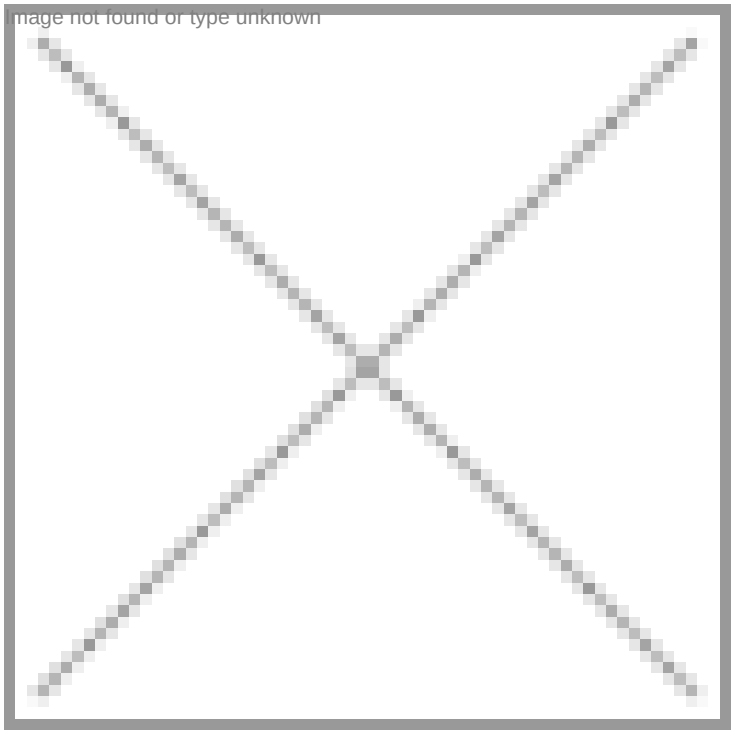


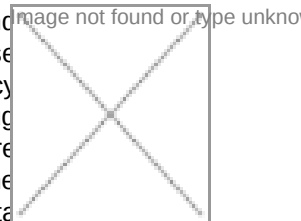
Bioinformatics, the Next Sunrise Industry

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Bioinformatics is the computer assisted data management discipline that helps us gather, analyze, and represent information in order to educate ourselves, understand life's processes in the healthy and disease states, and find new or better drugs. Pharmaceutical companies are achieving increased research efficiency by the introduction of new approaches to the design, synthesis, screening and optimization of drug candidates. Information Technology (IT) is an important support function for all of those activities and there are certain functions and operations that cannot be performed without IT. Informatics represents the deployment of software systems like Sapphire to manage, analyze, and store biological data. Beyond data management, informatics represents the only way to analyze large pools of genomic information.



Future for IT in Biotechnology in India

India is on the verge of taking the global leadership in genome analysis. India has several ethnic populations that are valuable in providing information about disease predisposition and susceptibility, which in turn will help in drug discovery. Institute of Genomics & Integrated Biology (IGIB), New Delhi is in the process of developing a database of genetic profiles among diverse Indian population in terms of ethnicity, demographics and ancestral roots. This voluminous database is well supported by LabVantage Sapphire. However, as there is lack of records and data management capabilities, the biotech and pharma companies need tremendous software support. Software expertise is required to write algorithms, develop software for existing algorithms, manage databases, and help in data collation in final process of drug discovery.

Major opportunities for IT companies include:

- Effective utility of the various data sources and collation thereof.
- Developing better tools for data generation, data capture, and annotation
- Developing and improving tools and databases for comprehensive functional studies including project management.
- Sharing of data and generating useful information from the database.
- Integration of heterogeneous information.
- Designing and developing a comprehensive solutions in assisting every process involved in biotechnology and drug discovery and ensuring that software should be able to take the scientists beyond the walls of laboratory.

Pure cost benefits for the biotech companies will definitely drive the bioinformatics industry in the country. The biotech industry is seen spending heavily on their R&D. Thus to maintain their data the biotech companies will be forced to outsource software to dedicated IT companies in pharma and biotech segment like ours rather than developing propriety software.

It also helps in bringing about standardization and discipline in the field, by automating some tasks and introducing checks in the process where regulatory compliances play a key role. This however has become standard practice in most countries, and those that don't follow it will find it hard to keep pace with continuous developments in this area.

IT has become a critical factor in pharmaceutical research and development (R&D). Growth in the informatics industry is based on the investments in R&D. The convergence of biotechnology and computing has already resulted in a number of alliances, which could result in mergers between previously distinct industries. In future, we may see a combination of pharmaceutical and computing firms bringing together their research as well as IT capabilities. In future, we may see alliances between pharmaceutical, software as well as firms, which have strong marketing capabilities. The field would also witness the entry of new players such as computing and telecommunication firms.

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