Chapter 5

FINDINGS, SUGGESTIONS AND RECOMMENDATIONS
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5.1 Findings of the study

1. The majority of biotechnology companies involved in manufacture and marketing of biotech products are multinational companies and Indian companies. Multinational companies have their business operations in many countries. Most of the multinational companies are either European or American. The Indian biotechnology companies manufacture and market indigenously developed products and also deal in products of multinational biotechnology companies who do not have their office in India.

2. The biotechnology companies are involved in manufacturing and marketing of capital equipments and consumables. The capital equipments are used for research for long term by the customers and the consumables are consumed by the customers during the research work. The consumables in biotechnology sector are different from all other sectors in regards that the consumables are derived from biological sources; require special storage and transportation facilities and have high prices.

3. The total revenue of all the biotechnology companies supplying capital equipments and consumables for the year 2011-2012 is around Rs. 5,500 crores. Top 5 biotechnology companies contribute to around 30 percent and top 10 biotechnology companies contribute to more than 50 percent of the Rs. 5,500 crore biotechnology industry. The majority of leading biotechnology companies are multinational companies. Most of the leading Indian biotechnology companies market the products of multinational companies that do not have their office in India.

4. Majority of biotechnology companies segment the market as per type of organization. The segments of customers are Academic institutes, Research
institutes and Companies. Academic institutes having research orientation are involved in basic and applied research. Research institutes are involved in research in a specific area depending upon the mandate of the institute. Companies are involved in research and commercial production of biotech products. Few biotechnology companies segment the market by geography, i.e. based on region. The geographic regions are East, West, North and South.

5. The companies are the largest contributors in the revenue of biotechnology companies followed by research institutes and academic institutes. Companies contribute to around 60 percent of the total revenue for capital equipments and around 54 percent of the total revenue for consumables. Research institutes contribute to around 28 percent of the total revenue for capital equipments and around 32 percent of the total revenue for consumables. Academic institutes contribute to around 12 percent of the total revenue for capital equipments and around 14 percent of the total revenue for consumables.

6. The capital equipments and consumables marketed by biotechnology companies do not vary technologically across the customer segments. The majority of biotechnology companies offer technologically equivalent products to academic institutes, research institutes and companies.

7. Biotechnology companies adopt differential pricing for capital equipments marketed to their customers. The capital equipments are supplied to companies at higher prices than academic institutes and research institutes.

8. Biotechnology companies adopt differential pricing for consumables marketed to their customers. The consumables are supplied to academic institutes and research institutes at higher prices than companies.

9. Biotechnology companies offer more discount on list price of capital equipments to academic institutes and research institutes. The academic institutes and research institutes have limited budget for procurement of capital equipments. The equipments used for research by these customers are recommended by them for commercial production to companies and hence
the biotechnology companies are likely to gain future business by such references.

10. Biotechnology companies offer more discount on list price of consumables to companies. The companies buy consumables in bulk quantity and hence they are offered more discounts.

11. Majority of biotechnology companies enter into rate contract with research institutes and companies for supply of consumables. The rate contract ensures the biotechnology company of assured business at a predetermined rate. It also protects the customers from any increase in the price of consumables during the period of contract.

12. Biotechnology companies distribute the capital equipments and consumables to most of the academic institutes through distributors and local dealers. Biotechnology companies distribute the capital equipments and consumables to most of the research institutes by directly importing from principal company in foreign currency, through Indian subsidiary of foreign company in Indian rupees and also through distributors. Biotechnology companies distribute the capital equipments and consumables to most of the companies by directly importing from principal company in foreign currency and through Indian subsidiary of the foreign company in Indian rupees.

13. The lead time between receipt of order and delivery of capital equipments by most of the biotechnology companies is 4-6 weeks. Since, majority of the products have to be imported from foreign country; the lead time for supply of capital equipments is high. The lead time between receipt of order and delivery of consumables by most of the biotechnology companies is upto 4 weeks.

14. The major promotional strategies used by biotechnology companies to promote their products to academic institutes are product brochures & catalogues, advertisements in magazines and customer references. The product brochures and catalogues inform the customers about the technical specifications & details of the capital equipments and consumables offered
by the biotechnology companies and therefore they form the basic criterion for academic institutes to procure the products. The magazines are primary source of information to academic institutes which make them aware about current trends and recent developments in the field of biotechnology. Advertisements of biotechnology companies in magazines acquaint the customers about their range of products and also influence their buying behaviour in a positive manner. Customer references help the researchers in academic institutes to understand the existing researchers who are using the company’s products and thereby enabling them to take a favourable decision in company’s favour.

15. The major promotional strategies used by biotechnology companies to promote their products to research institutes are scientific portfolio, personal selling and trainings & workshops for customers. Scientific portfolio is the reference of a product or process in a research paper published in international science journals. The original research papers of scientists are published in various national and international journals. This published research work and research papers often mention the brand name of capital equipments and consumables used for research. These papers are referred by many researchers across the world who are involved in similar research. Such references of products in leading research journals provide biotechnology companies a positive image in the mind of researchers. The capital equipments and consumables used for biotechnology research are very sophisticated and complex in nature. Special training is required to understand and operate these products. The trainings and workshops provide hands-on training on the application and use of these complex biotech products supplied by the biotechnology companies. The training enables the researchers to operate these products efficiently and effectively and help them in achieving desired research output in optimum time.

16. The major promotional strategies used by biotechnology companies to promote their products to companies are interactive website, product brochures & catalogues and personal selling. Website is on-line source of information about the company. Website contains information about the
company’s products and services, the geographic operating areas of the company, its major customers and address & contact details of the company. Interactive website of the biotechnology company help them in promoting their company.

17. The parameters which play an important role in making the biotechnology company successful are quality of the product, innovation & technology, warranty & durability of the product and company brand name. Biotechnology is an important sector of the life sciences industry which has applications in developing products in the field of biopharmaceuticals, vaccine development, agriculture, industrial, diagnostics and bioinformatics. The products developed from biotechnology have direct impact on improving the quality of human life. Hence, it is imperative that the capital equipments and consumables used for production of biotech products should be of high quality and should have latest specifications that offer best performance. The success of biotechnology companies depend on superior performance of the products marketed by them to their customers. Biotechnology companies manufacture and market biotech products which are very complex, sophisticated and involve state-of-the-art latest technology. These products help the researchers in academic institutes, research institutes and companies in carrying out latest research in the field of biotechnology. Better innovation and enhancements in the technology of the products supplied by the biotechnology companies to the customers help them in their research. Hence, it is important for the biotechnology companies to incorporate latest technology and innovation in the products supplied to the customers. The warranty and durability of the biotech products depends on the quality of products. The academic institutes and research institutes work on limited budgets. The funds for procurement of capital equipments and consumables are sanctioned by various government funding agencies to these institutes. It is imperative for these customers to ensure that the products purchased by them have enhanced warranty and durability. The products should be able to perform efficiently and effectively for longer period of time. During procurement of the products the customers ensure that the products should have longer warranty and higher durability. Hence, the biotechnology
companies ensure that the quality of products supplied by them is such that it ensures better warranty and durability.

18. A majority of researchers in academic institutes work on government projects. The researchers in research institutes work on government projects and industry projects. The projects are funded by the various funding agencies of government of India and state governments like department of biotechnology, department of science and technology, Indian council of medical research, Indian council of agricultural research, council of scientific and industrial research and other funding agencies. Industry sponsored projects, are funded by the industry to individual researcher of the research institute based on his research capability and competency. These projects are of commercial value to the companies and sometimes form a part of a larger research project which is commercialized by the companies at a later stage. The researchers in companies work on industry projects.

19. The researchers in companies have higher budget for procurement of capital equipments and consumables than academic institutes and research institutes. Majority of companies have procurement budget more than Rs. 5 crores. The research institutes have procurement budget between Rs. 2 crores to Rs. 5 crores. The budget of research institutes depend on the funds received by the institutes. The academic institutes have the lowest budget of upto Rs. 50 lakhs for procurement of capital equipments and consumables.

20. The academic institutes, research institutes and companies purchase the capital equipments mostly on as and when required basis. The capital equipments required for research in biotechnology are very complex, involving state-of-the-art latest technology and have high prices. The research in the academic and research institutes depends on the availability of funds. Hence, they have to purchase the capital equipments on as and when required basis.

21. The academic institutes, research institutes and companies purchase the consumables mostly once a year and on as and when required basis. The
institutes and companies enter into rate contract with biotechnology companies for supply of consumables. The majority of consumables like media, antibodies, bio-reagents serum required for research in biotechnology have special characteristics, require special storage & transport conditions and are imported from foreign country. The rate contract takes care of any fluctuation in the currency that may increase the prices of the products, thereby assuring the institutes and companies of the supply of consumables. The consumables like glass-ware and plastic-ware required by the researchers are purchased either on as and when required basis or in bulk quantity, once a year.

22. Majority of academic institutes purchase the capital equipments by asking for quotations from the biotechnology companies. The quotations offered by biotechnology companies include the technical details about the products, price of the products, the terms of delivery and terms of payment so that the customer can take favourable purchase decision. The academic institutes mostly purchase the consumables by rate contract. The rate contract assures the stability in the rates at which the academic institutes purchase the consumables.

23. The research institutes purchase the capital equipments by limited enquiry and by asking for quotations from reputed biotechnology companies. The researchers make a detailed study of the capital equipments required for their research, shortlist the biotechnology companies which can supply the equipments to them and then ask for quotations from them. The research institutes purchase the consumables by rate contract with biotechnology companies.

24. The companies purchase the capital equipments by limited enquiry and by asking for quotations from reputed biotechnology companies. The companies normally select the biotechnology companies which can offer the best quality and possibility of scale-up for the equipments to be purchased. The companies procure the consumables mostly by rate contract and also by asking for quotations from reputed biotechnology companies.
25. The promotion tools mostly used by academic institutes to obtain information about capital equipments and consumables supplied by biotechnology companies are product brochures & catalogues, company sales representative and advertisements in magazines. The promotion tools mostly used by research institutes to obtain information about biotechnology companies are company sales representative, product brochure & catalogues and research journals. The promotion tools mostly used by companies to obtain information about biotechnology companies are internet & company website, product brochures & catalogues and company sales representative.

26. The majority of academic institutes procure the capital equipments and consumables required for biotechnology research from distributors and local dealers. The local dealers have a good rapport with the researchers from academic institutes and also they offer better service support. The research institutes and companies procure the capital equipments and consumables by directly importing from principal company in foreign currency and from Indian subsidiary of the foreign company in Indian rupees. The research institutes and companies are entitled for exemption in import duty for the products imported from foreign multinational biotechnology companies. Hence, they prefer to directly import the products from principal company in foreign currency.

27. The academic institutes mostly select the supplier who offers lowest price for the products to be procured. The academic institutes carry out research on limited budget and hence, the price plays an important role in selection of supplier. The researchers in research institutes carry out an in-depth study of the products to be procured and they specify & finalize the specifications of the products to be procured from biotechnology companies. Hence, the research institutes mostly select the supplier who matches the technical specifications given by them. The companies are involved in research and commercial production of biotech products. The quality of the final product developed by the company is most important for the company’s success. The quality of products produced depends on the quality of capital equipments.
and consumables used by the company. Hence, the companies select the biosupplier which offers the best quality of products.

28. The researcher in academic institutes and research institutes indents the capital equipments and consumables required for the research. The decision about purchase of capital equipments and consumables is taken mostly by scientists and by director of the institute. In the majority of research institutes, the decision about purchase of capital equipments is taken by the purchase committee and the decision about purchase of consumables is taken by scientists. The director of the institute, senior researchers, purchase officer and the indenter are the members of the purchase committee. In majority of companies, the purchase department makes the decision about purchase of capital equipments and consumables. The staff in purchase department is competent in technical and commercial aspects of purchase and therefore, they play an important role in making the purchase decision.

29. The parameters which are considered most important by researchers in academic institutes in purchase of capital equipments are quality of the product, price of the product and products specifications & features. The parameters which are considered most important by research institutes in purchase of capital equipments are quality of the product, product specifications & features and warranty & durability. The parameters which are considered most important by companies in purchase of capital equipments are quality of the product, product specifications & features and warranty & durability.

30. The parameters which are considered most important by researchers in academic institutes in purchase of consumables are price of the product followed by quality of the product and company brand name. The parameters which are considered most important by research institutes in purchase of consumables are quality of the product followed by company brand name and price of the product. The parameters which are considered most important by companies in purchase of consumables are quality of the product followed by company brand name and on-time delivery.
31. The parameters about sales representatives considered most important by researchers in academic institutes and research institutes are knowledge about company’s range of products, communication skills and regularity of visits by the representative. The parameters about sales representatives considered most important by research institutes are knowledge about company’s range of products, communication skills and ability to solve queries of the customer.

32. Majority of the researchers in academic institutes agree that, the factors which influence their buying behaviour are quality of the product, price of the product and pre-purchase research. The researchers in research institutes agree that, the factors which influence their buying behaviour are quality of the product, warranty & durability of the product and company website. The companies agree that, the factors which influence their buying behaviour are quality of the product, warranty & durability of the product and pre-purchase research.

5.2 Recommendations & Suggestions

1. The academic institutes and research institutes are involved in basic and applied research in the field of biotechnology. Companies are also involved in research and commercialization of the research in the field of biotechnology. The products required by all these customers are similar in nature. The biotechnology companies manufacture and market biotech products required for the research of these customers. The similarity in the type of research and also in the type of products required for research by all three types of customers make it imperative for the biotechnology companies to segment the market as per the type of organization. Hence, in order to be able to serve the customers well, the biotechnology companies should segment the market as per type of organization.
2. The companies are involved in research in the field of biotechnology and also into commercial production of biotech products. They are the largest customers of biotechnology companies followed by research institutes and academic institutes. In order to maximize their revenue, the biotechnology companies should target the companies and try to maximize their business from companies.

3. The academic institutes and research institutes are involved in basic and applied research in the field of biotechnology. This research is then commercialized by companies by producing the biotech products in bulk quantity. In order to make this possible, it is necessary that all the customers should use such capital equipments and consumables for their research which can be scaled-up for commercial production. To ensure that the research carried out by academic and research institutes is scaled-up for commercial production, they should use such products that complement the companies during commercial production. Hence, the biotechnology companies should market technologically and qualitatively similar products to academic institutes, research institutes and companies.

4. The academic institutes and research institutes receive grants for research from various funding agencies of the government and also from companies who outsource part of their research to these institutes. These institutes operate on limited budget. The procurement of capital equipments and consumables by the researchers depend on the grants received by the institute and also by individual researcher for his project. The research carried out by these institutes is then scaled-up for commercial production by companies. The objective of companies is to earn profit from the products marketed by them. The companies try to maximize the profits by setting high production levels, thereby requiring products of higher capacity. The companies have higher budget for procurement. The products used during research by these institutes are later used by companies for commercial production. Hence, the biotechnology companies should adopt differential pricing and make the capital equipments available to academic institutes and research institutes at price lower than that of companies. The biotechnology companies should
offer the consumables at higher prices to academic institutes and research institutes than companies.

5. Majority of capital equipments and consumables required for the research in the field of biotechnology are imported from foreign country. The payment for the purchase of these products has to be made in foreign currency. Rate contract with the biotechnology companies for supply of consumables ensures the customers of assured delivery with stability in the rates at which they are supplied. The customers prefer to enter into rate contract for supply of consumables required for their research. Hence, the biotechnology companies should enter into rate contract with customers for the supply of consumables as this will ensure them of assured business.

6. The academic institutes have good rapport with local dealers and distributors. They prefer to purchase the capital equipments and consumables from local dealers and distributors. The research institutes and companies are entitled for exemption in import duty. The major products required for research in the field of biotechnology are supplied by multinational companies. The researchers in research institutes and companies prefer to procure the capital equipments and consumables directly from principal company in foreign currency or from Indian subsidiary of foreign company in Indian rupees. Hence, the biotechnology companies should distribute their products to academic institutes through local dealers and distributors and to research institutes and companies by directly importing from the principal company in foreign currency and through Indian subsidiary of foreign company in Indian rupees.

7. The biotechnology companies should supply the capital equipments to their customers in 4-6 weeks and consumables within 4 weeks.

8. Product brochures & catalogues, advertisements in magazines and customer references are the promotion tools mostly used by academic institutes to obtain information about the biotechnology companies. Hence, the
biotechnology companies should use these promotion strategies to effectively promote their company to academic institutes.

9. Scientific portfolio, personal selling and trainings & workshops for customers are the promotion tools used by research institutes to obtain information about the biotechnology companies. Hence, the biotechnology companies should use these promotion strategies to effectively promote their company to research institutes.

10. Interactive website, product brochures & catalogues and personal selling are the promotion tools used by companies to obtain information about the biotechnology companies. Hence, the biotechnology companies should use these promotion strategies to effectively promote their company to research institutes.

11. In order to be successful, the biotechnology companies should focus on quality of the product supplied to their customers, innovation & technology, warranty & durability of the product and company brand name.

12. Price of the product is an important criterion in selection of the supplier by academic institutes; hence the biotechnology companies should make the products available to academic institutes at affordable prices.

13. The research institutes purchase the products which match the technical specifications finalized by the researchers; hence the biotechnology companies should work with the researchers to ensure that the specifications of their products are mentioned in the enquiry letter of the research institutes.

14. Quality of the product is the most important criterion for companies to make a buying decision. In order to be successful in carrying out business with companies; the biotechnology companies should ensure that they offer the best quality product to their customers.

15. The scientist who carries out the research is an important member of the purchase decision making process. The biotechnology companies should
therefore work in close association with the researchers, understand their requirements for products and ensure that the researchers procure the products required for the research from them.

16. Quality of the product, product specifications & features, price of the product and company brand name are the parameters which are considered by academic institutes, research institutes and companies in making a buying decision for capital equipments and consumables. The biotechnology companies should focus on these parameters to be successful.

17. The company sales representative’s knowledge about company’s range of products, communication skills, regularity of visits and ability to solve queries of the customer are the parameters considered important by academic institutes, research institutes and companies. In order to be successful, the biotechnology companies should ensure that their sales representatives are competent and capable of customer satisfaction.

18. The factors which influence the customers’ buying behaviour are quality of the product, warranty & durability of the product, price of the product and pre-purchase research. In order to be successful, the biotechnology companies should ensure that they supply products of excellent quality, durability, at prices affordable to customers and provide complete information about the companies’ products to customers.
5.3 Limitations of the Study

1. The study focuses on one sector of biotechnology industry. The other sectors are not considered for the study.

2. The study focuses on major biotechnology companies which have pan-India presence. The small regional biotechnology companies and their dealers which may have influence on the customers are not considered for the study.

3. The study focuses only on products marketed by biotechnology companies. The biotechnology companies which offer services like gene sequencing, dna-microarray services, next generation sequencing and other services are not considered for the study.

4. The biases of the biotechnology companies and the customers in responding to the questionnaire, influence the quality of data collected during the study.

5. Issues related to confidentiality of the research work, limit the data that can be collected from the respondents.
5.4 Contribution to the body of knowledge

Biotechnology is a relatively new and knowledge driven industry. The nature of the sector makes it different than other sectors in regard that the products and processes used in biotechnology involve use of organisms or products thereof. The various technologies like recombinant-dna technology, monoclonal antibodies, stem cell characterization and other technologies which involve genetically modified organisms that have an impact on human and plant life necessitates a newer look at the way this industry operates. The study helps to understand the characteristics of the sector that makes it different from others.

The study focuses on the marketing orientation of the biotechnology companies that are involved in manufacture and marketing of equipments and consumables. The study identifies the basis of market segmentation adopted by biotechnology companies for Indian market. The study helps to understand the nature and characteristics of the various market segments. The study is successful in identifying the product offerings and types of products dealt by the biotechnology companies.

The study helps to identify the basis of pricing of equipments and consumables that are made available to various customer segments. The characteristics of biotechnology products necessitates that different distribution channels be adopted for supply of consumables and equipments. The study highlights the distribution method for biotech products and also highlights the difference with conventional distribution channels. The study also focuses on the promotional strategies adopted by biotechnology companies to promote their products and the factors contributing to the success of the company.

The study also highlights the nature of research carried out by academic institutes, research institutes and companies and the criteria adopted by them in selecting the biotechnology company for purchase of equipments and consumables.
Finally, the study also provides a path to new biotechnology companies who wish to enter the Indian biotechnology market.

5.5 Scope for future research

1. The study focuses only on one sector of biotechnology. Similar study can be carried out for other sectors of biotechnology industry.

2. A similar study can be carried out for the biotechnology companies providing services like gene sequencing, dna-microarray services, next generation sequencing and other services.

3. A detailed study on consumer buying behaviour in other sectors of biotechnology industry can be carried out to understand the factors influencing their buying behaviour.

4. The role and importance of personal selling in technology dependant businesses can be studied in greater details.