How Richcore is spinning money out of waste to cut cost for clients like ITC

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In a small laboratory, tucked away in Bangalore's Electronics City, which houses major IT companies such as Infosys and Wipro, a team of scientists are working on microbes to produce enzymes that are used to conserve food, energy and water.

The scientists at the biotechnology start-up Richcore Lifesciences have developed a futuristic technology that involves the production of special enzymes from microbes that can catalyse, or increase the speed of, chemical reaction. This product is now being used by multibusiness conglomerate ITC for effluent water treatment at its factories.

A Das, general manager at ITC's paper manufacturing facility at Bhadrachalam in Andhra Pradesh, said his company - a first-time user of this technology - expects to treat water effluents without disturbing existing infrastructure. Richcore's enzyme-based technology breaks down pollutants in industrial waste water in just one week - a process that normally takes months to complete.

"The technology reduces overall waste water management costs by up to 30% and increases water recyclability and reuse considerably," said Subramani Ramachandrappa, CMD of Richcore, who has filed more than five patents in the last two years. He estimated their potential market at $7-8 billion per annum.

The firm is in talks with companies in Chile, Japan, Middle East, Brazil and many European nations for providing its waste water treatment technology. It has already completed a project in Indonesia for one of the largest paper mills there, which makes around 7,500 tonne pulp a day. The idea to make a customised solution came up when Richcore scientists visited textile company Gokaldas Exports to sell enzymes for washing denims.

In a market already saturated with industrial enzyme-makers such as Novozymes and Genencor, there was little chance for Richcore to grab market share. It was then that Gokaldas came up with a unique request - to make enzymes to treat their effluents. The Richcore team then started collecting microbe samples from waste water treatment plants across several industries, regions and came up with a novel, low-cost enzyme solution.

Richcore soon realised that to survive, the start-up would have to differentiate itself by making customised enzymes in collaboration with its customers. Richcore is now helping Dubai-based firm AquaChemie to treat the toxic waste produced in Oil and Gas industry.

"We chose Richcore as there are not many players who can produce enzymes related to oil and gas," said Subrato Saha, director at AquaChemie. The company has also bagged contracts from customers such as Premier Mills and Balrampur Chini Mills for different applications.

But the journey was not easy for its founder Ramachandrappa. His family's silk business had to be shut down after Rama-chandrappa's father passed away. Ramachandrappa, a textile engineer, was compelled to take up low-paying jobs such as driver, farmworker and sales agent to pay off family debt. He later joined India's largest biotech firm Biocon, which was selling enzymes at that time. Ramachandrappa decided to quit his salaried job and start his own firm. He founded Richcore as a marketing outfit working with clients such as Biocon and Mohan Breweries.

The company moved up the value-chain by setting up its own research and development laboratory to develop enzymes. Biotechnology being a capital-intensive business, Richcore needed funding to scale it up. As banks refused to extend loans, Ramachandrappa pitched his company at various business competitions in the US, winning many of them.

One of the judges at a competition was a venture capitalist from early-stage investor firm VentureEast, who was impressed with the technology and the team. VentureEast immediately invested $3 million in the firm in 2008 and an additional $3 million in 2011. Richcore also provides enzyme technology to convert biomass otherwise unfit for animal consumption into animal feed, reducing pressure on food grains.

"The industrial enzyme market is already dominated by multinational companies betting on sectors such as detergents, food and beverages. So Indian companies need to find newer applications," said Chaitra Narayan,

programme manager for chemicals, materials and food at Frost & Sullivan, who estimated the global industrial enzyme market at $3.2 billion.

Today, Richcore is expecting to touch revenues of around $25 million and has 100 employees, most of them scientists.