabolism are concerned, there's no difference between a bowl of unsweetened corn flakes and a bowl of table sugar. Starch is 100-percent glucose [table sugar is half glucose, half fructose] and our bodies can digest it into sugar instantly," says Ludwig.

"We are not adapted to handle fast-acting carbohydrates. Glucose is the gold standard of energy metabolism. The brain is exquisitely dependent on having a continuous supply of glucose: too low a glucose level poses an immediate threat to survival. [But] too high a level causes damage to tissues, as with diabetes," he continued.
Heart Disease

Many processed foods contain trans fatty acids (TFA), a dangerous type of fat. According to the American Heart Association, "TFAs tend to raise LDL ("bad") cholesterol and lower HDL ("good") cholesterol ... These changes may increase the risk of heart disease."

Further, most processed foods are extremely high in salt, another blow to the heart. One-half cup of Campbell's Chicken Noodle Soup, for instance, has 37 percent of the daily-recommended amount of sodium.

"Probably the single fastest way to reduce strokes in this country is to halve the amount of salt that's added to processed food," says Tim Lang, professor of food policy at the City University, London.

Cancer

A seven-year study of close to 200,000 people by the University of Hawaii found that people who ate the most processed meats (hot dogs, sausage) had a 67 percent higher risk of pancreatic cancer than those who ate little or no meat products.

A Canadian study of over 400 men aged 50 to 80 found similar results. Men whose eating habits fell into the "processed" pattern (processed meats, red meat, organ meats, refined grains, vegetable oils and soft drinks) had a significantly higher risk of prostate cancer than men in the other groups. Men who ate the most processed foods had a 2.5-fold increased prostate cancer risk.

Yet another study published in the journal Cancer Epidemiology, Mile Markers, and Prevention found that refined carbohydrates like white flour, sugar and high fructose corn
syrup is also linked to cancer. The study of more than 1,800 women in Mexico found that those who got 57 percent or more of their total energy intake from refined carbohydrates had a 220 percent higher risk of breast cancer than women who ate more balanced diets.

Acrylamide, a carcinogenic substance that forms when foods are heated at high temperatures, such as during baking or frying, is also a concern. Processed foods like French fries and potato chips have shown elevated levels of the substance, according to the Center for Science in the Public Interest (CSPI).

"I estimate that acrylamide causes several thousand cancers per year in Americans," said Clark University research professor Dale Hattis.

**Food Additives: Unknown Effects**

The Food and Drug Administration (FDA) maintains a list of over 3,000 chemicals that are added to the processed food supply. These compounds do various things to food: add color, stabilize, texturize, preserve, sweeten, thicken, add flavor, soften, emulsify and more.

Some of these additives have never been tested for safety--and require no government approval--but instead belong to the FDA's "Generally Recognized as Safe" (GRAS) list. An item is "safe," as defined by Congress, if there is "reasonable certainty that no harm will result from use of an additive."

Some compounds that are known to be toxic to humans or animals are also allowed, though at the level of 1/100th of the amount that is considered harmful.
Potential side effects from the additives vary, and are controversial. For just one common food additive, monosodium glutamate (MSG), for example, the following symptoms have been reported:

- Numbness
- Burning sensation
- Tingling
- Facial pressure or tightness
- Chest pain
- Headache
- Nausea
- Rapid heartbeat
- Drowsiness
- Weakness
- Difficulty breathing for asthmatics

As is the case with most food additives, some people have no side effects, but others may become ill. \[35\]

**MSG**

MSG, or monosodium glutamate, is a chemical additive commonly used by the food industry as a “flavor enhancer”. MSG is an extremely potent chemical stimulator with no substitute on the horizon. It has been used by the food industry and in many food types since it was first commercialized in Japan in 1909.

Chemically speaking, MSG is the sodium salt of glutamic acid (thus, the name monosodium glutamate).

Glutamic acid was first isolated from gluten (wheat) and it was discovered as “the essence” of the tastiness of great soups prepared in Japan.
In addition to MSG, there are other flavor enhancers used by the food industry such as disodium 5’-inosinate (IMP) and disodium 5’-guanylate (GMP). [36]

**Use of MSG in Foods**

The main use of MSG around the world is for a flavor enhancer. A flavor enhancer is a substance that is added to a food to supplement or enhance its original taste or flavor. Another term commonly used for substances such as MSG is that of *flavor potentiator* [38].

**Foods Containing MSG and Hidden Sources of MSG**

MSG is used around the globe in soups and broths, sauces, gravies, and flavoring and spice blends. MSG is also present in a variety of processed foods such as canned and frozen meats, fish, poultry, vegetables, and ready-to-eat food plates, dressings, ketchup, mayonnaise, soy sauce, sausages, snacks, some processed cheeses, soup powders for instant noodles, etc.

MSG usage is sometimes “hidden” in food labels under different names. If you see “natural flavorings”, “hydrolyzed protein” and “spices” in a food label you are probably seeing a hidden way to “report” MSG in a food label, so be aware of the presence of MSG on foods that you thought were MSG free.

**MSG and its Side Effects can be Bad**

In the United States, MSG is included in the GRAS (Generally Recognized As Safe) list of food ingredients by the US Food and Drug Administration along with salt, pepper, sugar, and vinegar. The Scientific Committee of the European Union also recognizes MSG as safe and in Japan MSG is a *food additive* allowed to be used with no
limitation. However, in 1968 some people reported having “symptoms of burning, numbness, and a tight sensation in the upper part of the body“ after having had a meal at a Chinese restaurant.

According to Russell Blaylock, author of a book titled “Excitotoxins the Taste that Kills”, MSG is an excitotoxin, which basically means, a chemical substance that excite your neurons (brain cells) and that may cause its death. Blaylock proposes that excitotoxins, like MSG, may aggravate many neurological disorders such as Alzheimer’s and Parkinson’s disease. MSG (and exitotoxins) side effects may include seizures, brain cell and damage, allergies, rashes, asthma attacks, headaches, and brain tumors.[37]

A research study, published in the British Journal of Psychiatry, shows that people who eat a diet high in processed food increase their chances of depression. The study showed that those who avoided processed food and instead ate a healthy amount of vegetables, fruit and fish, or what is known as the Mediterranean diet, actually lowered their risk of depression.

Now you would imagine that a study on depression would involve a group that’s most associated with the term – teenagers. Contrary to popular and anecdotal belief, the study was conducted on 3,500 middle-aged civil servants, a group we’re guessing is the next most affected. The study was conducted over a five year period and after equalising the content for factors like sex, age, education, physical activity and chronic diseases, they found that people who ate the most whole foods had a 26% lower risk of future depression and the lot with a diet high in processed food had a 58% higher risk of depression.
The study openly admits that they are aware that if you are already depressed, you are more likely to eat food that’s not good for you i.e. processed food. This angle of depression causing unhealthy dietary habits, they say, is best left for another study.

To sum it up, people’s diets are becoming increasingly unhealthy. If you’re not eating healthy, you could become depressed. If you’re already depressed, you’ll end up eating unhealthy. Moral of the story: Give up, it ain’t worth it. [39]

**Emerging Trends: Organic Food**

While organic food and health food are emerging as a global trend in the food and food processing sector, India remains a traditional grower and consumer of organic food. The global retail market for organic food has grown to US$ 100 billion from US$ 35 billion over the last three years. The exports of organic food from India have grown to US$ 65 million over the past one year from US$ 21.6 million two years ago.

Some players, like Navdanya, organically cultivates crops like jowar, bajra, millet, in its 21 acre farm in Dehradun and sells it from its retail outlets in Delhi and Mumbai. The number of such growers has been rising in the Dehradun valley and Bundelkhand. APEDA in association with the Agriculture Ministry has taken an initiative to convert 20,000 farmers, and a total area of 75,000 hectares to organic farming over the next three years.

Following suit, the Darjeeling Tea Association (DTA) has mounted efforts to increase the production of organic tea. According to the industry experts, about 37 per cent of the total
crop grown on the slopes of the eastern Himalayas, at present, is organic tea, as per certifications given by European and Japanese agencies. DTA is aiming to organically produce the majority of the champagne of teas by 2010.

According to the estimates of the Ministry of Food Processing Industry, currently, the food processing sector contributes nine per cent of the GDP and there is immense scope for further growth. In a bid to give a boost to the sector, the government is considering a proposal to allow foreign direct investment (FDI) in the food retail sector. While 100 per cent FDI is already allowed in food processing and 51 per cent FDI in single-brand food retailing, the next step will be allowing FDI in select food items, fresh and processed fruit and vegetables, which may include retailing of farm and dairy produce, marine and poultry products. The initiative would underline inclusive growth in the food sector through marketing-driven farming, disciplined procuring from the farms, state of the art processing, and organized retailing.

**Health foods are getting more focus**

Health Foods, dietary supplements and nutraceuticals are increasingly gaining grounds and the category is growing fast. Even in the regular category, marketers are increasingly focusing on communicating the nutrition and health aspects of the product more than the associated fun and convenience that goes with the consumption of any processed food. This trend is now more visible and as younger generation has become more health conscious marketers are trying to focus on this attribute. As safety, health and nutrition become more important and the regulatory mechanism has become more stringent the
nutritional quality assumes significance. There is a distinct shift from consumption of so-called junk foods to health foods.

Traditional soft and synthetic beverages are declining in growth rate whereas fruit beverages are rapidly growing. This trend has even percolated down to alcoholic beverages. There are increased social awareness about what you drink in public. Those who still drink hard liquor have also shifted to white variety. Therefore, there is preference for white rum, vodka and gin. All these go well with fruit juices or cold drink. Therefore, in social gathering you will not be able to make out what he or she is drinking. Otherwise, there is rapid growth of wine consumption. Although this increased trend on health is mainly still a urban phenomenon but this is gradually influencing the other smaller towns as well. We can see that there is a significant shift to promoting products on health platform.

Nestle launched yoghurt earlier also. It did not work well. They have relaunched the product again taking health platform. They now say that millions of microbes are working for you for better digestion. The product has now been clearly positioned on nutraceutical platform as a probiotic. Now soya based products are launched by many companies. Even leading protein isolate manufacturer E.I.DuPont also introduced a range of high quality soya products under the brand ‘Soyday’ produced for and on behalf of Solay, USA. The product is imported from Brazil and repacked in India for local market. And I was told that it is doing well and growing.
The same plant is now producing for Godrej. Britannia had set up a composite soya processing plant in Vidisha in Madhya Pradesh but the project failed to take off and subsequently the plant was sold to S.M. Dyechem. Today one can find that soya products have made a come back after experiencing a failure. The reason is that there is shift in consumer psyche. Health is a dominant consideration for buying and consuming any food products particularly amongst youth.

Health is wealth is what modern consumers now believe. For a healthy life quality of food is a must. Food Safety and Standards Act, being implemented in phases would be expected to take care of the claim of the marketers. The nutraceuticals and functional foods market is now said to be growing at a rate of 25 to 30 percent in volume terms. There are many players now in the market. Notably amongst those are Herbalife, Amway, Nestle etc. Nutraceuticals are being promoted as an alternative medicine. Most of these companies are following multilevel marketing approach to promote their products in India. They are clearly avoiding mass media but depending on the well organized distribution set up and a dedicated sales force, most of whom are working part time in the system.

The health connotation is so important that apparently not so healthy food like butter is also trying to appear in the market with healthy note. Taking into account the changing life style Amul reduced salt in butter and introduced reduced salt butter in the market. Amul reduced salt butter has almost 50 % less salt than table butter.
The increased urbanization has given a boost to demand for health products. With rise of disposable income and educational level, the awareness for nutrition and health improves which fuels the demand of these health products. Keeping this trend in mind Amul had drawn up the plan and introduced a range of functional foods like sports drink ‘Srtamina’, pro-biotic ice cream, probiotic lassi and curd and high calcium milk and now low sodium (salt) butter.

It is interesting to note that some of these products like lassi, dahi, ice cream are same as before but are being promoted on a different platform highlighting health aspects of the products. The trend is now health and as long as it works we have no quarrel.\

Despite low levels of public awareness compared to western markets, functional foods and ingredients are finding growth in areas of India, as consumers switch on to the promise of healthier foods, beverages and supplements.

The likes of probiotic-fortified yoghurt, buttermilk, omega-3-fortified health drinks and baby foods are winning over swathes of Indian consumers, especially those in the large conurbations such as Mumbai and New Delhi, according to a new Frost & Sullivan report.

While educating the public remained a “key challenge” for industry, local manufacturing of polyunsaturated fatty acids (PUFA), probiotics and enzymes was coming on stream to service both local and international markets.
'The market has good scope of growth considering the positive growth of the Indian food processing industry in terms of new investments, new product development,” said Mamta Wadhwa, senior director at Frost & Sullivan, South Asia and Middle East.

However unclear regulations about new functional ingredients and health claims was acting as a brake on innovation and market growth.

The report noted 87 per cent of PUFAs (polyunsaturated fatty acids) were used in food supplements, 13 per cent in foods.

Probiotics have traditionally been consumed in the form of food supplements in India, but platforms such as yoghurts and ice creams are becoming popular, Frost observed.

The enzymes market grew at 11 per cent from 2007 to 2008, following 12 per cent growth from 2006.

Frost observed that the global economic recession had not had a major impact on the Indian enzymes market the US, the EU and Japan remaining strong markets and China, South Korea, India, and Taiwan offering “good growth opportunities”. [41]

Nutraceuticals is one such word, which means "functional food". The term appears to be a take-off from the word pharmaceutical, which means pertaining to drugs; thus a nutraceutical is a substance that has a role or function related to nutrition or promotion of health by feeding.

A nutraceutical is the opposite of "junk food". The latter is the stuff that is marketed in a seductive and high-pressure manner by hamburger joints and snack stores. The classic example of junk food would be a jumbo hamburger, large French fries and a cola drink. It
is "junk" because it is high in calories, in fat and in red meat; it is extremely acidic because of the cola, and nutritionally not even a B grade.

With our increasing understanding of the nutritive value of various food items, and the basic biochemical roles that they play, we are getting to appreciate the values of the menu that various societies have adopted around the world. Nutritionists in the West now believe that the diet that offers the best value to bodily health is the Mediterranean cuisine - namely fish, whole wheat bread, olive oil, tomato and greens in the salad, garlic and onion, red wine and fruits. East Asian food would seem to score an A grade as well, with its glutinous rice, tofu (soya bean curd), fibrous fruits and tea (which has about the same health-promoting value as red wine).

We have come to understand that a high fibre intake does a lot of good to the body. It helps in lowering cholesterol levels in the blood; this leads to less plaque formation, prevents the blocking of blood vessels, and hence reduces the risk of hypertension and stroke, It helps in enhancing weight control, and in a better glycemic control (useful for diabetics). High fibre diets also help in reducing the risk of certain forms of cancer, improving gastro-intestinal function and so on. [42]

Most Indians know that turmeric has healing properties. Some might also think, wrongly, that Western scientists are trying to hijack Indian knowledge about this plant. But few would suspect that this ubiquitous Indian herb is causing ripples in the scientific world, as scientists keep discovering new properties in this ancient plant. In the latest study on this compound, scientists at Michigan State University found last month that curcumin — the yellow pigment in turmeric — inhibits the reproduction of the herpes simplex virus at
even low concentrations. Curcumin’s anti-inflammatory properties are well documented, but it now turns out that it has anti-malarial, anti-HIV and anti-tumour properties, among a host of other healing effects.

Not quite. Despite many observations in laboratories, scientists have not studied the effect of curcumin on human beings very well. Many aspects of curcumin’s biological action are not well understood either. Scientists now suspect that curcumin also has anti-diabetic properties but they do not know the mechanism of its action. “Curcumin lowers the production of glucose in the liver, but its effect on muscles is not well understood,” says Suresh Mathews, assistant professor at Auburn University in the US.

As scientists improve their understanding of this molecule’s biological action, pharmaceutical companies the world over are waiting to exploit its curative properties. However, curcumin is not likely to be used too much as medicine, at least not in the conventional way. It would be part of food, of a specific variety called functional foods. In a few years from now, many of us might be eating curcumin as part of food. Not in the way Indians use it in their cooking, but as a specially formulated additive meant to control specific diseases over long periods of time.

Normal food, unless eaten purely for pleasure, is consumed for nutrition. The word functional food is used to describe any food that has a value beyond nutrition. They are thus specially fortified food for a specific purpose as well as nutrition. As scientists discover more and more herbal compounds that have healing effects, the functional foods
industry is busy trying to use them in different kinds of foods that could help control chronic diseases. Obesity and diabetes are on top of their priority list, but functional foods are also being developed for cardiovascular diseases, osteoporosis and digestive disorders.

Some of them are already in the market, even in India. Probiotic yoghurt — yoghurt with specific bacteria in it — is a well known functional food all over the world. Fibre fortified bread, for example, can be classified as a functional food although it somewhat stretches the definition. As these examples show, functional foods do not have to be complicated in theory. However, the new generation of functional foods being developed in labs would go well beyond fibre foods and healthy oils and bacteria-rich yoghurt. They are almost medicine. In fact, they will be medicine.

Sridevi Devaraj and Iswarlal Jialal, professors at the department of medicine and pathology at UC Davis, studied the effect of low-calorie orange juice fortified with sterols, plant-based steroids that can lower cholesterol. They found that such orange juice reduced both low density lipids (LDL) and C-reactive protein, a molecule increasingly associated with inflammation and heart disease. Reducing both LDL and C-reactive protein in the blood will reduce the risk of heart attack considerably more than either factor alone. We could probably give sterols as a supplement. But it works better as a functional food. “Studies have shown that functional foods are generally better accepted than supplements,” says Devaraj, Every day, biology laboratories around the world are announcing the beneficial effects of some plant-derived ingredient. Last week, scientists at the London School of Medicine and other UK-based institutions showed that drinking a glass of beetroot juice a day can
lower blood pressure significantly. Regular consumption of beetroot juice is thus beneficial for hypertensives, but it may not be practical because you would then need to drink a different vegetable or fruit juice for each disease. “Convenience is a major factor in the development of functional foods,” says Swaminathan Subramanian, head of business development in Rheoscience, a Danish drug discovery company venturing into functional foods (Rheoscience has a collaborations with some Indian companies to develop functional foods). In fact, the art of combination is one of the principles of developing functional foods.

Consider curcumin itself. It has been shown that curcumin absorption improves with piperine, a molecule found in pepper and chillies. The traditional Indian way of cooking with turmeric and chillies makes perfect sense, according to modern science. However, the amount of turmeric that we use, while providing some beneficial effects, is not enough to control many chronic diseases. Indians consume, at the most, 100 mg of curcumin a day. Curcumin as functional food might need as much as 6 mg or even more. Clinical studies have shown that people tolerate up to 8 grams well without toxic effects. How much curcumin should a functional food contain if it should help control diabetes?

As scientists come up with answers to these questions, functional foods can go from simple formulations to complex ingredients containing tens of substances. And that could spawn a revolution in both the healthcare and food industries. [43]