



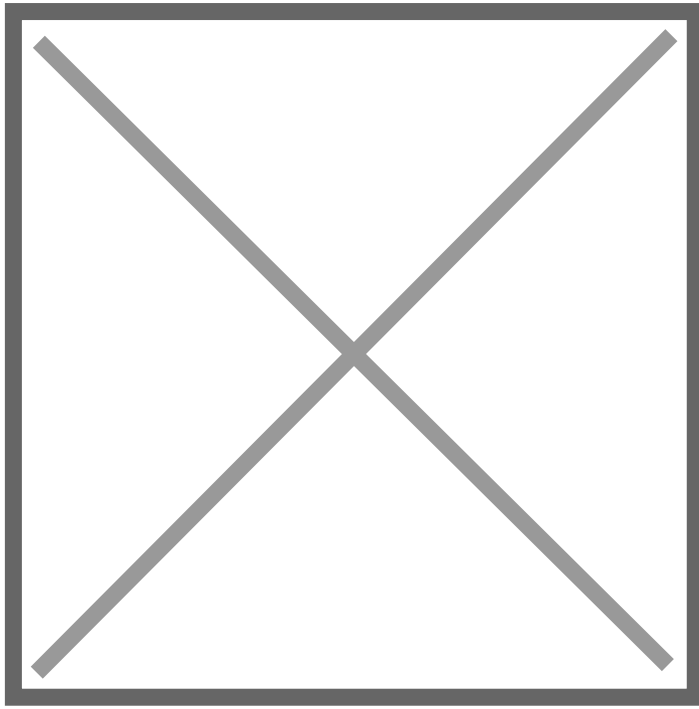
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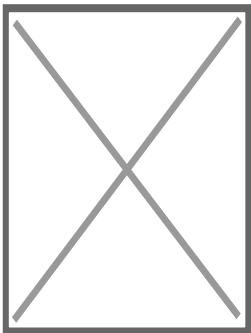
Product Innovation

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Product Innovation

Panacea Biotech has added new drugs to its product basket like Siropan, Lower A, Myelogen Forte, Inrica, TOFF Expectorant, Toff DC, Upright SP and Trepro.



Business: Manufacturer of pharmaceuticals and biopharmaceuticals

CEO: Soshil Kumar Jain (MD)

Biotech Revenue: Rs 600 crore

Start-up Year: 1984

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The year 2006- 2007 will see Panacea Biotech reach new heights if the revenues of the last year are anything to go by. The total revenue grossed by the company for the nine months ended December 2006 was Rs 607.87 crore out of which vaccines

contributed to Rs 475.06 crore and formulations Rs 132.28 crore.

The company, which was amongst the first Indian companies to have introduced Hepatitis B vaccine has received its first supply order from WHO for Hepatitis B vaccine this year. The overall estimated market for Hepatitis B vaccine and its combinations as per UNICEF and PAHO for year 2007 is around 163 million doses, which is estimated to go up to 198 million doses in 2008 and 244 million doses in 2009.

Some of the new drugs added to the list of products in the formulations segment last year are Siropan for renal disease management, Lower A for dyslipidaemia, Myelogen Forte and Inrica for neuropathy, TOFF Expectorant and Toff DC for cough and cold, Upright SP for pain management, Trepro for cardio vascular disease and a total range for diabetes management.

As on March 31, 2007, the company had filed 467 patent applications in various parts of the world and 141 with the Indian patent offices. Of these, 164 have been granted patent and others are under various stages of examination or publication by the patent authorities. The exclusive products based on patented drug delivery system include Panimun Bioral (Cyclosporine), Willgo, ThankGod (for comprehensive management of haemorrhoids), Xeed (anti-tubercular FDC with innovative drug delivery for optimum bioavailability of Rifampicin) amongst others.

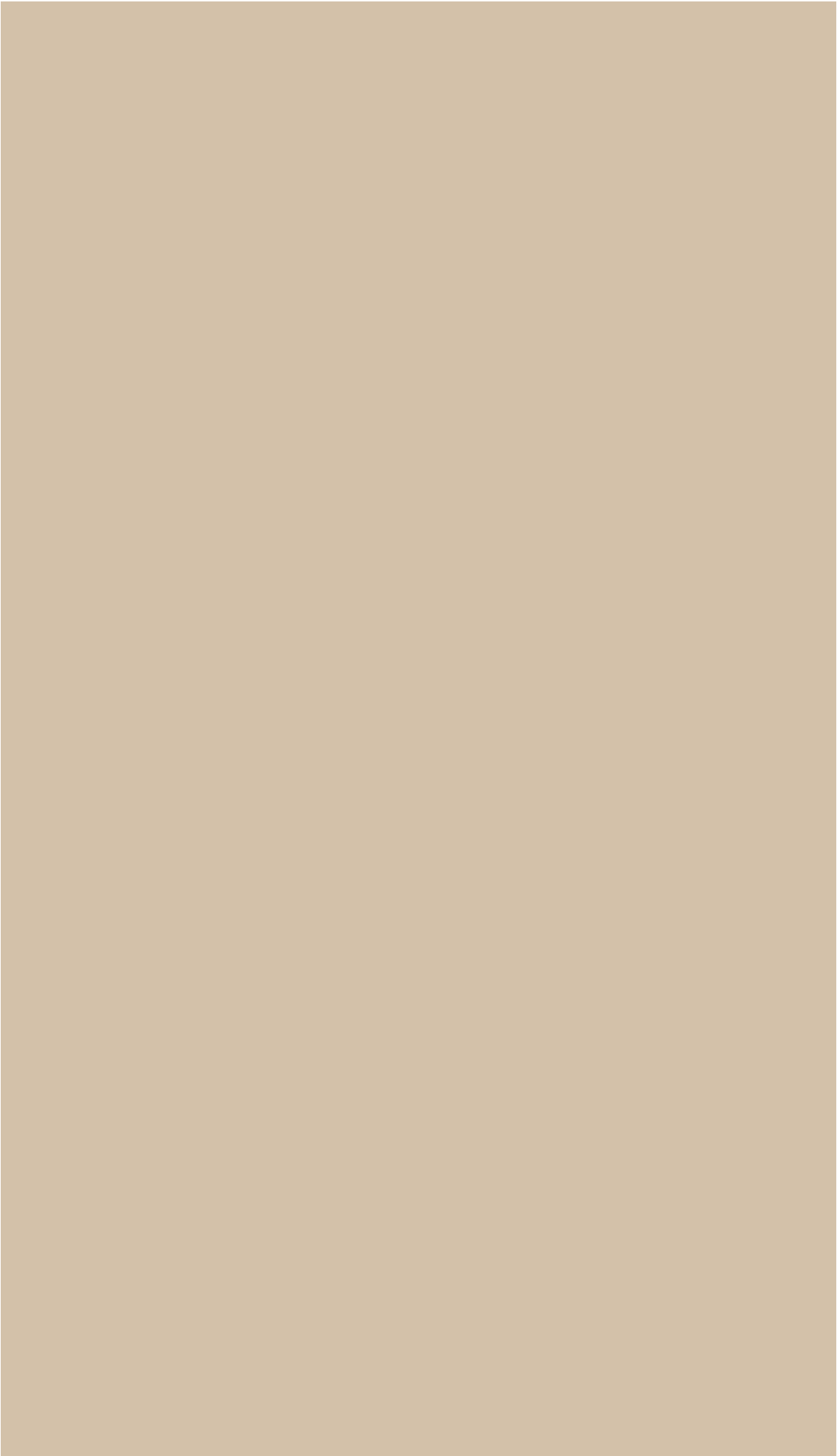
The company entered into collaboration with Netherlands Vaccine Institute for IPV vaccine in May 2006 and PT. Bio Farma, Indonesia for measles vaccine in July 2006. Effective December 2006, Panacea also acquired a 10 percent stake in Cambridge Biostability with an investment of Rs 16.80 crore.

Earlier Panacea had signed a long term licensing agreement with Cambridge Biostability in 2004 under which it will in-license CBL's stable liquid technology to develop, produce and market a stable liquid version of pentavalent and other combination vaccines for the treatment of diphtheria, tetanus, pertussis, hepatitis B and Haemophilus influenza B. With this product, Panacea Biotec would have global access to a market of around \$700 million. It is expected to be launched by 2010.

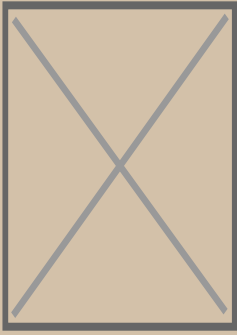
Panacea Biotec has four highly sophisticated ultra-modern R&D centers with over 200 qualified and highly experienced scientists for its various research projects. These R&D centers are equipped to handle vaccine development, biopharmaceuticals, drug delivery projects and drug discovery (small molecules) in compliance with international regulatory standards. In the process of establishment is the herbal formulation facility and anti-TB drug formulation facility plant at Baddi, Himachal Pradesh, vaccine formulation facility at Baddi, bacterial and cell culture based vaccine facility and tetanus vaccine facility at Lalru, Punjab.

The total number of employees in the company has risen to 2,700. As far as the company's future strategy is concerned, it can be defined under short-term, medium-term and long-term timelines. The short-term growth strategy (within one year) focuses on developing of oncology and international vaccine divisions. Panacea will be supplying HEP B Combos vaccine to UNICEF. There would be a continuous effort for organic growth both in vaccines and pharmaceuticals and increase visibility in private market through marketing JV with Novartis Vaccines and launch of Polprotec in India and other markets.

The medium-term growth strategy (within 2-3 years) spells out introduction of brands based on novel drug delivery system. The effort will be towards creating global brands in the field of vaccines, pain management, organ transplantation in the US, EU, Japan, China and ROW countries. There would be introduction of human hair growth peptide based formulation in global markets and the supply of anti-TB and ARV and combination vaccines to WHO/UNICEF. The long-term growth strategy (within 3-5 years) will see the company launch thermo stable vaccines, JE and dengue vaccine. There would be out licensing of patented products in the developed markets of the US and Europe.



"Our strategy is to provide effective therapeutic solutions for lifestyle diseases"



-Rajesh Jain, JMD, Panacea Biotech.

What were your key strategies in the previous fiscal and those in the current fiscal?

The domestic vaccines market is catered by our joint venture with Novartis Vaccines (earlier known as Chiron Vaccines). The strategy was to offer innovative vaccines for prevention of key diseases and acquire leadership in the market. The vaccines are Enivac-HB, Ecovac, Easy Four, Easy Five. We were able to achieve leadership status in Easyfive & Easyfour. In pharma formulations, the strategy is to provide innovative, effective therapeutic solutions for management of chronic lifestyle disease and disorders, viz, diabetes, organ transplants, arthritic disorders, TB, gastrointestinal disorders on a larger scale, i.e., market penetration by covering more doctors and by making the product available at more retailers across the company.

What is Panacea working on in the R&D area?

Panacea Biotech has four highly sophisticated ultra-modern R&D centers with over 200 qualified and highly experienced scientists for its various research projects. These R&D centers are equipped to handle vaccine development, biopharmaceuticals, drug delivery projects and drug discovery (small molecules), in compliance with international regulatory standards.

SAMPAN Drug Delivery R&D Centre, a state-of the-art R&D Centre at Lalru, Punjab is focused on the development of value added drug delivery products that would address unmet medical needs, increase patient convenience and compliance.

The center has demonstrated capabilities in numerous drug delivery research areas like spatial release system; hydrophilic matrix system; topical transdermal gel; injectible system for water insoluble drugs; gastroretentive system; softgels; orally disintegrating system.

SAHA Center for vaccines R&D in Delhi is for the development of paediatric vaccines and vaccines for bio-terrorism. The Lakshya R&D center at Mohali, Punjab is dedicated to the development of New Chemical Entities (small molecules). The therapeutic focus will be on development of NCEs for the treatment of metabolic disorders, diabetes and infectious diseases. The biopharmaceutical R&D center in Delhi will develop novel preventive and therapeutic vaccines, therapeutic fully human monoclonal antibodies and therapeutic peptides. The focus will include infectious diseases and lifestyle related disorders.

What are your key challenges? And how did you overcome these?

Our challenges are not much different from that of the industry. The Indian pharmaceutical industry is likely to face the following challenges affecting its overall growth:

- Low per - capita spending on healthcare which is just 5.1 percent of India's Gross Domestic Product, or about \$28; .
- Government price controls continue to pose an obstacle to profitability essential for healthy breathing for industry. As such, the industry witnesses price competition which reduces the growth of the companies in value terms.
- There is a constant threat from other countries like China and Israel which are the low cost countries.