

Pharmaceuticals & Biotech Industry

Executive Summary Report

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Report

PREPARED BY
Pukka Partners

ABOUT PUKKA PARTNERS



Pukka Partners provide customized intelligence solutions to C-suite executives and functional growth leaders, with sound expertise in business research, strategy consulting, advisory, business intelligence, and data analytics.

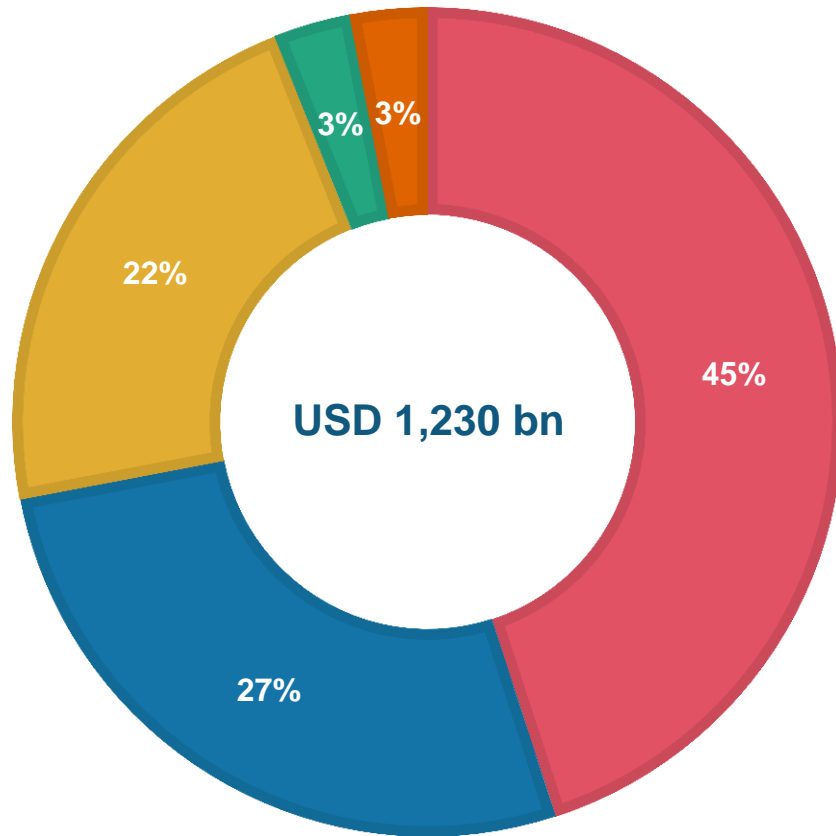
We offer advisory and actionable insights around public policies, investment tracking along with the obstacles faced by investors, innovation and strategy impact monitoring, identification of industry potential, and technology mapping through comprehensive and standardized research methodology and tools.

We deploy our solutions to solve prioritized and critical business challenges by leveraging our in-house expertise as well as continuous engagement with industry thought leaders in the business ecosystem.

In a short span of time, our consultants have had the opportunity to engage and deliver domain & sector specific tailor-made strategic projects to top executives and functional growth leaders, empowering them to make informed business decisions.

Our success is directly linked to our client's growth and we ensure to exceed it every time we engage with our existing clients and future prospects. We aim to be a knowledge partner for our customers and gradually become their trusted intelligence provider.

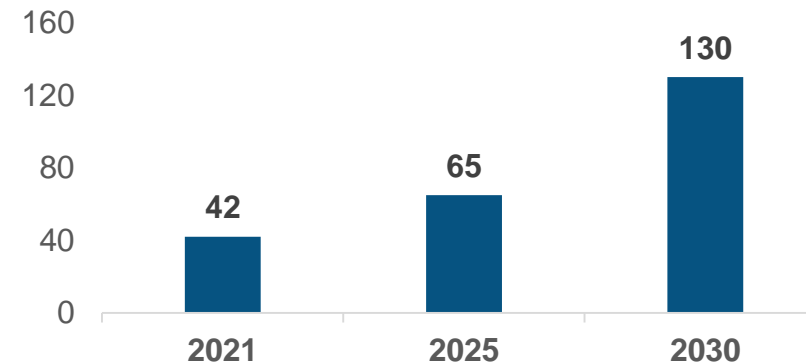
Global Market Share, 2020



■ North America ■ Europe ■ APAC ■ South America ■ Middle East & Africa

- The global pharmaceutical industry was valued at USD 1,230 bn in 2020 and is projected to be valued at USD ~1,700 bn by 2025
- The United States remains the dominant players and accounts around 41% of the market share. It is projected to be USD ~700 billion market by 2025, followed by Europe and APAC
- Indian pharmaceutical sector supplies over 50% of global demand for various vaccines, 40% of generic demand in the US and 25% of all medicine in the UK

Indian Pharmaceutical Market (USD bn)



Places where Pharmaceutical products are used

Hospitals

Vaccination
Centres

Medical Labs

Biomedical
Research

Products of Pharmaceuticals

Pills, liquids
that are
swallowed

Drops that are
put into ears
or eyes

Inhalers (like
nasal sprays
or asthma
inhalers)

Injections
(shots) or
intravenous
(inserted into a
vein)
medicines

Creams, gels,
or ointments
that are
rubbed onto
the skin

Patches that
are stuck to
skin (called
transdermal
patches)

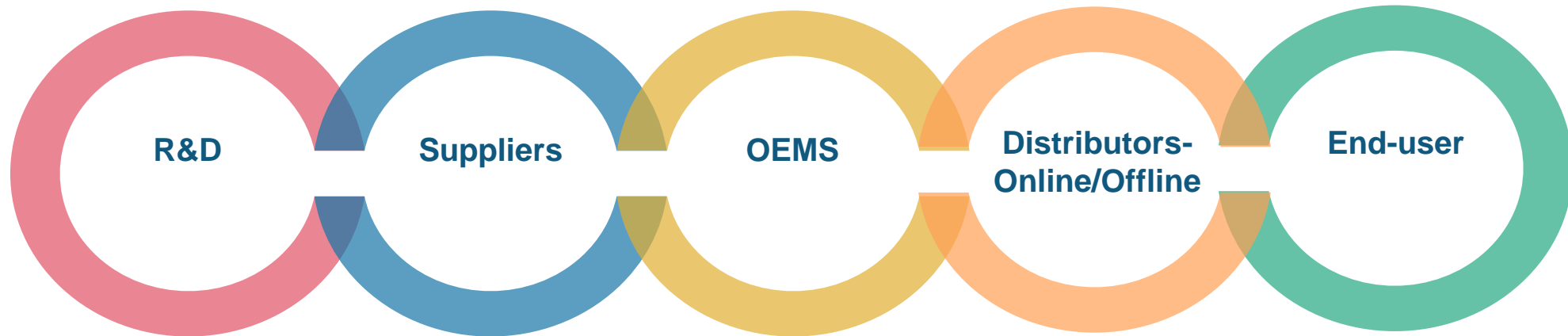
Uses of Pharmaceutical products

Used to cure,
halt, or
prevent
disease

Ease
Symptoms

Help in the
Diagnosis of
illnesses

Relieve Pain



- J&J (Johnson)
- Lupin
- Cipla
- Pfizer
- AbbVie
- Cadilla Healthcare
- Sun Pharma
- Eli Lilly
- AstraZeneca
- Sanofi

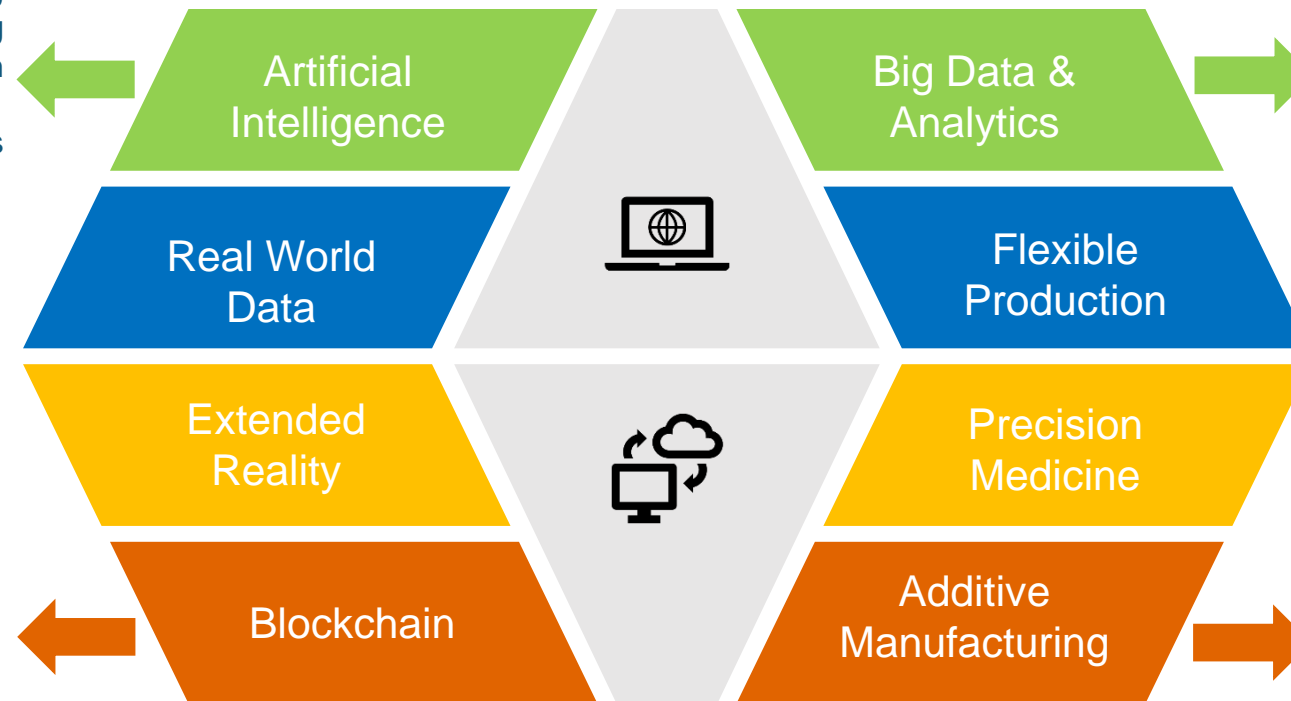
- Warsila Biotech
- Indus Pharmaceuticals
- August Organics
- Stellar Pharmatech
- Synkron Inc
- Shri Yash Chemical Industries
- S. N. Chemicals
- Benson Inc

- J&J (Johnson)
- Lupin
- Cipla
- Pfizer
- AbbVie
- Cadilla Healthcare
- Sun Pharma
- Eli Lilly
- AstraZeneca
- Sanofi

- Alfresa Holdings
- AmerisourceBergen
- Meher Distributors
- Jay-Pharma
- Dvijay Pharma
- Apollo Pharmacy Maiden Distributors
- Cardinal Health
- CR Pharmaceutical
- PharmEasy

- The Johns Hopkins Hospital
- Lucid Medical Diagnostics
- Cleveland Clinic.
- Narayana Hrudayalaya
- Aster DM Healthcare
- Dr Lal Pathlabs
- Fortis Healthcare
- Apollo Hospitals

- Startups are exploring the use of Artificial Intelligence to address the various challenges in the pharma industry, such as automation and optimization of the manufacturing processes, as well as designing effective marketing and post-launch strategies.
- Canadian startup Invivo AI develops novel algorithms for drug discovery.



- Large volumes of data available throughout the drug discovery and development process require high-performance systems to properly analyze data and derive value from it.
- Belgian startup Pryml develops a platform that allows data scientists to build applications on confidential or sensitive data of organizations.

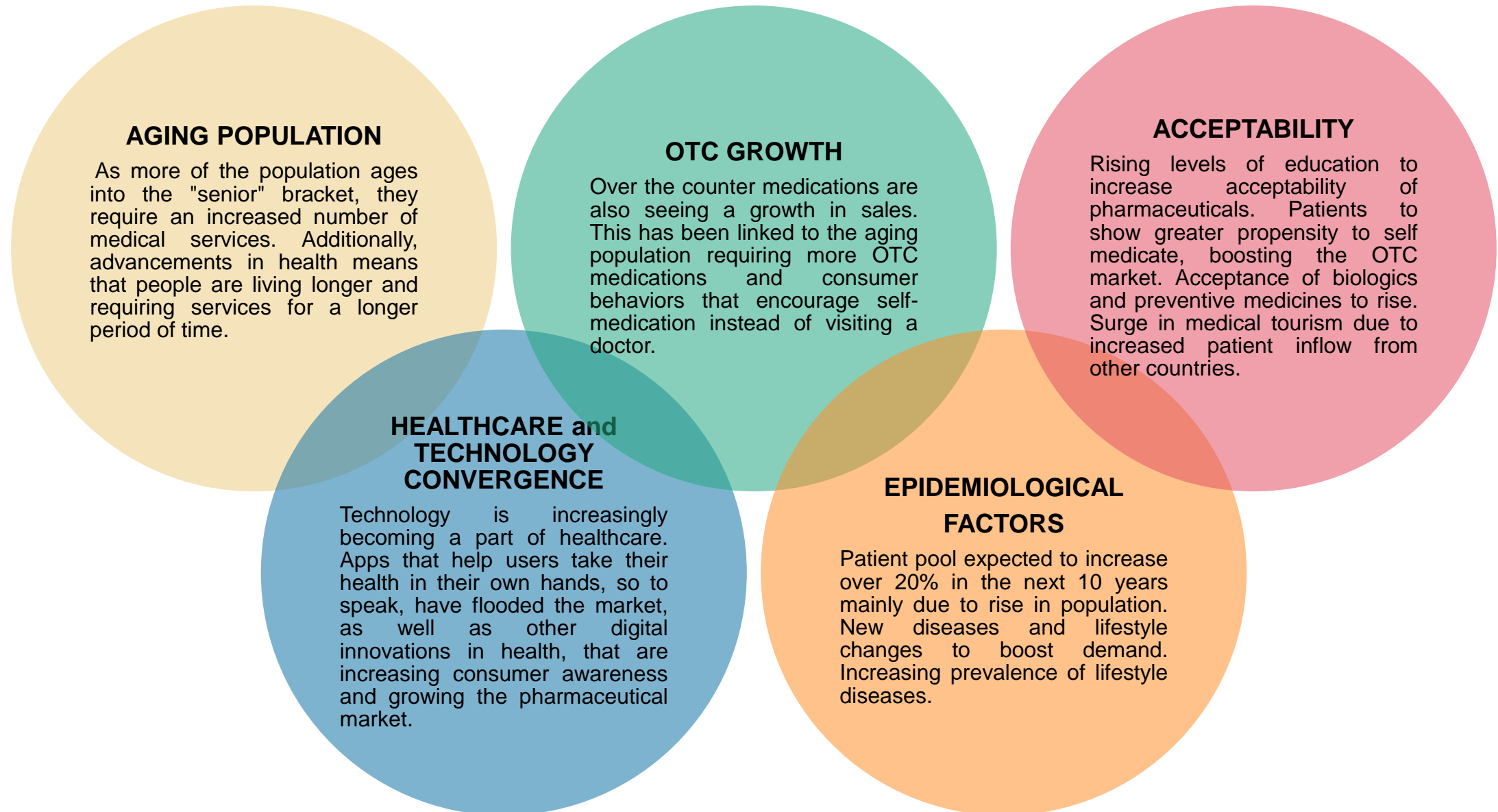
- Blockchain technology is also being explored to tackle the use of counterfeit medicines and substandard drugs that enter into the pharmaceutical supply chain and kill thousands of patients every year.
- PharmaTrace, a German startup offers a blockchain-based ecosystem to secure data and deploy smart contracts in the pharmaceutical industry.

- The need for precision medicine is also making pharmaceutical companies rethink the manufacturing process. A lot of research is underway for making advanced 3D printers that print tissues or cells.
- US-based startup Frontier Bio offers FLUX-1, a 3D bioprinter for making human tissues.

Key emerging trends and their implications for Pharma

Trends		
Market trends	Health and healthcare trends	Scientific and technological trends
<ul style="list-style-type: none"> • Patients are becoming better informed • Patients are picking up a bigger share of the bill • Demand for personalized medicine is increasing • Patients want cures, not treatments • The emerging markets are becoming more important 	<ul style="list-style-type: none"> • The burden of – and bill for – chronic disease is soaring • Healthcare payers are establishing treatment protocols • Pay-for-performance is on the rise • The boundaries between different forms of care are blurring • Financial constraints on payers are increasing 	<ul style="list-style-type: none"> • R&D is becoming more virtualized • The research base is shifting to Asia • Remote monitoring is improving rapidly

Implications		
Pharma will need to go “beyond the medicine”	R&D will need to go beyond the lab	The Pharma and healthcare value chains will become much more intertwined
<ul style="list-style-type: none"> • Pharma will be paid for outcomes, not products • Outcomes data will drive healthcare policy • Prevention will gain a higher healthcare profile • Pharma will need to offer “medicineplus” packages of care • Pharma will have to adopt more flexible pricing strategies 	<ul style="list-style-type: none"> • Pharma will need access to outcomes data • Pharma will have to work with technology vendors to virtualize R&D • Pharma will need a wider, more multi disciplinary skills base • Pharma will need to expand its presence in Asia • Pharma will need to demonstrate “real” value-for-money 	<ul style="list-style-type: none"> • Pharma will have to work more closely with the regulators • Pharma will have to collaborate with payers and providers to perform continuous trials • Pharma will have to collaborate with numerous service providers to deliver packages of care



GROWTH DESPITE COVID

Despite the Covid-19, the pharma market should increase by 4.4% p.a., on average, over the 2020-2024 period.

NEW TREATMENTS

Boosted opportunities to discover new treatments, such as for Covid-19 vaccine through partnerships:

- Public-Private with academics or public funds.
- Private-Private with other pharma companies.

HIGH-END DRUGS

- Due to increasing population and income levels, demand for high-end drugs is expected to rise.
- Growing demand could open up the market for production of high-end drugs.

PENETRATION - RURAL MARKET

- With 70% of India's population residing in rural areas, pharma companies have immense opportunities to tap this market.
- Demand for generic medicines in rural markets has seen a sharp growth.

CLINICAL TRIALS MARKET

India is among the leaders in the clinical trial market. Due to a genetically diverse population and availability of skilled doctors, India has the potential to attract huge investments to its clinical trial market.

CRAMS

- The Contract Research and Manufacturing Services industry (CRAMS) - estimated at US\$ 17.27 bn in 2017- 18, is expected to reach US\$ 20 bn by the end of 2020.
- The market has more than 1,000 players.

Differentiation - Players in the sector are trying to strengthen their position in the market and expand themselves by investing heavily in R&D activities.

Cost Leadership - Market players are trying to achieve cost leadership by Vertical Integration: Complex API, which require special skills and technology, are developed and scaled up for both API and dosage forms.

Focus on New Markets - Lupin is making road into new markets such as Latin America, Russia and other East European countries.

Value creation by Alliances / M&A - Companies need to look for inorganic value creation and speed to market opportunities.

Build Agile Organization - To successfully respond to uncertainty, companies will have to create a culture of agility and innovation.

Good Social Media Presence - The latest pharma marketing tactics require all drug manufacturers, physicians, and sales representatives to have a perfect presence on social media.

The Russian Direct Investment Fund (RDIF) had reached agreements with five pharmaceutical firms (Gland Pharma, Hetero Biopharma, Panacea Biotech, Stelis Biopharma, Virchow Biotech) to produce Sputnik V in India.

Pharmaceutical companies pay doctors billions of dollars for consulting, promotional talks of their products and more.

In June 2020, the SII signed a licensing deal with AstraZeneca to locally produce Covishield (co-developed by AstraZeneca and the University of Oxford). The vaccine was supplied to public and private players.

The Union health ministry has placed an order with Serum Institute of India for 25 crore doses of Covishield and with Bharat Biotech for 19 crore doses of Covaxin on 8th June, 2021.

In February 2021, the Russian Ministry of Health allowed Glenmark Pharmaceuticals to market its novel fixed-dose combination nasal spray in Russia.

Aurobindo, Cipla, Desano, Emcure, Hetero Labs, and Laurus Labs have a sub license with the UN-backed Medicines Patent Pool to manufacture anti-AIDS medicine TenofovirAlafenamide (TAF) for 112 developing countries.

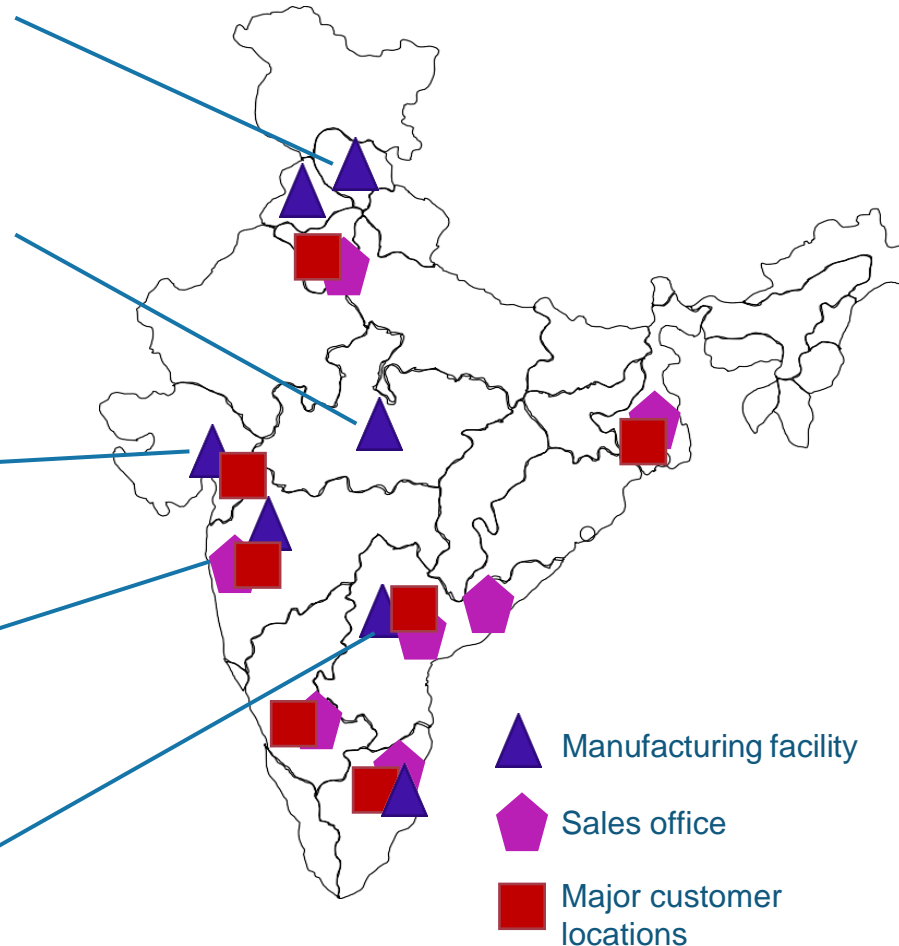
Wockhardt's facility covers an area of 40,468 sq. meters in Baddi, Himachal Pradesh. Baddi is also home to Cipla's formulations manufacturing facility.

Mandideep in Madhya Pradesh is the manufacturing hub for Lupin's cephalosporin and ACE-Inhibitors. Cipla has a formulations manufacturing plant at Indore.

Dholka in Gujarat houses a major manufacturing facility of Cadila, which spans over 100 acres.

Lupin has an USFDA-approved plant at Tarapur, Maharashtra. The facility forms the core of Lupin's fermentation capabilities

Piramal's USFDA-approved manufacturing plant in Hyderabad. GlaxoSmithKline has a major facility at Rajahmundry, Andhra Pradesh.



Andhra Pradesh, Gujarat, Maharashtra, and Goa are the major pharmaceutical manufacturing clusters in the country. The bulk drug clusters are located primarily in Ahmedabad, Vadodara, Mumbai, Aurangabad, Pune, Hyderabad, Chennai, Mysore, Bangalore and Visakhapatnam

Cost Efficiency

Low cost of production and R&D boost efficiency of Indian pharma companies, leading to competitive export.

•Increasing Investments

•The foreign direct investment (FDI) inflows in the Indian drugs and pharmaceuticals sector stood at US\$ 17.75 bn between April 2000 and December 2020.

Economic Drivers

High economic growth along with increasing penetration of health insurance to push expenditure on healthcare and medicine in India.

•Policy support

•In February 2021, the government approved a production-linked incentive (PLI) scheme for the pharmaceuticals sector from FY21 to FY29. The scheme is expected to attract investments of Rs. 15,000 crore (US\$ 2.07 bn) into the sector.

The Pharmaceutical Industry has shown great potential and continues to grow consistently. If the Global Pharmaceutical Industry's worth was a country then it would have been the 13th richest country. The Global Pharmaceutical Industry will be worth USD 1,570 bn by 2023. Since health is an important parameter, the industry continues to be regulated.

Over the past year, the total value of M&A deals was \$137 bn - approximately 1.69 times the previous five-year average of \$81 bn. The biggest deals of last year included AbbVie's acquisition of Allergan, BMS' purchase of Celgene and Amgen acquiring Celgene's leading drug Otezla for \$13.4 bn. Mergers and acquisitions are fundamental to the development of the pharmaceutical industry and a core component of growth strategies under the complex and challenging conditions that exist today.

The average human lifespan is exposed to many infections and diseases that require preventive approaches to maintain health and increased research to improve quality of life among the population. Hectic daily schedules, lack of exercise and sleep, unhealthy eating habits and other lifestyle choices has resulted in poor digestion, high obesity rates, breathing difficulties and other health problems.

Globalization and urbanization are major driving forces in the growing demand for health supplements and improved medications. Rising number of chronic diseases have made people become more dependent on health supplements and medications. The new drug sector is also expected to record a healthy growth owing to significant industry wise increase in R&D expenditure and proposed new drug launches.

On the whole, the future is bright. Medical innovation accompanied by economic growth means that the decades ahead will see a much larger pharmaceutical sector. The pharmaceutical sector of the future will be very different than today's market which is led by small molecule oral solid dose pills. The future sector will feature co-existence of chemical drugs, advanced biologics, nucleic acid therapeutics, cell therapies and implantable.

Innovation-led research and development, disruptive technology like 3D printed drugs, artificial intelligence guided therapies and preventive medicine healthcare delivery (R&D), manufacturing and supply chain and market access are the opportunities that have emerged to accelerate the growth of pharmaceutical and healthcare industry. Thus, the pharmaceutical sector continues to be an attractive destination for companies and investors.

— **THANK YOU** —

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