Executive Summary

India is the largest producer of milk in the world. The milk revolution ("Operation Flood"), started by National Dairy Development Board (NDDB) in 1970, transformed India from being milk deficient to the largest milk producer surpassing USA in 1988. The program was led by Mr Verghese Kurien, known as the Father of White Revolution in India. The Indian Dairy industry is at the cusp of another revolution, moving towards increased contribution from various milk products. India, in its quest to become a matured dairy industry, is aggressively transitioning from just plain vanilla loose/ pouch milk to value-added products (VAP) market and from unorganized/local to more of an organized and branded market. These two structural tailwinds of shift from unorganized to organized market and from liquid milk/ powder to value-added dairy products will provide long-term growth visibility to the organized dairy sector. The value accretive products though will require capex in the initial phase, will improve the margins and return on investments over long run for the companies in the sector. The demand for value-added products will be driven by changes in macro-economic factors like increase in urbanization, nuclear families, working women and improved per capita spending.
Overview of the Indian Dairy Industry

The dairy sector in India has grown substantially over the years. According to NDDB data, India ranks first among the world’s milk producing nations, achieving an annual output of 147 million tonnes during the year FY16 which is approximately 1.5 times of the US and 3 times of China.

The following graphs set forth the total milk production and consumption volumes along with the key milk-producing states in India for the periods indicated:

Source: Industry reports, NDDB
Structure of the Indian Dairy Industry

The Indian dairy industry is divided into the organized and unorganized segments. The unorganized segment consists of traditional milkmen, vendors and self-consumption at home, and the organized segment consists of cooperatives and private dairies. As per the Annual Report for FY17 of Dept. of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture & Farmers Welfare, GOI, co-operatives & private dairies still procure only about 20% of the milk produced in the country, while 34% is sold in the unorganized market and about 46% is consumed locally. However, in most of the developed nations, 90% of the surplus milk is processed through organized sector.

Source: Dept. of Animal Husbandry, dairying & fisheries, Ministry of Agriculture & Farmers Welfare, GOI

There is immense room for the organized sector to gain market share of marketable milk from unorganized sector by introducing standardization in milk quality testing and transparency in computing consideration being paid to farmers for their milk along with educating farmers on best dairy and animal husbandry practices. This could also dovetail well with the shift of consumer preference from unorganized to organized market. As per the Department of Animal Husbandry, Dairying and Fisheries, the organized milk handling is expected to grow from 20% at present to 50% by 2022-23.
**Indian Dairy Industry rests on four pillars**

The dairy industry in India is broadly built on the four pillars, namely, Demand, Output and procurement, Prices, and Employment.

<table>
<thead>
<tr>
<th>Demand</th>
<th>Milk Procurement</th>
<th>Price</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>With the increase in population &amp; large vegetarian population, the demand for milk and milk products is continuously increasing and will continue to do so in the future. With the increase in the income, a larger proportion of the income will be spent on dairy products as opposed to that for other primary sector products like pulses and food grains.</td>
<td>As per the above chart milk production is increasing over the years matching with the demand as indicated by the chart. Further, the Agriculture sector contributes to ~30% of the primary GDP and the contribution from dairy industry continued to be the highest. Hence, in order to increase the value of the Agricultural sector and the overall GDP, focus on the increase in the output of the Dairy sector is essential. In India, milk is produced by cattle owned by farmers hence, dairy companies are associated with the farmers/agents for milk procurement. As a result, having association with the number of farmers along with the establishment of strong procurement network and infrastructure facilities, like bulk coolers and chilling centres, plays an important role in supply of raw milk.</td>
<td>A steady increase in price of milk/milk products increases rural income and provides impetus for dairy farming. Dairy industry will be a driving factor for governments vision of improving farmer/rural income. With improved economic factors and milk being vital for consumption, consumers too have shown resilience towards the upward price movement. During the last three years (FY14-FY16), the average increase in milk procurement cost is 13.79%</td>
<td>70 to 76 million households are still dependent on the dairy industry especially in the rural areas, largely female population. Further, in India, around 40% to 50% of the cost of milk is passed onto the farmers as against average 50% in the developed countries. This is a big incentive for the farmers to increase the production and sale of milk.</td>
</tr>
</tbody>
</table>

Source: Industry, CARE Ratings
Key factors driving consumption:
The significant factors driving the growth in the dairy sector (especially VAP) are increasing urbanization, working women, increased disposable income and rise in HORECA (Hotels, Restaurants & Cafes) segment.

Emerging value-added categories
During the last five to ten years, India has seen dramatic shift towards consumption of value-added products such as cheese, yoghurt, UHT (ultra-heat treatment) milk, flavored milk, and whey. To tap the advantages of the changing consumer food preferences, most organized players are expanding product
portfolios in the value-added segment. This segment offers high growth potential and better margins versus the liquid milk and Skimmed Milk Powder (SMP) segment.

**Average EBITDA margin for the value added products across categories.**

Source: Industry interaction

**Competitive Landscape**

The value-added products overall contribute to ~35% of the total dairy market in India and commodity products together contribute to almost ~65% of market share. Furthermore, within the value-added segment, largest product category is ghee, having a market share of ~15% in the overall dairy market. A key characteristic of emerging value-added products like UHT milk, flavored milk, cheese and whey is that 100% of these products are sold through organized
market. The value-added products market is under-penetrated, thus having tremendous scope for the growth and is expected to grow at much faster rate as compared with the commodity market.

Considering the higher growth potential, the private companies have been adding capacities in the value-added product categories since past five years such as cheese, curd, flavored milk, along with addition in the milk procurement capacities. The private players are also investing in brand building exercise and aiming to add more B2C business in their portfolio.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Future Capex Plans</th>
<th>Brands</th>
<th>Capex Amount (Rs. crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heritage Foods Ltd.</td>
<td>Addition in the existing capacities in curd and whey products segment</td>
<td>Heritage</td>
<td>70.00 to 75.00 (for FY18)</td>
</tr>
<tr>
<td>Gujarat Cooperative Milk Marketing Federation Ltd (GCMMF)</td>
<td>Additional capacities in cheese and chocolates</td>
<td>Amul</td>
<td>3000.00 (Upto 2020)</td>
</tr>
<tr>
<td>Kwality Ltd.</td>
<td>Additional capacities in value-added product categories like Cheese, Paneer, UHT Milk, Flavoured Milk and Table Butter</td>
<td>Dairy Best</td>
<td>520.00 (for FY18 and mid FY19)</td>
</tr>
<tr>
<td>Parag Milk Foods Ltd.</td>
<td>Expansion and modernization of existing plants and improvement in marketing and distribution infrastructure</td>
<td>Go, Gowardhan, Topp Up</td>
<td>64.50 (for FY18)</td>
</tr>
<tr>
<td>Prabhat Dairy Ltd.</td>
<td>Upgradation of plant and machinery</td>
<td>Prabhat</td>
<td>40.00</td>
</tr>
</tbody>
</table>

(Source: Company Annual Reports, News)
Below chart depicts VAP contribution and PBILDT margin for listed dairy players in FY16:

Source: Company Annual Reports

As informed by the listed companies to the stock exchanges, the PBILDT margin for FY17 is in the range of 6% to 9%. Out of the above, two companies have reported lower PBILDT margin on account of higher milk procurement cost during FY17 as compared with FY16 and increase in selling & advertisement costs.
The financial performance of dairy companies is also influenced by a mix of B2B and B2C sales along with the product mix of VAP and liquid milk. Companies with higher B2B mix have high working capital requirements on account of higher debtor days as against companies having higher proportion of B2C sales spend more on advertising and brand building. The companies generally aspire to have more of B2C share than B2B and are spending heavily on brand building. The chart above on selling and distribution (S&D) expense depicts increase in S&D expense as a percentage of total cost over the past 5 years. Further, CARE believes that the ideal combination of VAP along with B2C will drive margin growth going forward.
Opportunities in Indian Dairy Industry

As mentioned earlier, India is the world’s largest producer of milk; however, the country’s dairy market is highly fragmented, unorganized and is dominated by local milkmen, regional brands and milk cooperatives. The sector has attracted several investors in the recent years, and has also seen consolidations. Strong producer prices, a promising outlook for dairy consumption and government incentives have been attracting robust investments to the dairy processing sector.

The recent investments by global companies in the Indian Dairy Companies are as under:

<table>
<thead>
<tr>
<th>Indian Company</th>
<th>Investing Company</th>
<th>Amount (Rs. In crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwality Ltd.</td>
<td>KKR India, the local arm of the New York-based buyout firm</td>
<td>600.00</td>
</tr>
<tr>
<td>Tirumala Milk</td>
<td>Lactalis</td>
<td>1750.00</td>
</tr>
<tr>
<td>Anik Industries</td>
<td>Lactalis</td>
<td>470.00</td>
</tr>
<tr>
<td>Creamline Dairy</td>
<td>Godrej Agrovet Ltd.</td>
<td>150.00</td>
</tr>
<tr>
<td>Dodla Dairy</td>
<td>Cargill Ventures</td>
<td>110.00</td>
</tr>
</tbody>
</table>

Source: Industry News

Recently, companies like Prabhat Dairy Ltd and Parag Milk Foods Ltd have also come out with IPOs reflecting changing investor perception towards the dairy industry.

Government Initiatives

Government of India is making efforts for strengthening the dairy sector through various Central Schemes such as “National Programme for Bovine Breeding and Dairy Development” and National Dairy Plan (Phase-I).

- The restructured Scheme National Programme for Bovine Breeding and Dairy Development (NPBBDD) was launched in 2014 with the budget provision of Rs.1,800 crore for implementation during 12th Plan.
Actual implementation of National Programme for Bovine Breeding has been initiated from 2014-15. Till November 2016, 27 projects from 27 states with the total project cost of Rs.1,077.83 crore have been approved, and out of this, amount of Rs.332.91 crore has been released to the states for implementation of the project including funds released under the Rashtriya Gokul Mission.

- In order to meet the growing demand for milk with a focus to improve milk animal productivity and increase in milk production, the Government has approved National Dairy Plan Phase-I (NDP-I) in February 2012, with a total investment of about Rs.2,242 crore to be implemented from 2011-12 to 2016-17. As per the NDDB report, total fund utilization till September 2016 has been Rs.945.25 crore out of which Rs.780.28 crore is NDP-I grant and Rs.164.97 crore is the contribution of Implementation Agencies implementing sub projects. This will prove beneficial to the dairy and livestock production in the coming years as it will improve productivity and cattle numbers.

Furthermore, the following incentives have also been provided by the Government in relation to cold chain facilities: (source: MOFPI)

- Section 80-IB of the Income Tax Act provides deductions in respect of profits from industrial undertakings related to Cold Chain. For the first 5 years, the deductions are @ 100% and then @25/30% for next 5 years.
- Under Section 35-AD of the Income Tax Act 1961, deduction @ 150% is permitted for expenditure incurred on capital investment in setting up a cold chain facility.

Limitations of Indian Dairy Industry

1. Dominance of unorganized sector

As mentioned earlier, unorganized sectors have predominance over the Indian Dairy Industry. On account of the same, despite India being the largest producer of milk and milk products, none of the major Indian dairy companies feature on the list of top 20 major dairy giants. Gujarat Cooperative Milk Marketing Federation, AMUL, the largest dairy in India, recorded sales of Rs.270 billion in FY17 which is approximately $3.45 billion which is only a fraction of the sales of the major global players.
2. **Per capita milk consumption**

The per capita consumption of milk at 97 liters per year is well below that of other major milk markets, except for China as illustrated in the chart below:

![Per capita milk consumption chart](chart.png)

Source: NDDB

3. **Regional Play**

Being a highly perishable product, milk is required to be procured from nearby areas in order to take it for processing. Furthermore, for the liquid milk, procurement and distribution distance should be minimal for the economies of profitability to play out. Further, the availability of animals in a particular area, farmers’ inclination towards dairy, demand and supply for the milk and dairy products within a region affect the prices of the milk. As a result, the milk prices in India vary with state to state and region to region within a particular state.

4. **Weather Conditions and environmental factors**
A temperate weather is more conducive to higher milk production – The raw milk availability declines during summers. A drought or a rainfall deficit results in increased cost of cattle feed and reduced availability of cattle fodder thereby constraining milk supply. Such adverse weather and seasonal conditions may lead to a spike in raw milk prices.

Credit profile of the dairy companies rated by CARE

The credit risk profile of dairy companies in the last two to three years has improved on account of increased profitability, scale and improved capital structure. The migration of the companies from below investment grade to investment grade over past two years is visible from the below-mentioned chart. During FY17, 48% of the companies rated by CARE Ratings Ltd. were above investment grade rating (rated CARE BBB- & above) as against 43% in FY14. Furthermore, there have been 18 upgrades in the ratings over the last 3 years as against 10 downgrades.

Source: CARE Ratings
Total clients: FY17 -46(no) FY14 – 28(no)
FY14 – Ratings based on FY13 financials along with the quarterly data
FY17- Ratings based on FY16 financials along with the quarterly data
The following charts depict the improvement in key ratios in the dairy sector

Source: CARE (Financials combined for 25 companies)

**Revenues and margins:**

The average PBILDT margins increased from 3.69% in FY14 to 5.52% in FY16 on account of introduction of new product lines especially in the value-added product categories in order to improve the operating margins.

**Capital structure:**

The industry has seen an overall improvement in the capital structure with the improvement in overall gearing from 4.17x as at the end of FY14 to 2.22x at the end of FY16. The same is on account of increase in profitability, thereby networth and capital infusion by private equity players & IPO offerings.

**Operating cycle:**

With increase in the share of value-added products in the overall sales of the companies, there is a rise in the operating cycles. This is on account of increase in the shelf life of the products (20 to 50 days) and higher credit periods as against that of liquid milk (2 days).
Industry/ Credit outlook

The long-term outlook of Indian dairy sector is favorable on account of increasing population, increase in per capita consumption, increase in expenditure on package food, brand awareness, urbanization & increase in nuclear families and government support. Dairy industry in India grew at a CAGR of approximately 16% in the last 5 years ending 2016, and milk production has grown at a CAGR of 5%. The total production of milk and dairy products in India is expected to increase from 147 MMT in 2015 to ~190 MMT in 2021, and total consumption of milk and dairy products is expected to increase from 138 MMT in 2015 to ~200 MMT in 2021. India’s dairy industry is expected to maintain growth at a CAGR of 14% to 15% over 2016 to 2021. The growth would be primarily driven by increase in the demand for value-added milk products. Value-added products are expected to grow at 19%-20% and liquid milk is expected to maintain growth rate of 3%-5%. This will prove beneficial to the organized sector and prove a catalyst in the shift of the industry from unorganized to organized players.

Credit outlook

The growth in the dairy industry driven by VAP largely from the organized players will drive margin growth for the industry. In the medium term, the players will have to focus on improving procurement strategy and initiate capex for enhancing capacities and invest in supply chain. Post stabilization of the capex, the return ratios and leverage ratios are expected to improve. CARE Ratings expects the credit profile of the private dairy players to remain stable over the medium term till the capex phase is complete.