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Addressing the Industry- Academia gap

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India has been witnessing a good growth in economic and industrial development, which leads to increasing needs on education and calls for a highly diversified human resource. India is many paradigm shifts in the social, business and industrial environment. The onus of making available the skilled human resource lies on system of higher education.



The evolving science in the biotech sector is leading to a demand for high-skilled jobs in India. However, a wide gap currently exists between the quality of human capital available and the needs of the industry. To address this talent deficit by developing Industry ready human capital for the Biopharma sector and enable global competitiveness of the sector, Dr Manbeena Chawla of BioSpectrum spoke to the captains and HR heads of few leading companies on what the industry needs from the academia and how these companies are addressing the gap of talent and skills sets.

Improve employment landscape by integrating skill and knowledge The education scenario in India today speaks of over 1 million students passing out every year in the science background into careers across scientists, engineers and technicians. However only 10 per cent of this number is actually employable. While the responsibility lies with the Industry to drive the economic growth of the country it also has a lot of expectations from the academia to support that. As an HR practitioner, I think in order to keep pace with the dynamic environment and also to bridge the gap, the employment landscape needs to be improved by integrating skill and knowledge required with mainstream education.

Committed to developing a globally competitive biotech ecosystem in India through skill development, Biocon launched “**Biocon Academy** - a Center of Excellence for Advanced Learning in Applied Biosciences”. The Academy delivers industry-oriented training programs to biotech students in association with education partners, such as Keck-Graduate Institute, California, USA for the flagship program as well with other top tiered educational institutes in India for other programs.

- **Dola Mukherjee, Associate VP, HR, Biocon Ltd.**

There is a lack of proper practical training at the academic level. Students are theoretically sound but due to lack of practical knowledge, the fundamental understanding is missing among the students. When we interview around 10 students in our organization, only 1 of them seems fit. I think the teaching level at the academic institutes should be improved. Also, the government should take more initiatives in assuring proper industry training of biotech and life sciences students. Karnataka government is doing a great job in that with the BiSEP programme. Through Biotech Consortium India Limited (BCIL), we also take up students for training at our company but there is always a limitation of how many students we can take. The industry cannot afford to spend a lot of time in training the students. In a year, we hire around 25 candidates out of which 20 per cent are freshers. We prefer students with MTech (manufacturing), while MSc for R&D and analytical segment).

- **Sanjay Lodha, Asst. VP- Operations, Kemwell BioPharma**

The Academia should provide an industry oriented training to all students, and not a general training. Since Biotechnology is a broad field, a yearlong project period should be mandatory for the students in specific areas such as Fermentation, Genomics, Molecular Biology and Vaccines. Industry prefers to hire those students who have thorough knowledge of the specific area they wish to work in. Apart from that, communication and soft skills are equally important. At times we encounter situations where a Master's student joins but leaves half-way in order to pursue further studies. It is expected that the student should have clarity about his or her career.

- **Dr Raja Mugasimangalam, Founder & CEO, Genotypic Technology**

Biotechnology lies at the core of the scientific and diagnostic technologies. In India, a lot of work is happening at the universities. But unfortunately, we do not have a culture of industry-academia collaboration. I hope that this gap can be bridged. The current government should take some steps in this regard. As a result of this industry-academia gap, very few products are coming out of India. Our company is more than looking forward to collaborate with research institutes so that we can bring the latest technologies into the market.

- **Suresh Vazirani, Chairman & Managing Director, Transasia Bio-Medicals**

Anthem Biosciences hires graduates from both the biotechnology and pure life sciences streams. As our foray into biologics and biosimilar space moves from the R&D to the commercial phase, our requirement for fresh talent is going to rise. When we do hire freshers from biotech/ life sciences programmes it is always initially as interns, with a path to permanent employment based on performance. In these situations the criteria we look for are- Basic knowledge and ability to execute at least one technology, Good communication skills, Thirst for knowledge with a penchant for learning new skills/technologies, and Willingness to put in the hours and go beyond the call of duty. Colleges and universities have the responsibility to make their students employable, from the day they walk out of their doors, with degrees in hand. However, the sad reality is that often this isn't the case. A multitude of serious and systemic issues plague our education system. Talking from the perspective of a leading employer, the industry has these minimum expectations of academia: Modern syllabuses, State of the art labs and Well-rounded individuals.

- **Ajay Bharadwaj, CEO & Founder, Anthem Biosciences**

For fresh biotech hiring, we prefer students with BTech / MTech (Biotechnology) and MSc (Biotechnology). For the Pharma Segment, we look for candidates with BPharm, MPharm or MSc Chemistry /Analytical Chemistry. The academia has to follow certain agendas in the curriculum, like To give basic knowledge about GMP, GLP, GDP and about Compliance; Knowledge on Recombinant DNA Technology, this is specifically for the Biotech Graduates; Knowledge of Fermentation and its process; Basic knowledge of instruments like HPLC, GC; Strengthen the knowledge base in injectables, anti-drug abuse technology and complex molecules.

- **Prem Singh, President, Global HR Head, Wockhardt**

The Industry has to pro-actively approach the Academia in order to bridge the gap. For this reason, Novozymes started the 'Voice for BT' public speaking contest. It made a big difference to the overall students committee, and we gave them an opportunity to do an internship at Novozymes. Every year, our team goes around different biotech colleges and institutes to pick students for internships. We also collaborate with universities on specific biotech projects in order to provide a platform to students. So, I feel that the Industry needs to take the lead and make way for the biotechnology students.

- **GS Krishnan, Regional President, Novozymes South Asia**

The Biotech field has a lot to offer to the students but there is a gap that lies between the Academia and Industry. After the students complete their bachelors or masters courses and enter into the any company, it easily takes 6-8 months for them to get trained. The companies end up investing so much time in grooming the students. This can be taken care at the academia side. It would be best if universities establish Centres of Excellence (CoE) in collaboration with the Industry in order to train the students. The Industry has to take the lead in setting up funds for such activities. The students will be able to get the right guidance and mentorship through this process. Hopefully, the Industry- Academia gap can be bridged through this.

- **Vijayaraghavan Pisharody, General Manager – HR & Communication, Stempeutics Research**

The laboratory environment at various academic institutes is very well equipped. All the necessary training is provided to the biotech students to make them technically sound. But that is not the only thing required. The students should be aware of the downstream applications of their training and work as well. Very recently, we took in 12 students for a training project at Reliance, through BCIL. It feels good to see that the government is taking a lot of initiatives in providing potential opportunities to students. So, as part of the training projects, we assign a mentor or supervisor for the students who help them understand the broader picture of biotechnology. We want students to understand the product driven research and the market applications. This is something which is missing in academia. The students learn the skills at the institutes but the industry teaches them how to apply those skills. We also train the students understand the regulatory aspects of research, the importance of IPRs and so on. Students need training on all these levels for them to be industry ready.

- **Dr Santanu Dasgupta, Senior VP, Head of Biology, Reliance R&D**