



Catalysing a growth path

AETL has emerged as a dominant player in the highly specialised enzyme market

C.L. and Piyush Rathi: surging ahead

Advanced Enzyme Technologies Ltd (AETL) is today the largest Indian enzyme company. Fully integrated, it is engaged in the research and development, manufacturing and marketing of over 400 proprietary products, developed from over 65 indigenous enzymes and probiotics. The Mumbai-based company, incorporated in 1989 as a small enzyme formulation and trading entity (Advanced Biochemicals Ltd), is today ranked among the top 15 global enzyme companies (in terms of enzyme sales), and has the second highest market share in the domestic market, next only to the world's largest enzyme company Novozymes.

The ₹350-crore company offers these products to a global clientele of

over 700 customers across 50 countries, operating in two primary business verticals, namely healthcare and nutrition (human and animal), as also bio-processing (food and non-food). Generating more than 60 per cent revenue from overseas sales, spanning across the US, the EU and other parts of world, it supplies value-added and eco-safe enzyme products to diverse end-user industries. These include human healthcare and nutrition, animal nutrition, as also sectors such as baking, dairy & cheese processing, fruit & vegetable processing, cereal extraction, brewing, as also industries like textiles, leather processing, paper & pulp processing. The company caters to leading names including Sanofi India, Cipla, IPCA,

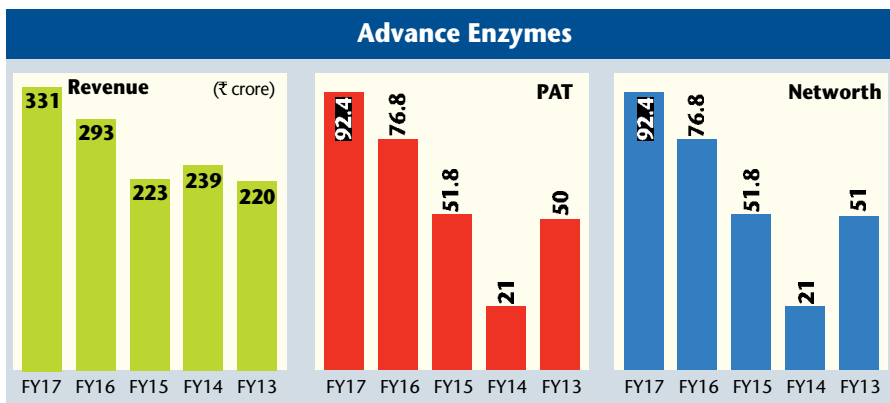
Torrent, Godrej Agrovet, Sugana Foods, Hindustan Unilever and SABMiller.

AETL has over 500 employees and boasts of seven modern, R&D-backed manufacturing facilities (total fermentation capacity: 420 cubic metres) – five in India and two in the US. Recently, the company, one of the largest listed pure enzyme global players, acquired a 70 per cent stake in Hyderabad-based JC Biotech Pvt Ltd, engaged in the manufacture and marketing of biotech products, including API enzymes.

The manufacture of enzymes is driven by an extensive focus on R&D of various enzymes, enzyme blends, enzyme products and customised enzyme solutions. Its experienced



SANJAY BORADE



fermentation process development, applied microbiology, proteomics and application development. The company's application development laboratories focus on innovative enzyme applications that lead to improvement in product quality and process efficiency across the various industries it serves.

Integrated player

It has been granted 13 patents (including one each in the US, Australia and New Zealand) have been submitted. AETL also has 11 food enzymes dossiers filed with the European Food Safety Authority and one GRAS dossier with the USFDA. The company spends over 3-4 per cent of its revenue in R&D and also has 135 trademarks registered in its name. The company has received Indian FDA certification for several of its products as well as other global standard certifications such as HALAL, Kosher, NPOP Organic, GOTS, GMP+, etc.

Over the years, the efforts and achievements of the company have been well recognised. In 2014, it was awarded the Bio-excellence award for 'Best Industrial Biotech Company' by the Department of Information Technology, Biotechnology and Science & Technology, Government of Karnataka. The company also received the 'Most Innovative Exporter' award organised by Dun & Bradstreet in 2012 and the 'Emerging India Awards 2010' for the life science (pharmaceuticals & chemicals segment) by ICICI Bank, Business Banking, and CNBC TV18. Further, it has also been recognised as a 'Star Export House' by Director General, Foreign Trade.

"We have been sourcing enzymes

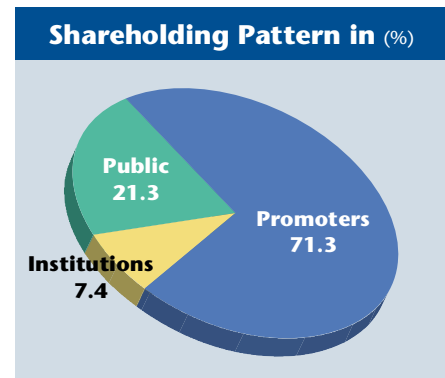
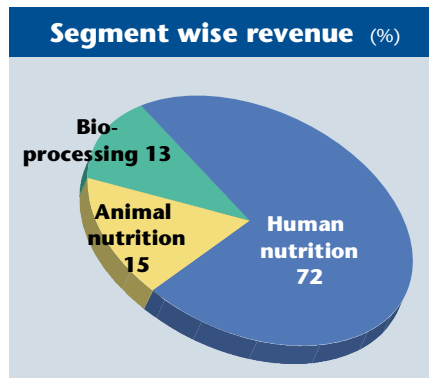
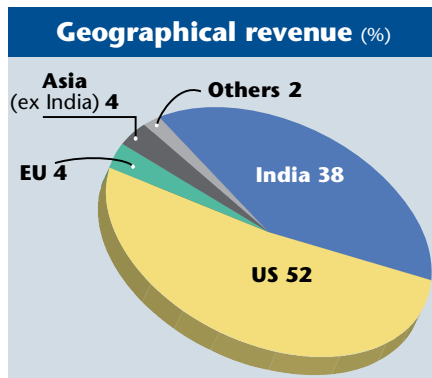
from AETL for the last two decades now," says Shashi Lad, associate director, procurement, Sanofi India Ltd. "They have always lived up to our expectations and are excellent in terms of delivery and quality. Backed by a highly professional team, they have set a high standard for themselves. Their ability to continuously innovate and offer new solutions is commendable."

"AETL is a truly progressive company and has always tried to come up with innovative products and solutions for its customers," concurs Manoj Jain, senior vice-president, commercial, IPCA Laboratories Ltd. "As a company, it has tried to be ahead of the market and come up with solutions that can help its clients in multiple ways". IPCA has been sourcing fermentation-based enzymes from AETL for its pain management category for the last six years.

Backed by strong fermentation process capability, the company makes enzymes by using all four existing natural origins – plant, fungal, bacterial and animal sources – using environment-friendly biotechnology processes. Enzymes are natural protein molecules produced by all living organisms, functioning as specialised catalysts for accelerating the pace of chemical reactions. They are responsible for many essential biochemical reactions and metabolic processes in micro-organisms, plants, animals and human beings but are not alive. Enzymes are produced and harvested from living organisms such as plants, animals, bacteria and fungi and are employed in a diverse array of applications that range from the manipulation of DNA in biotechnology research, to improving the softness of fabrics in

R&D team comprises over 100 members consisting of scientists, microbiologists, engineers, food technologists and biotechnologists. The R&D efforts across seven centres have helped the company develop more than 65 proprietary enzymes inhouse.

Currently, the company has four R&D facilities in India (Thane: 2 & Sinner, Nashik: 2); two in the US and two in Germany. The Sinner and Thane R&D facilities are a process development laboratory, approved by the Department of Scientific and Industrial Research (DSIR), focusing on enhancing production efficiencies during the fermentation process, enhancing downstream processing capabilities and improving recovery and purification yields. R&D capabilities include



the textile industry.

“AETL has created a distinct place for itself in the market through its well-diversified portfolio in enzymes,” remarks Ramakrishna K.V., CEO, Kotak private equity group. “Over the years, the company has established a proven track record of developing and manufacturing a wide range of products for a diverse clientele. The company is well-backed by its strong management and R&D capability and is all set to start its next growth phase”. Kotak invested in AETL in 2012, buying a 5 per cent stake for about ₹30 crore.

Last year, the PE firm exited its investment with a multifold return. The fund sold its 2.3 per cent stake in July last year during AETL’s IPO, for a price of about ₹850 per share, as against its purchase price of about ₹290 per share four years earlier. In September last year, the PE firm also sold the remaining 2.7 per cent for a total value of about ₹70 crore (at a market price of about ₹1,250 per share).

The company’s ₹412-crore IPO last year got an overwhelming response with the issue getting subscribed 116 times. The share got listed at ₹1,210 – a 35 per cent premium against its issue price of ₹896 per share on the National Stock Exchange and the Bombay Stock Exchange. The stock touched a high of about ₹2,220 in December 2016 and underwent a split (FV: ₹10 to FV: ₹2) in May this year. Currently, the stock (market capitalisation: ₹3,038 crore) is priced at ₹272 (as on 31 October 2017).

“Today, our company has a global presence with exports to over 45 countries,” says Vasant L. Rathi, 69, promoter & chairman, AETL. “As a company, we are at the forefront of enzyme technology, and leverage strong R&D capability to deliver high

quality products worldwide. Our sustained efforts and investments on the R&D front have enabled us to develop a strong portfolio of enzymes as also probiotics, where the company has forayed recently”.

“We are an integrated player with a presence across the enzyme value chain and this integration helps us to offer cost-effective solutions to our customers,” contends Chandrakant L. Rathi, 63, promoter & managing director of the company. “We are continuously innovating and upgrading our product offerings through formulation and application development. Going forward, we intend to intensify our focus on new age applications such as palm oil extraction and bio-diesel. The animal feed sector globally is also a promising market”.

Chandrakant Rathi, a chemical engineer from the National Institute of Technology, Rourkela, had co-founded Papains Pvt Ltd in 1978. It was engaged in the manufacturing and trading of papain, an enzyme found in the liquid of the unripe papaya. Papain is used in biochemical research involving the analysis of proteins, in tenderizing meat, in clarifying beer, in removing hair from hides before tanning, and in enzyme-action cleansing agents for soft contact lenses. It is also used in toothpastes and cosmetics and in preparations of various remedies for indigestion, ulcers, fever, and swelling.

The papain business

In fact, it was his father, Laxminarayan Rathi, who started the papain extraction and trading business in Nashik, Maharashtra, in 1958. The Rathis, originally from Rajasthan, had settled into Nashik generations ago, before moving to Mumbai. Primarily, the family was

in textile trading; however, Laxminarayan decided to get in the papain business, as the farmers in the region were also engaged in papaya farming. In the mid 1980s, Rathi got into the trading and formulation business of enzymes through an entity named Super Organic Research Lab. And, in 1989, he incorporated Advanced Biochemicals Pvt Ltd, rechristening it Advanced Enzyme Technologies Ltd in 2005.

Though Rathi’s enzyme business was doing well, his portfolio was quite limited since he had to depend upon the traditional extraction route for the making of enzymes. Rathi would travel overseas for enlarging his export business and, in the early 1990s, he realised that, if he had to be a significant entity in the business, he would have to induct the new age fermentation technology for making enzymes. In 1992, during one of its overseas trips to Korea, he managed to convince Pacific Corporation of Korea to enter into a technology transfer agreement. In 1994, with this Korean technology, the company set up its first enzyme fermentation facility (seven enzymes; capacity: 60 cu mtr, investment: ₹20 crore) at Sinnar, Nashik.

In 1993, elder brother Vasant Rathi also joined the business to support Chandrakant. A pharmacy graduate from Nagpur University, with a Masters’ degree from the University of Hawaii, Vasant was also one of co-founders of Rathi Papains Pvt Ltd in 1978, even as he moved to the US just after completing his graduation in 1973. He has continued to be based in the US and looks after the company’s US operations. In 1985, he promoted, in the US, an entity called Cal-India Foods International (into trading activity) which was

merged into AETL in 2011.

“Most of the enzymes till then were imported into the country,” recalls Rathi. “And we said to our Korean partner that we would like to set up this facility for substitution of imports for our country. They liked our commitment to India and were ready to share the technology with us”.

However, the next three-four years (1994-98) were not easy for the company as it faced big challenges in stabilizing the facility. Product standardisation and quality issues were a hindrance as well. In fact, there was a time when the promoters almost decided to close down the unit. But their perseverance paid off and the company turned around in 1999. And it never looked back thereafter. In 2001, the company established its first R&D unit in Sinnar, Nashik, followed by another one in Thane. By 2007, the company had expanded its portfolio to 15 enzymes.

Currently, the company not only boasts of an expanded portfolio of over 68 indigenously developed enzymes and probiotics but also over 400 proprietary products. Backed by over 23 years of fermentation experience, the company at present has seven manufacturing facilities – five in India and two in the US. In India, the manufacturing facilities are located in Thane, Nashik, Indore and Ongole in AP.

The AP facility is the recent addition as the company acquired in October 2016 a 70 per cent stake in Hyderabad-based JC Biotech Pvt Ltd, engaged in the making and marketing of biotech products, including key API, serratio-peptidase, an anti-inflammatory enzyme. With this ₹50-crore acquisition (funded internally), AETL's share in the overall Indian enzymes market has risen to about 35 per cent from 25-odd per cent, while the company will now have an 80 per cent share (from 50 per cent) in the API serratio-peptidase market. JC Biotech, which has the ability to expand its fermentation capacity further, also has a fairly advanced technology for the manufacturing of algal DHA, an Omega 3 Fatty Acid, which finds great application in human nutrition.

“The deal is quite strategic in nature and will significantly boost our overall business,” says Piyush Rathi, chief



Advanced technology for manufacturing

business officer, AETL. “We expect this deal to immediately strengthen our market leadership in API serratio-peptidase, giving us significant competitive advantage as well as flexibility in production. JC Biotech has the ability to handle solvent-based fermentation and recovery, which is highly complementary to our current production process”.

Piyush, 37, son of C.L. Rathi, was instrumental in striking the deal. A graduate from Mumbai University and later from Michigan Tech University, USA, he did his MBA from Symbiosis Centre for Management, Pune, and joined the company in April 2005. Gradually, he took charge of the human nutrition and bio-processing business and has been, since 2014, concerned with the development of the animal nutrition business globally. Currently, his key responsibility is to oversee the development of the company's business in Asia and Europe. A few months ago, the company had acquired 100 per cent stake in industrial biotechnology company, Evoxx technologies GmbH in Germany, with sales of E2.9 million, for a consideration of E7.65 million.

Stake in Evoxx

The purchase, effected through AETL's wholly-owned subsidiary Advanced Enzymes Europe BV, will give the company a stronger foothold in Europe, where the company wants to expand

its business. Currently, 62 per cent of the company's revenue comes from overseas operations, of which 52 per cent is from the US, while 4 per cent each comes from Europe & Asia and 2 per cent from others. The Indian operation contributes about 38 per cent. The acquisition will help increase revenue contribution from Europe to 8-9 per cent.

Evoxx is focussing on the development and production of industrial enzymes and novel carbohydrate ingredients produced by enzymatic bioconversion. With its proprietary enzymes and carbohydrate ingredients, the German company is active in high growth markets addressing consumer needs in the food health & wellness sector and consumer products markets.

The German company has a team of 40-odd scientists and technicians across the two R&D sites in Germany, which will also help the AETL strengthen its R&D capability.

“Together with the strong partners in India and the US, the portfolio of industrial enzymes will be larger and more attractive for the existing and future customers of Evoxx,” says Thorsten Eggert, CEO, Evoxx Technologies. “Furthermore, the production plants and production knowledge of AETL will help Evoxx deliver enzymes on an industrial scale”.

“Evoxx has a great strategic fit for us,” responds Rathi. “With this, we

significantly expand our R&D capabilities and also strengthen our European presence. The acquisition will also help Advanced Enzymes expand its enzyme portfolio & business in biocatalysis and food applications”.

Chandrakant Rathi plans to take AETL's revenue to over ₹1,000 crore in the next five-six years from the present ₹331 crore (2016-17; PAT: ₹92.4 crore). The company is looking at a turnover of about ₹400 crore and a PAT of about ₹100 crore during the current year. The company has grown at a CAGR of 11 per cent in the last five years since 2012-13, while maintaining a robust PAT growth of 16 per cent.

AETL is well-placed to achieve this revenue target against the backdrop of several developments that are in the pipeline. The company has ramped up its manufacturing and R&D capabilities through organic as well as inorganic routes, which will enable it to sustain its growth trajectory.

“In the last few years, we have ramped up our capabilities in a big way and this will enable us to achieve our future goals without any further capex in the near future. Importantly, our growth will be profit-driven, as we have been able to put a vibrant business model supported by a well-diversified product offering,” says Beni Prasad Rauka, CFO, AETL.

“As a company, we have focussed on process development and optimisation. Having pioneered the production of enzymes in the country, we continue to set trends with the R&D of new applications for the use of enzymes across various industries. We are today proud to be one of the few manufacturers in the world to possess great depth and expertise in fermented enzyme making,” says Mukund Kabra, whole time director, AETL. Kabra overlooks the manufacturing operations of the company.

The company is looking to further diversify its geographical presence in Europe and other countries, even while continuing to expand its business in the existing geographies. Going forward, it is planning to increase its revenue share in the EU to about 15 per cent, with its share from India and the US expected to be about 40 per cent and 35 per cent, respectively. About 10 per cent will be contributed by the rest



Ramping up capabilities

of the world.

On the product front, AETL hopes to strengthen its already wide portfolio. Currently, about 87 per cent of the revenue comes from the human and animal nutrition business, wherein human nutrition (active ingredient) contributes a bulk of 72 per cent and the rest is by animal feed (feed additive). The bio-processing business (bio catalyst; food and non food processing) accounts for about 13 per cent of the company's revenue. The company is intensifying its focus on newer applications such as palm oil extraction and bio-diesel. Recently, it has formed a joint venture in Malaysia – Palm Techno Ventures Enzymes Sdn Bhd, Malaysia, to supply enzyme-based solutions for palm oil extraction. The JV will also help the company to increase its business in the Asian region.

According to a market survey, the global enzyme market was valued at about \$4 billion in 2011-12 and is estimated to reach \$7 billion by 2017-18, of which industrial enzymes were projected to constitute, say, \$5 billion, with the rest coming from specialty enzymes. Moving ahead, the global enzyme demand is expected to grow at CAGR of 6.5 per cent to \$9.5 billion by 2022.

Integrated presence

In India, the enzyme market, estimated at about \$170 million, is still in its infancy. However, it presents a large potential and is expected to grow

at over 10 per cent annually. Though globally the market is tilted in favour of industrial enzymes, in India due to rapid growth in the pharma and chemical sectors, the demand of specialty enzymes will outpace industrial ones. Favourable government policies as regards promotion of biotechnology and R&D will add to the momentum.

With the changing lifestyle and growing health awareness, the demand for probiotic products is on the rise. The probiotic market is expected to grow at the rapid rate of over 19 per cent going ahead, and comprises segments like probiotic functional foods, beverages, probiotic drugs, dietary supplements and probiotic animal feed. AETL is also looking to increase its presence in probiotics. Probiotics are defined as micro organisms (bacteria/yeast) that are believed to provide health benefits when consumed. The term probiotic is currently used to name ingested micro organisms associated with benefits for humans and animals.

With all these developments in place, AETL is well-placed in the market with a presence across the value enzyme chain, covering the entire range of activities from R&D, commercial-scale manufacturing, to marketing of enzyme products and customised enzyme solutions. Unlike other players in the industry, which are present in only some parts of the value chain, its integrated presence enables it to offer cost-effective solutions to its clients. This also allows it to cater to industrial clients' specific requirements.

The company is catering to well-diversified industries across multiple segments from human nutrition and animal nutrition to bio-processing and thus enjoys a distinct edge in a concentrated industry market with a very few large players like Novozymes, Dupont, BASF and DSM. Besides, most of these players are restricted to specific areas. Moreover, the company is operating in a specialised business of enzyme developing and formulation, where the entry barrier is quite high. On top of this, the company caters significantly to the pharmaceutical sector which is highly regulated and controlled. With all this, the company is geared up to commence its next phase of growth.

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