

The background features a collage of four images: a modern hospital operating room with surgical lights and equipment; laboratory glassware including beakers and test tubes; a large pile of various colored pills and capsules; and a cityscape with a large blue Euro symbol overlaid on it.

Healthcare Sector in India: Window of Opportunities for German SMEs

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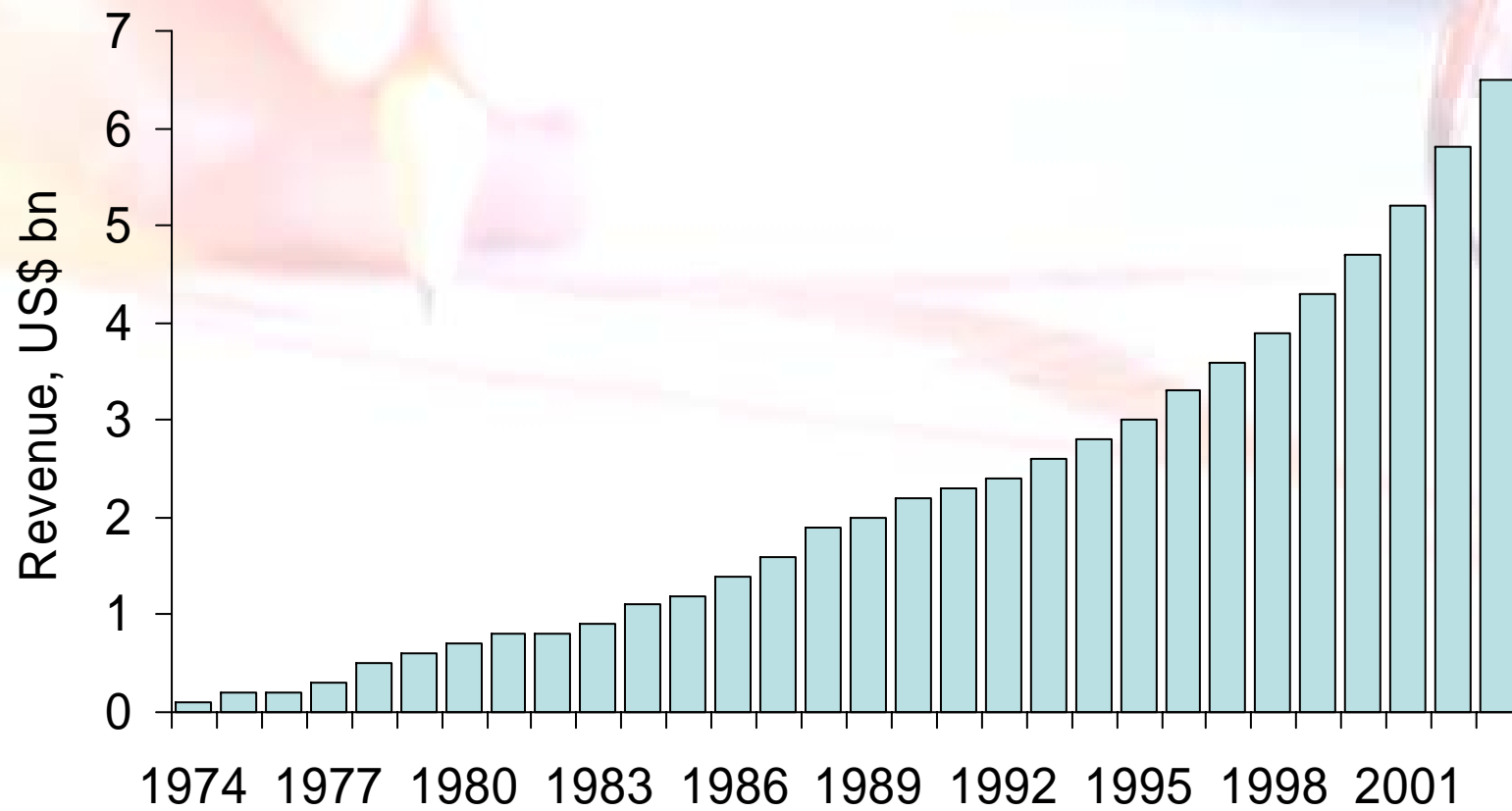
Healthcare Challenges in Asia

- ▶ Out of 1.3 billion Chinese nearly 200 million are overweight.
- ▶ In India, too, the problem is not different.
- ▶ According to a WHO study 60% of Indian population will suffer from coronary heart diseases.
- ▶ By 2030 India will have 80 million people suffering from diabetes. In 2000 this number was close to 30 million.
- ▶ Infectious diseases remain prevalent.
- ▶ Modern day diagnostic technology is available only to a fraction of the population.
- ▶ With the growth in middle-income population, demand for good health services is increasing.
- ▶ Medical tourism requires top of the line medical facilities.

Facts about Indian Healthcare Industry

- ▶ Well developed pharmaceutical industry with strong manufacturing base, growing close to 10% annually.
- ▶ Climbing the value chain from bulk drugs to formulation.
- ▶ Global no. 4 with 8% in volume and 2% in value. The largest number of USFDA approved manufacturing facility in any country outside USA.
- ▶ 40% (€ 3.2 bn) exported to 200 countries incl. U.S. and Europe.
- ▶ Clinical Laboratory Services dominated by few big players.
- ▶ Laboratory equipment manufacturing is rudimentary.
- ▶ Most equipments for clinical and R&D services are imported.
- ▶ With new hospitals coming up like mushrooms, the demand for equipments is expanding rapidly.

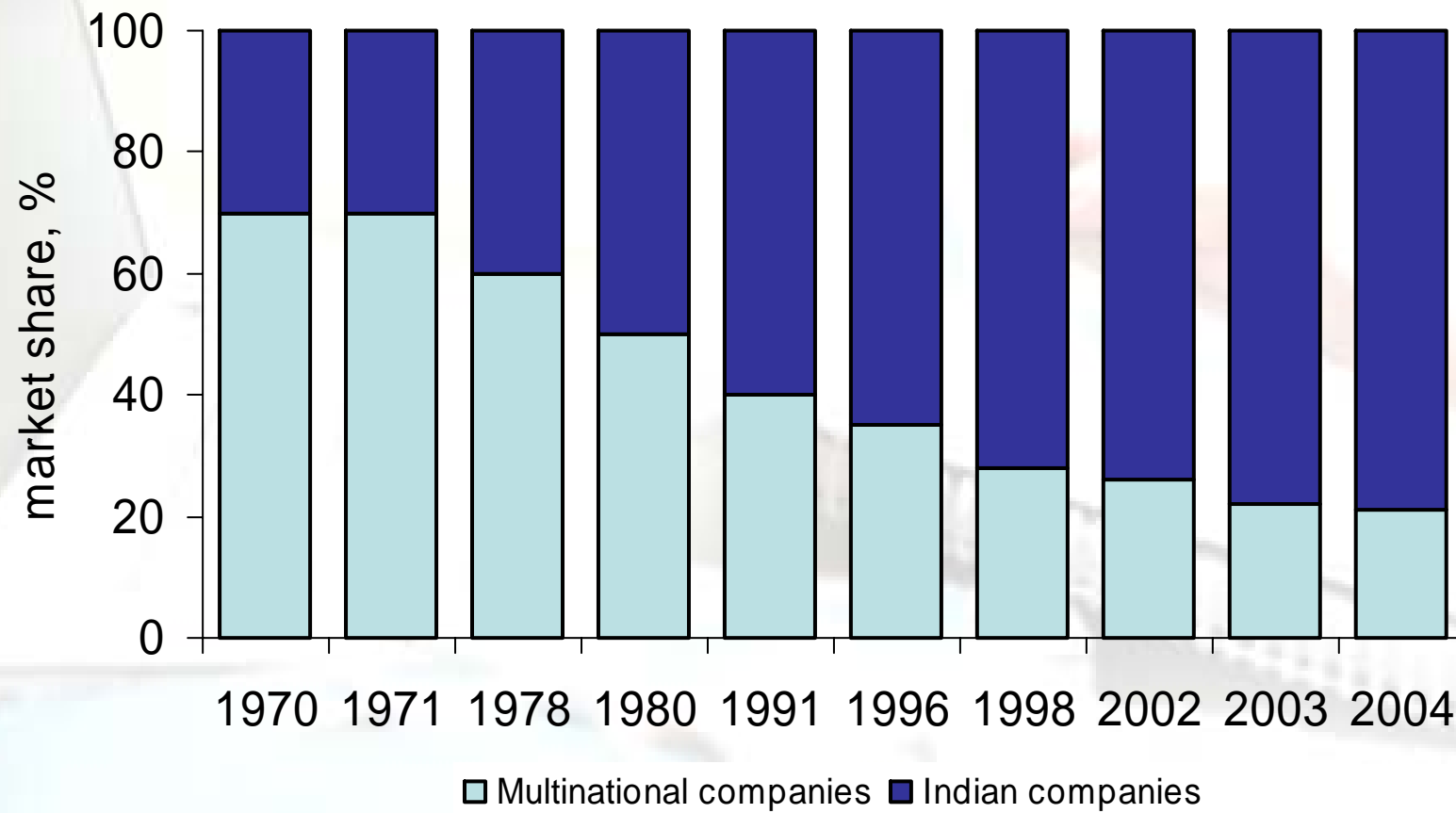
Growth in Drug Production in India



Liberalisation → Innovation → Growth

- ▶ Liberalisation and globalisation initiated in 1991 has produced a pressure on Indian Pharmaceutical and biotechnology industry to innovate.
- ▶ New IPR regime in compliance with WTO: Shift from Process patent to Product patent regime – will protect all New entrants / entities from 2005.
- ▶ New patent regulations is causing a major structural shift with the entry of foreign players.
- ▶ Foreign Direct Investment (100 %) has been allowed without prior Govt. approval in most of the cases.

Native Companies dominate India's Pharmaceuticals Market



Global Need for collaborative R&D in Pharmaceutical and biotechnological Industries

- ▶ By 2007 US patents on 35 drugs with global sales of \$73 billion will expire.
- ▶ During 1997-2001, 12 drugs with annual sales of \$11 billion were removed from the market and 28 products (potential sales of \$20 billion) were terminated in phase II or III clinical trials.
- ▶ Bringing a drug to market takes on average 8-12 years and may cost \$800 million plus.



Solution to growth?


Co-operation between Pharmaceutical industry and innovative biotechnological companies

Synergy in Biotech/Pharma R & D through Cross-Border Partnership

Competitiveness = Innovation


- ▶ Innovation is a social process
- ▶ Innovation is NOT just technology – it is networking through partnership to make optimal use of knowledge
- ▶ Thus innovative scenario is created by partners each providing a cutting edge technology
- ▶ Globalisation of innovation is the answer to problems faced by many pharma/biotechnology companies





***“In the old Darwinian economics
the big ate the small – in the future
the fast will eat the slow“***

Dr. M. D. Nair, Hyderabad, India





Globalisation of Innovation: Trends and opportunities in India

Can India be a worthy partner for Europe?

▶ Strengths

- ▶ Highly qualified and less expensive manpower
- ▶ Strong knowledgebase supported by highly developed IT-enabled services
- ▶ Well net-worked laboratories at Universities and research Institutes
- ▶ Rich biodiversity with highly homogenous ethnic population pockets
- ▶ Well developed pharmaceutical and agro industries
- ▶ Access to intellectual and capital resources from Indian scientific diaspora

▶ Weaknesses

- ▶ Research and commercialisation remain apart
- ▶ Lack of venture capital
- ▶ Relatively less R&D emphasis and expenditure
- ▶ Lack of innovative R&D culture and poor IPR protection
- ▶ Poor brand name of Indian industries

Potential areas of collaboration

Drug Discovery

- Target validation
- Animal studies
- Genomics
- In silico computational modelling
- Biologics

Drug candidates

- Custom synthesis
- Combinatorial synthesis
- Library of plant products
- Biopharmaceuticals

cGMP manufacturing

- Chemical compounds
- Vaccines
- Biogenerics
- Biologics

Clinical Trials

- CROs
- Safety & Toxicity
- Multi-centre trials
- Anti-infectives

Indian companies can become strong partners for developing therapeutically active biologics

Human proteins and peptides

- ▶ Insulin, Epo, Growth Hormone etc.
- ▶ Peptide antagonists

Enzymes and Cytokines

- ▶ tPA, Streptokinase, Interferon, Interleukins

Therapeutic antibodies

- ▶ Humanised antibodies for cancer
- ▶ Anti-angiogenic molecules

Vaccines

- ▶ Hepatitis, Dengue virus, Smallpox, Anthrax
- ▶ TB, Malaria
- ▶ Cancer vaccines, DNA-based vaccines

Diagnostics

Major constraints for a fast track Biotechnology development in India:

- ▶ Limited Venture capital support
- ▶ Unclear legal framework with respect to the export of genetic material and genetically altered organisms
- ▶ Uncertainty in data security
- ▶ IPR protection

Examples of Recent R&D Deals between Indian and Foreign Companies:

- ▶ License Agreement between **Torrent Pharmaceuticals Ltd. and Novartis Pharma AG**, for global rights to its patented AGE (Advanced Glycosylation Endproducts) breaker compound. AGE breaker compounds have potential in the treatment of heart disease and diabetes related vascular complications.
- ▶ **Glenmark Pharmaceuticals Inc (GPI)**, has signed a \$27 million royalty deal with international healthcare investment fund Paul Capital Partners' Royalty Fund to finance the development of 16 dermatological products by GPI for the US market.
- ▶ **Merck KGaA and Glenmark Pharmaceuticals** announce Collaboration Agreement on DPPIV (Dipeptidyl peptidase IV) enzyme Inhibitor for Type 2 Diabetes.
- ▶ Indian company **Advinus Therapeutics** has signed a deal with **Merck & Co. (USA)** to jointly develop two metabolic drugs. Advinus expects to gain \$74.5 million for each product and has also received an undisclosed up front payment. Additionally, Advinus will receive royalty payments on sales of the drugs.

“India is positioned to grow into a major R&D center for biotechnology companies”



G Steven Burrill is CEO of Burrill & Company, a life sciences merchant bank engaged in three core activities - venture capital investment, strategic partnering and strategic advisory services.

Pharmabiz.com, June 2004.

Thank You!

