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'Time-tested advice of network is net worth'

10 April 2014 | Features

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For two years, QTLomics was incubated at Genotypic Technology, a 15-year-old Genomics services enterprise, offering microarray, Next Generation Sequencing (NGS) and bioinformatics services and solutions.

The background
With an ever increasing Indian population number, 70 percent of them depend on agriculture for their livelihood.

"With our booming economy and urbanization, Indian population seems to be growing day-by-day. There is a massive change in our diet style. On the other hand, we are witnessing huge biodiversity loss, along with acute water scarcity, and in a few years from now the water table that we see today will disappear. On top of that, there is the issue of climate change, leading to sudden changes in the earth's temperature and atmosphere as a result of messed up ozone layer," explains Dr Krishna Prasad, COO, QTLomics, talking about the company's background.

"Earlier we had four months of rainy season which now has reduced to a month or two. All these factors are worrying our farmers way too much."

Dr Prasad continues, "Thus, we now need to produce more and more food, for which seed is pivotal. Now, the challenge is, farmers need to grow more food in the same space of land. Hence the seed varieties need to be changed."

He further elucidates, "Hence, we felt that there is a big challenge and we decided to use technology to bring about the change by focusing on agriculture. This idea started and was incubated two years ago within Genotypic Technology. In December 2013, we decided to move this arm out as a separate subsidiary company focusing on agriculture."

The name 'QTLomics' is a portmanteau word, derived from the words 'Quantitative Trait Locus' and 'Genomics', currently having 6 employees including scientists, marketing & sales personnel and financial experts.

Service offerings
Genomics essentially uses technology concerned with gene and protein, which involves biology, engineering and statistics.

"We would like to support plant breeders. Using Genomics, we will help plant breeders, identify markers or genes responsible for a particular trait. The main purpose it to bring right plant variety having desirable characters. We are taking this technology and seeking to apply it in a novel way," adds Dr Raja.

The challenges
According to Dr Raja, the biggest challenge for a start-up is finding the entry in to the market.

"QTLomics was initially incubated at Genotypic Technology during which we studied the market. The answers were found during the incubation period," says Dr Raja.

Approximately, Rs 3 crore was invested in bringing QTLomics to the market with a two- year incubation time.

"We raised our funds through friends and angel investors without any hassle, rather than running to venture capitalists. So our real challenge has been postponed for now. One year down the line our major challenge will be raising the capital to convert our R&D in to products. The idea is first you put your own money and associate with companies and then ask your friends to aid you further," comments Dr Raja.

Right now the company aims to use all its profits in R&D and developing products.

According to Dr Raja, in India, applying the modern technology (Genomics) is not a trend among the Indian breeding companies as they are used to traditional breeding practices.

He opines, "To have specific budgets for applying Genomics is a challenge. Traditional breeding companies do not have budgets for applying Genomics. A prior example has not been set so far in this regard. This is a worldwide trend among breeders."

In India, there is no regulation required to sell seeds. "In our country, you don't need certification for hybrid seeds. This is our biggest challenge as well. The time has come now for the government to certify seeds. Almost 90% of agriculture is done

traditionally using normal seeds. Under these circumstances, we help people to self-certify or we certify the seeds. Certified seeds can be sold for higher price, which is an added advantage," explains Dr Raja.

The Awareness
Speaking about raising awareness on agri-genomics, Dr Raja gladly says, "We are running workshops, roadshows, attending conferences and also delivering lectures and presentations in breeding conferences and national seed congress. We are going to collaborate with leading scientists in the academia. We run one of the world's largest LinkedIn group in Agriculture Genomics with over 4000 users, and the users are located all over the world. This LinkedIn group was started 3 years ago and this is one of the major ways through which we spread the news of how to apply Genomics in plant breeding."

The collaborations
Right now the company has collaborated with DYN Diagnostics in Israel, who are experts in marker-assisted breeding (MAB). It also aims to pitch genomic-assisted breeding to the seed companies.

Dr Raja also states, "Currently we are doing tests on commercial hybrids in India. We are collecting tomatoes from the markets genotyping them to see the trait of each tomato. I believe this is going to make a big news in the market as no such study has been carried out before."

"We are now targeting Singapore and the Asian markets since breeding is climate dependent because the plants that we are growing is different from what is grown in Europe. In terms of revenues, we will make USD 1 million in the first year, and all the profits will be used purely for our R&D purposes," reemphasizes Dr Raja.

The clientele
Talking about the clients, Dr Raja adds, "Firstly, with MNC companies having breeding stations in India who are already applying Genomics and marker-assisted breeding. They have issues sending samples out of India. We are working with them to provide the services. Secondly, we want to work with large Indian seed companies like Nuziveedu Seeds, Kaveri Seeds, Mahyco, and Rasi Seeds, who are probably going to apply Genomics in agriculture. Thirdly, we want to associate with mid-sized Indian companies and importers and exporters of seeds. India is a major importer of seeds. If companies want to breed the seeds, then we would be the right people.

"One thing we are clear about is that we are not going to create and develop GMOs using recombinant DNA technology," says Dr Raja, brimming with confidence.

Further expansion
Dr Raja optimistically opines that in the next one year, the company will have its own green house, farm house and tissue culture facility, and a plant molecular biology lab to provide end-to-end services.

"We also welcome companies outside India, should they need our services. They can send in their samples to us. We also want to capture markets in Malaysia, Thailand and South Africa, where agriculture is important and the ecosystem is quite messed up," expresses Dr Raja.

Innovation
Speaking about innovation at QTLomics, Dr Raja adds, "Once we understand the problem, the next phase would be to plan about how to get around it. It doesn't necessarily imply the application of high-end technology. We need to look at available technology and see how best we can apply them with the least amount of money to create a solution in an innovative way."

He continues, "We have scientific members from agricultural universities and plant breeders. We would like to involve everybody and discuss challenges and how to deal with it. Social media and publications give tremendous visibility to the company."

The government
Dr Raja says that he is very content with the Karnataka government's initiatives and plans.

"People should not complain about government not doing anything. They have made life much easier. You have to figure out how to take advantage of their offerings. And do not expect to be spoon-fed. Find what the government has to offer with respect to R&D funds and R&D products, and make use of all of it," reveals Dr Raja.

For young entrepreneurs

For a start-up, the first two years are critical. "Doing the basic groundwork and carrying out essential homework is indispensable. The time-tested advice of your network is your net worth. You got to be very strong in you professional social media circles. In our case, we started our presence in the professional social media circles even before we even had our website," exclaims Dr Raja.

He further elaborately advises, "Do not ever think that you can start and then raise funds. If you don't have funds, then don't even start. Entrepreneurship is rebellion against establishment. When you rebel, you need to fight hard with your weapons (capital). Ensure many of the little things are taken care by professionals like registering the company, taxation or even starting a bank account. Gone are the days where entrepreneurs got to do everything, so do not even bother learning certain things. Focus on something which you have to learn like the basics of accounting, finances and management. Maybe you can learn it through professional courses, friends and consultants the hard way. Take your *'gurus'* help to learn than from your mistakes, because in the current world, time is money."

Talking from his own experience and mentoring, Dr Raja says, "For first-generation entrepreneurs, getting a loan from the banks is a mammoth challenge. Pooling in money from other sources is crucial. The market too poses a major challenge."

Dr RajaÂ concludesÂ saying, "Once you find your space and place, you run your business with ethical principles. Stop cribbing about what is not available in the system. Don't waste your energy breaking through barriers. Just go around them. On any given moment, every day we hear about the gloomy economy and unavailability of funds. These are entry-level barriers and are part of the rules of the game. You have to work with it rather than challenge it."