BioSpectrum
the business of Bio & Health Sciences

The opportunity space is in "r"&D

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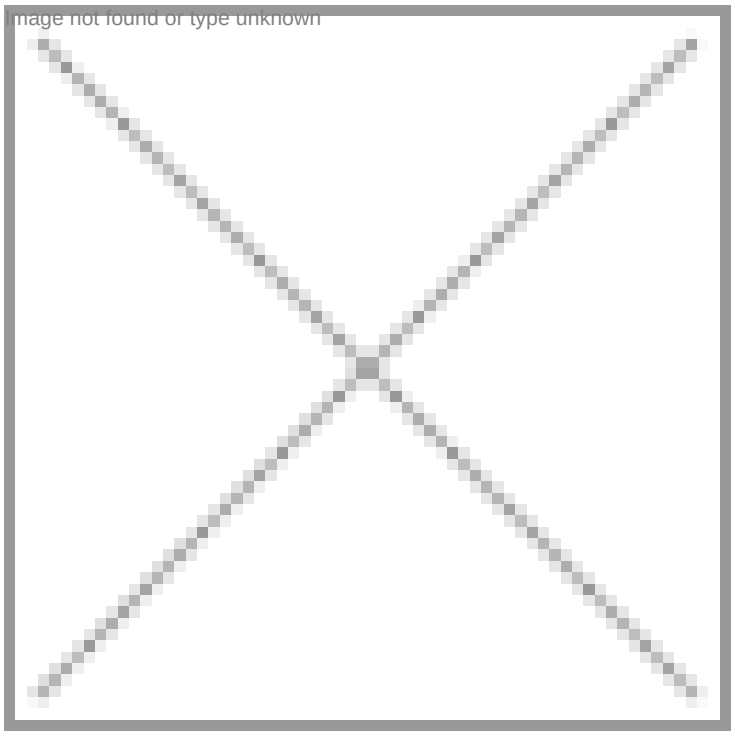
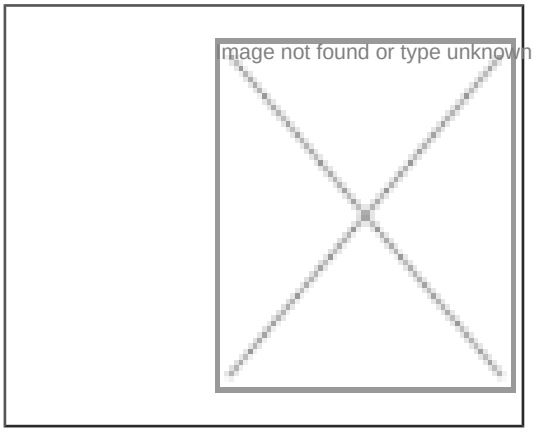


During a Biospora gathering in Bangalore, Dr Bala S Manian shared his thoughts on the biotech entrepreneurial opportunities in the India-US corridor. BioSpectrum captures his formulas.



Dr Bala S Manian

"I am not a mechanical engineer but have a PhD in mechanical engineering. I am not a life scientist, but have patents and contribution in the life sciences sector. I am not part of the movie industry, yet received an Academy Award," said Dr Bala S Manian.

The message there is Dr Manian succeeded as an entrepreneur because he focused on problem solving. The entrepreneurial opportunities lie in new discoveries, technology translation and adapting new methodologies. It is about identifying and defining the 'unmet' need. Great ideas come in terms of problems to solve. And when an opportunity of unmet need comes, there is a monetary gain too. Problems have been solved by new discoveries, technology translation, and adapting new methodologies. This has been the basis for entrepreneurship. It is not taught, you learn it by living it."

He is a successful life science entrepreneur transcending three decades who founded (and/or co-founded) companies like Quantum Dot, Surromed, Entigen, Biometric Imaging, Lumisys, Molecular Dynamics and Digital Optics Corp.

Dr Manian holds more than 30 patents, many of which have resulted in successful commercial products.

In February 1999, the Academy of Motion Picture Arts and Sciences awarded a Technical Academy Award to him for advances in digital cinematography.

He has a B Sc in Physics from the University of Madras, a MS in Applied Optics from the University of Rochester, and a PhD in mechanical engineering from Purdue University.

Though he may have been a very successful serial entrepreneur outside he says he is a budding entrepreneur. He is still learning how to do business in India.

So what is the process?

- Focus on an opportunity space rather than on a specific technology or methodology.
- Focus on core strengths and assets.
- Focus and leverage available human capital, more than financial assets. People make companies.
- Focus on economic value proposition. Constantly question as to why us? Is it nice to have or have to "have"?

The opportunity space

Today, several diseases have become "orphaned" because the market is too small and the cost of developing solutions to address those needs is very high. There is a large unmet need to improve pharmaceutical R&D by (i) increasing the probability of success of drug development, (ii) decreasing the time to market, or (iii) reducing the cost of a given phase of drug discovery or development.

So,

- It is about "un orphaning" compelling opportunities.
- Enabling faster R&D processes through access to a larger pool of skilled scientific resources at affordable costs. The message is faster, better, and cost efficient.
- Exploration of "out of the box" development methodologies. Exploration of alternative development methodologies. All by refreshing the costs or reducing the amount of risk capital. The opportunity space therefore in about small r and big D.
- Manufacturing and services are the two other big opportunities.

The methodical look?

Leveraging the inherent Indian strengths like those in medicinal chemistry and pharmacology and IT and statistics to the best possible extent. Besides India is a good base for developing new paradigms for clinical trials.

So, ways â€¦

In development

- Assays for R&D

- Diagnostic assays for supporting clinical trials
- Extending and expanding assays on existing platforms.
- Therapeuticsâ€”Playing value arbitrage game

In manufacturing

In a manufacturing process, scaling up is more important than a matter of product. The process is the product. It is about process control. More so a biomolecule without a manufacturing process is like theory without an application.

- Research products
- Biopharmaceuticals
- Niche branded drugs under contract manufacturing model.

Services

- Contract Research & Development
- Clinical trials
- Patient management services. (The future is about maintaining wellness and treating illness.)
- Pharmaceutical sales and marketing support services. Complexities and diversity of pharmaceutical need higher skilled detailing support.

Apply process engineering principles along with application of robust evidence based with clinical trials.

Why am I interested in India after 37 years?

- The US life sciences industry is in a state of transition.
- Flight of capital away from the industry
- Cost pressures are starting to limit innovation and growth.

The US life sciences industry is under considerable pressure from a financial and operating point of view. The reason: Since the mid 1990s, pharma companies spent billions of dollars on early stage drug discovery technologies like combinatorial chemistry and genomics. This investment in technology has led to an increased number of potentially attractive drug targets and hit molecules, but did not translate into an increased number of new drugs. For example: pharmaceutical companies need to produce 2-3 new drugs per year to deliver on the earnings promised to the financial community, the top 20 pharmaceutical companies have only produced 0.5 new drugs per year in the last decade. The cost to produce a drug is approximately $800 million and takes 10-15 years to take to the market. Interestingly, 90 percent of drugs have revenues of less than $180 million, making it difficult to justify such a large R&D investment. So these represent unique opportunities to be tapped.

Further, healthcare spending will rise in the coming years. With people living longer, the portion of the population over 65 years old is increasing substantially. This leads to increased pharmaceutical consumption. For example, in the US there are 65,000 centenarians, and this number is expected to grow to 1 million by 2050. All these indicate an enormous pressure on the costs and resources. Added to that people are concerned about good life. So the focus is on wellness and preventive care rather than illness and disease management. So India has a huge opportunity in BPO kind of services for patient and health care management. We can call it as the "IT-enabled bio services)

As mentioned above, the global pharmaceutical and healthcare industry is in dire need for improvements from a cost, speed and productivity perspective. Creative solutions are likely to be needed in these cases, leading to the opportunities for India.

Where are we today?

- The pace of new technology evolution is accelerating.
- But the duration of "technology life cycle" is declining.
- Boundaries between disciplines becoming fuzzier than ever and there in lies the opportunities.

India can become an integral part of the life sciences industry just like how it did in the IT sector. Investment in developing India as a preferred destination for drug discovery and healthcare would create new opportunities and wealth. In the near term, outsourcing services (particularly where IT and life sciences intersect) will be an attractive opportunity for India. But making investments in value-added services and technology will lead to the creation of sustainable businesses.

Ch. Srinivas Rao