

**OPPORTUNITIES FOR UK
REGIONS IN INDIA: AN
ANALYSIS OF KEY SECTORS
FOR COLLABORATION**

AUGUST 2022

CONTENTS

Introduction.....	3
Methodology.....	4
A. Combined Authorities	5
Cambridgeshire and Peterborough	6
Greater Manchester.....	8
Liverpool City Region	10
North of Tyne.....	12
South Yorkshire	14
Tees Valley.....	16
West Midlands	18
West of England	20
West Yorkshire	22
North East.....	24
B. Indian Clusters by Sector.....	26

INTRODUCTION

The 'levelling up' agenda and 'Global Britain' will be two of the defining tenets of the next decade in the UK's development story. Both principles have their own motives and objectives, and both have significant implication for the other. The opening up of trade and investment opportunities for businesses in all regions of the UK will play a key role in delivering on the levelling up agenda and in delivering for consumers across the country. Likewise, encouraging investment throughout the UK will help to grow more international collaboration opportunities, create jobs, and stimulate innovation.

India is a key partner in the UK's post-Brexit international relations, in particular as a consequence of the 'Indo-Pacific Tilt' that has characterised the country's foreign policy and trading priorities. Closer trade ties with the Indo-Pacific region, which will harbour much of the world's economic growth this century, and specifically with India, could provide great benefits to the UK, both in the short-term as business opportunities expand and in the long-term as the region grows.

The UK and India share great synergies, both in shared areas of strength such as the digital sectors, in the size of their economies as the fifth and sixth largest in the world, and in areas of complementarity. For example, the UK is a world leader in engineering and advanced manufacturing technology, while India is home to an abundant, highly skilled labour force and is pushing its own manufacturing agenda under the Make in India initiative.

The UK-India partnership is set to grow after our countries formally launched Free Trade Agreement (FTA) negotiations in January 2022, eight months after our Prime Ministers signed a 2030 Roadmap that aims to double bilateral trade this decade and bring the relationship to the next level through cooperation on climate action, defence, education and more. Pre-pandemic, in 2019, bilateral trade totalled GBP 23 billion and investment is strong with more than 500 UK businesses already invested in India employing more than 400,000 people, and over 850 Indian companies in the UK, employing over 95,000.

There is huge room for growth, however. An FTA is estimated to boost our total trade by up to GBP 28 billion a year by 2035 and increase wages by up to GBP 3 billion across the UK. Reducing the barriers to trade and building on this existing foundation would help to create more jobs, increase prosperity, and stimulate economic growth and wider development in both countries. Ensuring that regions and the businesses within them all play a part in this growth and reap the benefits will thus be essential to the success of levelling up and the bilateral relationship.

There is great diversity across the UK and so to maximise the opportunity it will be important to recognise where strengths and priorities lie on a regional basis. Likewise, India is home to various clusters where certain sectors are stronger than in other areas. Especially in the case of India, such is the size and diversity of the country between states, it is important that UK businesses are aware of the clusters that are fitting of their sector and goals.

This report seeks to identify the regional strengths in both countries and highlight synergies to enable businesses in certain sectors and regions to succeed in the UK-India economic corridor. In section A, it sets out the existing sector strengths and future priorities of various regions of the UK by way of the Combined Authorities. In section B, we provide a market overview of these sectors in India and identify the clusters in India where there is real strength and opportunity for greater trade, investment and collaborations.

METHODOLOGY

This report has been produced through primary and secondary research. First, we utilised the Local Industrial Strategies of the UK's Combined Authorities (CAs) to ascertain the priority sectors and sub-sectors for each region. These were complemented by discussing these priorities with the CA teams. The sectors and sub-sectors highlighted are extensive of the region's various strengths however each region is not limited to these sectors. Each region's economy has further strengths and priority areas for future growth, but this has been limited for the purposes of this report and by considering those sectors which best complement India's offering.

Once the CA priorities were established, we identified the Indian regions and clusters where these priority sectors and sub-sectors are strongest.

For mapping of these sectors across India, as a first step, we identified the regional clusters by states as mentioned in research reports, news articles, and financial publications. While most of the clusters are based on the portfolio size, that is, cities/states with either the greatest number of companies or the leading subsector-specific companies/units, few of them have also been identified based on relevant information, as per the availability. For example, clean energy clusters are based on installed capacity and diagnostics clusters are based on the concentration of nationally accredited labs.

In the second step, we identified the major Indian companies in the clusters through annual reports, industry reports, and articles. For subsectors that are very niche and have limited data for cluster-specific companies, we have also identified leading Indian subsector-specific companies present across the country. We have also validated their locations such as India/global headquarters through the company websites.

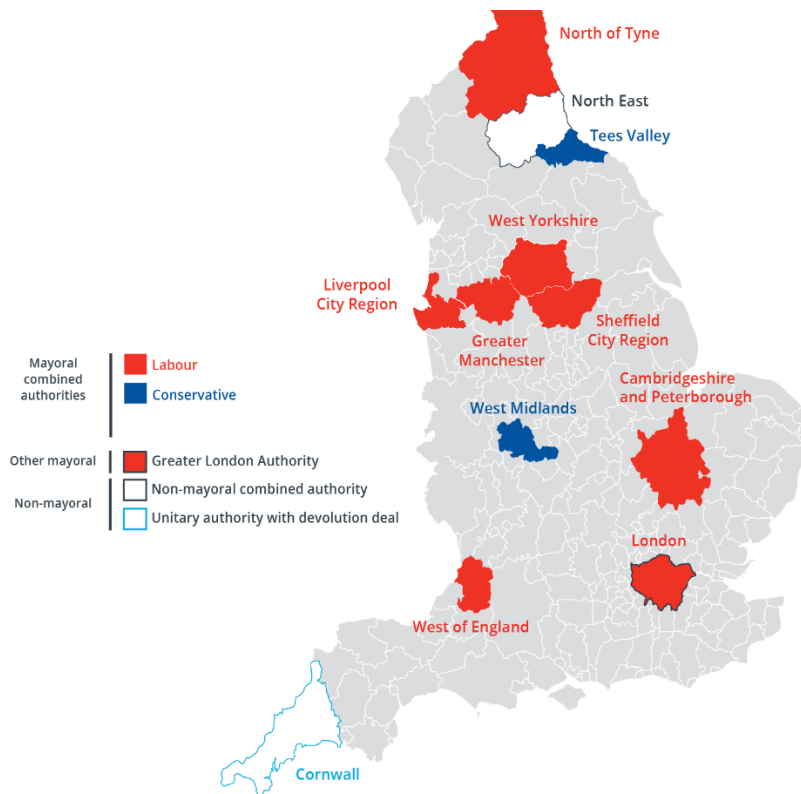
Further, we identified UK/International companies in each subsector and in case of data insufficiency we have also identified those present in India through a subsidiary, joint venture, etc. We have referred to company websites, news articles, reports validating global headquarters and India presence. However, there is limited information available in limited cases.

In the last step, we have marked Indian Companies already identified earlier in the second step and checked if they are present in the UK through their company websites, news articles, etc. In some cases, we have also supplemented this with other Indian companies in that subsector which are also present in the UK.

A. COMBINED AUTHORITIES

Combined authorities are corporate bodies formed of two or more local government areas (Councils). The creation of the authorities enables a group of local authorities to collaborate and take collective decisions across council boundaries, including on issues such as spatial planning, regional transport, the provision of skills training, business support services, and economic development. Although established by Parliament, CAs are locally owned and have to be initiated and supported by the councils involved.

To date, there are 10 CAs in total in England, 9 of which have an elected Metro Mayor: *Cambridgeshire and Peterborough*; *Greater Manchester*; *Liverpool City Region*; *North of Tyne*; *South Yorkshire (was Sheffield City Region)*; *Tees Valley*; *West Midlands*; *West of England*; *West Yorkshire*; *North East Combined Authority (No directly elected mayor)*. Metro mayors are distinct from the mayor of London, who heads the Greater London Authority formed in 2000.



Source: Institute for Government analysis, May 2021.

CAMBRIDGESHIRE AND PETERBOROUGH

The Cambridgeshire and Peterborough Combined Authority has identified the area's sectoral strengths and specialisms as including¹:

- Healthcare and Life Sciences
- AgriTech
- Digital and IT

Life sciences

Life sciences is one of the UK's greatest business strengths, and the reach of the biomedical industry in Greater Cambridge, and increasingly Huntingdon, is international. The cluster is worth around GBP 3 billion annually to the UK economy, encompassing over 430 companies and employing over 15,000 people.

The cluster is the global HQ of AstraZeneca and also has the presence of other global industry leaders such as GlaxoSmithKline and Envigo. The sector covers a wide variety of interrelated fields, including pharmaceuticals, genomics, and biodata.

The Science Industry Partnership, which brings employers together with government to provide vocational skills needed for the science industry, is launching its first local programme in Cambridgeshire. Apprenticeship standards for the bioinformatics sector and other key sectors are also being developed.

Local partners in Cambridgeshire and Peterborough will continue to deepen the connectivity between research, industry, and the public sector (especially the hospitals), with a specific focus on addressing the Ageing Society Grand Challenge. This will include the creation of an Innovation Launchpad, based on pioneering business scale-up approaches already proven in California, partnering with a global player to help start-ups and scale-ups get access to customers and markets worldwide.

See relevant sectors: Genomics (page 42) and Pharmaceuticals (page 44).

AgriTech

The Cambridgeshire and Peterborough area (and the wider east of England) is one of the most fertile soils regions in the UK and is home to many progressive and innovative farmers, ground-breaking technologists and innovative companies across the food and drink value chain as well as centres of world-leading research. The management of and confidence in key data, including the associated analysis and interpretation for aiding reliable decision making will become ever more important.

There are untapped potential opportunities across the local area for growing and strengthening this sector specialism, and by creating better connections with local clusters in clean growth, advanced manufacturing, artificial intelligence and machine learning – collectively tackling other key policy agendas in the UK and on a global stage such as healthy ageing, nutrition and well-being. A big opportunity within this is to develop new career opportunities as part of the devolved local skills system.

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/818886/Cambridge_SINGLE_PAGE.pdf

Cambridgeshire and Peterborough's ambition is also to support further growth in pioneering research and development in plant science and precision agriculture, as part of a regional offer.

38,000 people are currently employed in the agri-tech sector in the local economy, generating approximately GBP 4 billion of economic value per annum. The strength and breadth of the research base is built on a highly skilled, international workforce, and highly-reputed centres such as NIAB and the University of Cambridge. Firms in the economy have expertise in sensors, robotics, genomics and communications and are at the forefront of ideas and commercial applications that are shaping the food production in the UK and globally. Automation provides opportunities for economies of scale to increase the efficiency with which food and drink is produced, and new career opportunities are developing in engineering; robotics; software development and producing algorithms.

See relevant sectors: AgriTech (page 68) and Food and Drink (page 34)

Digital and information technologies

The vibrancy and technological expertise of the Cambridgeshire and Peterborough area digital sector is a significant reason for the area's international attractiveness. The sector delivers almost nine per cent of the area's revenue and eight per cent of employment. Furthermore, it is the fastest growing knowledge intensive sector, increasing 10.4 per cent from 2016-2019 (compared to 6.6 per cent for KI as a whole). FDI into the area and sector is already strong. A well-known example, ARM, was started in Cambridge with fewer than twenty employees and has grown into a global player valued at GBP 24 billion in 2016. This is one reason why Greater Cambridge is an internationally recognised centre for artificial intelligence and digital technology innovation, with Cambridge University among the top five globally in this area.

The opportunity is to establish Greater Cambridge and the Arc as the preferred global base for firms from across the world to create and adopt the technologies of tomorrow, offering businesses exceptional talent at all levels and a highly networked ecosystem that has global impact.

See relevant sectors: Artificial Intelligence (page 56)

Cambridge and Peterborough also has strengths in:

- Advanced manufacturing and materials
- Logistics
- Health and social care
- Education
- Construction

GREATER MANCHESTER

The Greater Manchester Local Industrial Strategy has identified the area's sectoral strengths and specialisms as including²:

- **Health innovation**
- **Advanced materials and Manufacturing**
- **Digital, Creative and Media**

Health Innovation

Greater Manchester has recognised research capabilities in health innovation and one of the largest life sciences clusters outside southeast England. The region aims to lead Britain and the world in the roll-out of new health and care technologies, and transforming health and care systems.

The Industrial Strategy's Ageing Society Grand Challenge recognises the opportunity posed by an ageing population. As the UK's first World Health Organisation Age Friendly city-region, Greater Manchester has already taken charge of capitalising on this opportunity. Greater Manchester will also work to identify a home for a prospective International Centre for Healthy Ageing to drive real-world testing and commercialisation of health, care and wellbeing innovations that support healthy ageing.

Diagnostics is an area of increasing priority within the healthcare sector for Greater Manchester.

See relevant sectors: Diagnostics (page 46)

Advanced Materials and Manufacturing

Greater Manchester is the home of graphene and other revolutionary 2D and advanced materials. The successful commercialisation, adoption and diffusion of these materials will support an industrial renaissance in the UK. Greater Manchester will establish a new Graphene, Advanced Materials and Manufacturing Alliance to develop the city-region's advanced materials and manufacturing strategy, with government on its board. Greater Manchester has a complementary advanced manufacturing base with strengths in materials and textiles, chemicals, and food and drink, amongst others, which provides the industrial capacity to commercialise these new materials.

The city-region's manufacturing industry, which employs 110,000 people and generates GBP 8 billion of economic output each year, is being transformed by the Fourth Industrial Revolution, which is driving productivity improvements through the adoption of digital technologies, artificial intelligence and efficiency improvements.

See relevant sectors: Graphene (page 30)

Digital, Creative and Media

Greater Manchester has the largest digital and creative sectors outside the south east, with the potential to create internationally significant clusters in broadcasting, content creation and media and cyber

² <https://www.greatermanchester-ca.gov.uk/media/2132/gm-local-industrial-strategy-web.pdf>

security, alongside new sub-sectors like e-commerce where the city-region has the potential to lead industries of the future.

The explosion of the data and digital economy over the past decade is enabling growth across the economy, and has the potential to transform public services to support improved productivity. At the same time, cross-cutting digital strengths will accelerate the use of productivity enhancing digital technologies and big data in all sectors to meet the Artificial Intelligence and Data Grand Challenge.

Greater Manchester aims to build on its position as a leading European digital city region, to maximise growing assets in cyber security and capitalise on the links between digital, creative and other industries in the city-region that feed innovation in broadcasting, content creation and media, as well as in e-commerce, fintech and other new technologies.

See relevant sectors: Cyber security (page 62) and Creative and Media (page 60)

Clean Growth

Greater Manchester's research assets and large low carbon goods and services sector already includes 2,500 companies and employs over 45,000 people. While significant progress has been made in improving the city-region's environment, Greater Manchester will face challenges including rapidly increasing the energy efficiency of buildings, decarbonising heating and cooling, significantly upscaling local renewable energy generation and decarbonising transport. To drive progress, Greater Manchester has already developed a 5-year Environment Plan that sets out actions to reduce carbon across all sectors of society, and is working towards a coordinated Clean Air Plan, to address poor air quality – the largest environmental risk to public health in the city-region.

See relevant sectors: Green hydrogen (page 76)

Other key elements of the Greater Manchester LIS

- Artificial Intelligence and Data
- Healthcare
- Future of Mobility

LIVERPOOL CITY REGION

Liverpool City Region has identified the area's sectoral strengths and specialisms as including³:

- **Advanced Manufacturing and Engineering**
- **Healthcare and Life Science**
- **Maritime sector**

Advanced Manufacturing and Engineering

Liverpool City Region is taking a lead in driving forward the digitalisation of industry through the convergence of digital, manufacturing and engineering competencies. Industrial Digital Technologies are transforming UK industry with high-performance computing and Artificial Intelligence (AI). LCR's innovators are creating unique robotic solutions to complex industry problems and are developing new digital tools and techniques to open gates to new industries and ways of working.

Complementing this is a research base with expertise in improving manufacturing output, including the Faculty of Engineering and Technology, at Liverpool John Moores University. LCR has a business base of successful advanced manufacturers, including leading industrial businesses such as Jaguar Land Rover, Unilever, Pilkington, AstraZeneca, ABB, Cammell Laird, Ineos and Orsted.

One example of how LCR will deliver on its Industrial Digitalisation for Sustainability opportunity is through the development of expertise in sustainable packaging. LCRCA are working with Unilever Plc and the Centre for Process Industries to develop plans for a National Packaging Innovation Centre on the Wirral, a physical locus for a centre for sustainable packaging research and commercialisation.

See relevant sector: Sustainable Packaging (page 36)

Healthcare and Life Science

There is a critical mass of scientific assets within the City Region and proven excellence in science and research. This has supported the development of trailblazing health and life science research. The foundations of the ecosystem includes world-leading research in infection at the Liverpool School of Tropical Medicine, materials chemistry and sensor technology, high performance and cognitive computing at Sci-tech Daresbury, and specialist NHS Trusts. Open health innovation is already supported by the global companies that are investing in the City Region: AstraZeneca; Allergan; Baxter Healthcare, Bristol Myers Squibb; Lilly; Nestlé Health Science; Seqirus and Unilever.

LCR has developed this expertise in R&D, innovation and manufacturing to improve health outcomes with particular focus on: Infectious Diseases; Bio-manufacturing; Med Tech; and Digital Health (including Artificial Intelligence). Liverpool is increasingly developing its strength in vaccines, with presence of Liverpool School of Tropical Medicine and AstraZeneca in the region major pulls.

See relevant sectors: Digital healthcare (page 50); Clinical Research (page 52); and Biotechnology (page 54)

³ https://www.liverpoolcityregion-ca.gov.uk/wp-content/uploads/LCRCA_LIS_March_2020.pdf

Maritime

Liverpool City Region is focussed on building upon its strong maritime innovation capabilities and heritage which saw the region become home to the world's first ever steel hulled ship, first ever lifeboat station, first radar controlled port and first ever commercial wet dock. Today, LCR's maritime sector directly supports 7,900 highly productive jobs and generates GBP 650m in GVA with a wider economic impact of GBP 1.7 billion GVA annually, with shipping and shipbuilding making up its largest industry. Liverpool City Region is also home to a diverse range of world class maritime companies providing national and global expertise in the ports industry, marine engineering, leisure marine, and maritime financial and professional services. The City Region is well placed to handle the likely reorientation of UK trade following Brexit, with its ideal location on the UK West Coast, on the transatlantic trade route to North America and the via the Panama Canal to Australasia and the Far East. LCR will enable its maritime ecosystem to be at the forefront of developing and adopting cutting edge technologies in areas such as smart shipping, robotics, clean growth and ship-tech digitalisation – ensuring the region plays a leading role in the fourth industrial revolution as it did for the very first.

See relevant sector: Ship building (page 40)

Social Innovation

LCR also places social innovation front and centre in the region's priorities. However, this is a niche sector at a nascent stage in India with difficult in defining clusters.

NORTH OF TYNE

The North Of Tyne Combined Authority is made up of Northumberland; Newcastle; and North Tyneside, and has identified the area's sectoral strengths and specialisms as including⁴⁵⁶:

- Energy
- Life Science and Healthcare
- Agritech
- Financial and Professional Services

Energy, Offshore, Wind and Subsea

North of Tyne's engineering skills, proximity to North Sea energy resources, port infrastructure and easy road access has made the region the UK's leading offshore energy industry. With over 530 companies employing more than 28,000 people.

Businesses locating here can also benefit from world-leading R&D facilities, including Newcastle University's GBP 7 million engineering research facility, the Tyne Subsea, as well as the National Centre for Subsea and Offshore Engineering, and the Offshore Renewable Energy Catapult, the UK's flagship technology innovation and research centre for offshore wind, wave and tidal energy. The region is home to global giants Siemens, TechnipFMC, GE Wellstream, Bridon Bekaert and Shepherd Offshore.

The transition to renewable energy sources is opening new opportunities too. In December 2020, British Volt made a significant commitment to investing GBP 2.6 billion in its first ever Gigafactory in Northumberland. Plans to open the plant in 2023 are well underway. The plant will produce 30GW lithium-ion batteries powering up to 300,000 vehicles a year and create 3,000 direct jobs with a further 5,000 throughout the supply chain network. This investment will support the North East's ambition to become the leading location for the future electrification of vehicles when British Volt joins other industry leaders in power electronics such as AVID Technology. Supply chain opportunities will be significant, and a strong cluster is now well on its way to being established with the support of a strong network of organisations including the North East Automotive Alliance, the Department for International Trade and Driving the Electric Revolution.

See relevant sectors: Energy Storage (page 78) and Offshore Wind (page 80)

Life Science and Healthcare

The North East area is recognised for its established and dynamic pharmaceutical and life sciences industry including manufacturing, medical devices, assistive technology and health informatics that inject energy and creativity into the cluster. All of these areas are underpinned by strong cluster networks including Bionow, NEPIC and First for Pharma, hospital trusts and research translation organisations as well as a strong university presence from five globally recognised universities. One in four students in the region study life sciences topics, meaning businesses have ready access to the talent that can help them grow, a fact that has already proven attractive to brands like Procter & Gamble, Aesica, QuantuMDx, GSK, Piramal Healthcare, and Sterling Pharma Solutions, who call the North East home. These companies form part of a total of around 1000 life science and healthcare companies

⁴ <https://www.investnorthumberland.co.uk/business-support/>

⁵ <https://investnewcastle.com/wp-content/uploads/2020/03/Invest-Newcastle-Digital-Brochure-Feb-2020.pdf>

⁶ <https://www.investnorthtyneside.co.uk/key-sectors/>

employing 38,000 people and generate a combined turnover of more than GBP 10 billion, a contribution of around 1/3 of the UK's pharmaceutical GDP.

Pioneering in pre-clinical research, diagnostics, rare diseases and ageing, the region's GBP 1.1 billion+ regional life sciences ecosystem employs around 7,000 professionals in almost 200 companies. Newcastle boasts the region's first purpose-built commercial laboratories, The Biosphere, and benefits from a particularly well-connected network across academia, research and business. The strength of our ecosystem led Pfizer to open its first UK INSPIRE site in partnership with Newcastle University, a global top 100 university for life sciences and medicine.

See relevant sectors: Pharmaceuticals (page 44); Diagnostics (46); Medical Devices (page 48); and Clinical Research (page 52)

Agritech

The region has a growing base of hi-tech companies providing agritech services to land based industries including forestry and land management. These range from software companies to robotics and agridrones. The scale of agricultural activity in the North East region is opening up commercial opportunities throughout the agritech supply chain, particularly with precision agriculture.

Strengths in livestock farming, cereals, permanent grasslands as well as other uses is encouraging the uptake of precision technologies to monitor and enable more informed decisions on land and livestock management. This includes technologies such as: robotics; drones; farm management solutions and Variable Rate Technologies.

See relevant sectors: Agritech (page 68)

Corporate services

From legal and financial technology, to shared service and contact centres, Newcastle is home to leading corporate services brands. All 'Big Four' have a large presence in the city alongside transatlantic law firm Womble Bond Dickson, international giant Concentrix and almost 19,000 other financial, professional and business services companies regionally. Around a quarter of the region's wealth is generated in this sector and it employs over 132,500 people. Top 10 global law firm, Norton Rose Fulbright, chose Newcastle as the location for its Legal Process Innovation Hub – their only UK site outside of London – to trial and adopt new technologies in the sector.

The region has particular strengths in business process outsourcing, back and middle offices, financial technology, legal services, and contact centres, with a number of well-known businesses choosing to locate to North Tyneside including Tesco Bank, EE, Insure the Box, Engie, Balfour Beatty, and Santander.

See relevant sectors: Financial Services (page 70) and Shared Services (page 72)

SOUTH YORKSHIRE

The South Yorkshire Combined Authority has identified the area's sectoral strengths and specialisms as including:

- **Advanced Manufacturing**
- **Healthcare**
- **Digital**

Advanced Manufacturing

The Advanced Manufacturing and materials sector employs approximately 50,000 people across 3,000 companies in South Yorkshire. This includes the automotive industry, which employs around 17,000 people and the aerospace sector, which employs 7,000. The region has identified the automotive, defence, aerospace, and medtech sectors as those which hold the greatest potential for South Yorkshire to grow its exports to and investments from India.

The AMRC's manufacturing expertise spans machining, hi-tech assembly and automation, augmented and virtual reality, robotics, casting, welding, additive manufacturing, composites manufacturing, design, structural testing and training for the aerospace, automotive, energy, medical and other high-value manufacturing sectors.

The Advanced Manufacturing cluster is based around the AMID (Advanced Manufacturing Innovation District). At the heart of the AMID is the Advanced Manufacturing Park (AMP) and the University of Sheffield's Advanced Manufacturing Research Centre (AMRC), which have been driving high value innovative engineering, manufacturing research and skills development since the early 2000s and is a network of world-leading research and innovation centres working with advanced manufacturing companies of all sizes. The success of the AMID is based on the clustering of world-class manufacturing brands, such as McLaren, Boeing and Rolls-Royce, and the UK's Advanced Manufacturing Catapult AMRC, a globally significant centre of excellence that translates applied research and precision engineering and generates additional income enabling opportunities to be maximised and jobs created in the region.

The AMID is the UK's largest research-led advanced manufacturing cluster and adjacent business and science parks connect world-class capabilities and R&D assets in materials, clean energy and advanced wellness and is home to high-value businesses and skilled software engineers who are pushing the boundaries of digital efficiency and Industry 4.0.

See relevant sectors: Aerospace and Defence (page 28) Automotive (page 26)

Healthcare

South Yorkshire has one of the UK's largest concentrations of orthopaedic and medical device companies in the world, making it a leader in medical diagnostics. The region provides exceptional access to clinical trials, research collaboration and new product development, with strengths in advanced wound care, orthopaedics, surgical instruments and medical equipment.

With a background in healthcare technology, sport research and healthcare service design and flagship research Institutes for Neuroscience and Healthy Lifespan, the region's health sector has over 4,000

employers and has established a reputation for excellence in the development of innovative healthcare technologies. The City Region is host to many world-leading healthcare technology companies including Braun, Swann Morton, Orchid and JRI Orthopaedics and the only Olympic Legacy Park in the world outside of a host city. The City Region also has several large teaching hospitals, is the location for world leading clinical research and biomedical devices, and has several firms involved in diagnostic and interventional innovations (everything from surgical to artificial intelligence).

See relevant sectors: Medical Devices (page 48); Digital Healthcare (page 50); Clinical Research (page 52)

Digital

South Yorkshire's digital technology industry is currently underperforming and the region has made the sector a priority for growth. Nonetheless, SY does have a notable presence in several digital technology sub-sectors including creative, mobility, industrial, data science and learning (EdTech) technologies.

There is a growing value chain which is delivering specialist training to support growth in the sector and a thriving network of over 100 companies, incubators and organisations; all of which make-up our digital media and technology ecosystem. Over 60% of the UK's educational technology capacity is in Sheffield, and the region is home of national and globally significant businesses like The Floop, Sumo Digital, Wandisco, Zoo Digital and Twinkl.

See relevant sectors: Data analytics (page 58) and Creative and Media (page 60)

TEES VALLEY

Tees Valley has identified the area's sectoral strengths and specialisms as including⁷:

- **Chemicals and Process Industries**
- **Advanced Manufacturing**
- **Clean Energy, low carbon and hydrogen**
- **Bioscience**

Chemicals and Process Industries

Tees Valley is home to the largest integrated chemical complex in the UK and the second largest in Europe. The sector provides a significant amount of the region's jobs (5,445) and economic output (GBP 802m). The region's network of internationally excellent innovation assets, including the Centre for Process Innovation, the Materials Processing Institute and TWI will have a critically important role to play in working with industry to: future proof the chemicals and process proposition; and embed businesses within the local area. Sites at Billingham and Wilton are now occupied by local and international chemicals and process businesses including Huntsman, Lotte and Sabic. The evolution of these sites demonstrates the region's rich heritage as a globally competitive location and the ability to respond to market shifts over time. This strategy responds to current and emerging challenges (including a growing trend for investment to focus on a smaller number of globally competitive clusters) to position Tees Valley as a location where chemicals and process businesses can continue to thrive.

See relevant sectors: Chemicals (page 38)

Advanced Manufacturing

Tees Valley is home to a large, successful cluster of advanced manufacturing and engineering businesses operating across a range of industries. The sector has higher concentrations locally of economic output, jobs (18,910) and businesses (2,790). This highlights the strength and importance of the sector in the area, which is in large part due to the excellent existing infrastructure and assets that the area has to offer businesses here. There are particular strengths in the automotive sector, including companies working in areas such as vehicle engine emissions efficiency, plastics manufacture, fuel efficiency in internal combustion engines and mobility.

See relevant sectors: Automotive (page 26)

Clean energy, low carbon and hydrogen

Tees Valley's Local Industrial Strategy identifies an overarching ambition, that: Tees Valley will be a global leader in clean energy, low carbon and hydrogen. Tees Valley is in the vanguard of the transition to a UK economy built around clean energy and specifically low carbon hydrogen as a major energy vector for the future, delivering opportunities for achieving clean growth at an affordable and declining cost. The area is geographically concentrated and has a highly integrated and well-established industrial ecosystem, which underpins activity through energy production and use across our key industrial sites, such as energy intensive industries at Wilton, Billingham and Seal Sands that are connected via pipeline corridors. Currently, the sector is over-represented locally in terms of its share of businesses, jobs (7,760) and economic output (GBP 727m).

⁷ <https://teesvalley-ca.gov.uk/wp-content/uploads/2019/07/10b-Appendix-2-Draft-Tees-Valley-Local-Industrial-Strategy.pdf>

Internationally significant, locally-based innovation assets such as the Centre for Process Innovation, TWI and the Materials Processing Institute are pioneering research focussed on low carbon energy and circular economy principles including how to reduce carbon emissions and re-use waste in industrial processes. The increasing pressure to recycle plastics provides a real opportunity for the Tees Valley's substantial waste and resources processing sector to use hydrogen, its transport infrastructure and (bio) processing technology skills to lead polymer recycling and reuse as part of a wider circular economy opportunity.

The region is also developing activity to support hydrogen transport across road and rail. Seaton Port is Europe's most advanced disposal facility (providing a platform for growth in decommissioning) and we have clusters of activity related to: Biomass, biofuel, bioethanol and energy from waste plants; Clean energy producers (including EDF and SUEZ); and Offshore wind supply chain companies and deep-water port access to offshore wind developments.

See relevant sectors: Green hydrogen (page 76)

Bioscience

Tees Valley is home to a strong, distinctive and rapidly growing cluster of bioscience companies with significant opportunities for growth. This includes 495 companies across 27 individual industries, 7,975 bio-related jobs (higher than the national average) and sales of GBP 2.5 billion. The area contains multinationals FDB, Marlow Foods and GSK, an integrated chemicals complex and biorefinery, a small but growing biologics base and the South Tees Innovation Hub.

Additionally, it is home to some of the UK's foremost assets in biologics and industrial biotechnology R&D and collaboration hubs. The Centre for Process Innovation is the UK's largest innovation centre working in the biosciences, with the large-scale Biotechnology Centre at Wilton developing process for international companies up to large pilot scale and its National Biologics Manufacturing Centre working closely with companies of all sizes to develop the next generation of biological pharmaceuticals. These two facilities have world leading capability in bioscience innovation and are regularly chosen over other centres outside of the UK to provide innovation services in process definition, scale-up and piloting.

See relevant sectors: Biotechnology (page 54)

Other priority sectors:

- Digital
- Business and professional services
- Logistics
- Construction
- Culture and Tourism

WEST MIDLANDS

The West Midlands has identified the area's sectoral strengths and specialisms as including⁸:

- **Future of mobility**
- **Data driven Life Science and Healthcare**
- **Modern Services**
- **Creative content**

Future of mobility

The West Midlands looks to maximise the opportunities in the mobility sector by combining advances in data science, artificial intelligence and sensing technology for electric vehicle manufacturing. This will include completing the development of the UK Battery Industrialisation Centre and maximising the impact of funding from the Faraday Battery Challenge.

The West Midlands cluster includes cutting edge research and development and established original equipment manufacturers. These are supported by globally competitive, robust and interconnected supply chain firms, including in aerospace, automotive, rail and the crucial supporting industries of metals and materials. These supply chain strengths underpin the West Midlands' manufacturing expertise and will drive the wider innovation needed to secure a successful and balanced transition to new mobility solutions, the manufacture of batteries, connected autonomous vehicles and electric vehicle powertrain components.

The West Midlands has global research and business strengths in digital and ultra-light rail, logistics, the largest connected autonomous vehicles (CAV) testbed 'Midlands Future Mobility' and the leading specialist CAV vehicle manufacturers in Westfield and RDM. There is also a concentration of highly innovative supply chain firms, working across the full range of manufacturing, materials, design, testing and data services that make up the future mobility industry, including components for future battery manufacture.

See relevant sectors: Electric vehicles (page 82) and Future mobility (page 84)

Data driven health and life sciences

The UK has established clusters that lead the world in healthcare and medicine discovery and research. The West Midlands has strengths which complement these as a centre for testing and proving new innovations, approaches and their commercial application. The region is home to 400 life science businesses with around 11,000 employees, generating approximately GBP 4 billion turnover. There is a strong innovation ecosystem thanks to translational partnerships and facilities, a network of science parks, and a strong supply of graduate talent.

The West Midlands possesses nationally recognised strengths in healthcare data informatics, systems and digitalisation of health care services. These are aligned to strengths in genomics medicine and diagnostics, medical technologies evaluation and clinical trials.

⁸ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/802092/west-midlands-local-industrial-strategy-double-page.pdf

The region is home to the largest NHS England Genomics Laboratory Hub and leads the Health Data Research UK Midlands Site, the Midlands and Wales Advanced Therapies Treatment Centre and has four regional NHS England Global Digital Exemplars.

The West Midlands is well-equipped to become a centre for testing and proving health innovation. In particular, the development and translational medicine strengths of the West Midlands healthcare innovation ecosystem.

See relevant sectors: Genomics (page 42); Diagnostics (page 46); and Digital Healthcare (page 50)

Modern services

Changes for which the West Midlands is well placed to take advantage include AI, automation, cyber security and machine learning. With small technology firms, regionally embedded larger firms and expertise in the universities, the West Midlands is a testbed for business innovation to access and embed new applications and techniques, helping core business services firms and wider sectors deliver next generation services locally, nationally and globally. The West Midlands' 5G network will create new markets and lead to new services.

Companies have cited the availability and loyalty of skilled talent, the choice of locations, office space and attractiveness of the place to retain talent, as strong drivers of future growth in the West Midlands. Total business, professional and financial services GVA is forecast to double to GBP 50 billion between 2015- 2030, with growth forecast across all parts of the sector.

See relevant sectors: Artificial Intelligence (page 56) and Cyber security (page 62)

Creative content, especially Gaming

The West Midlands has a long history of creative business success, from the earliest development of industrial design and processing techniques to 90,000 creative jobs today. The West Midlands' core creative industries have strengths in next generation creative and commercial content creation and as a production centre for higher budget content. Demand is driving investment in new high value TV and film production capacity.

The area in and around Leamington is dubbed 'Silicon Spa' for the nationally significant concentration of gaming companies with increasing crossovers with other sectors. The area is home to companies in the gaming industry combined with virtual reality (VR) and augmented reality (AR) to develop, prototype and test new vehicles across automotive, aerospace, rail and last mile logistics as well as the wider digital manufacturing sector. Creative techniques for visualising and manipulating large and complex data sets are driving new approaches to healthcare, personal finance and insurance services, mobility, tourism and culture, and retail environments. VR and superfast connectivity are being used to train the next generation of paramedics, engineers and surgeons in environments that are as close to real life as possible. Modular construction of high quality, low energy homes begins with design-led solutions to components and build.

See relevant sectors: Gaming (page 66) and Creative and media (page 60)

WEST OF ENGLAND

West of England Combined Authority has identified the area's sectoral strengths and specialisms as including⁹:

- Advanced engineering and aerospace
- Creative, cultural, and digital industries
- Financial, business and legal 'tech' services

Advanced engineering and aerospace

The West of England is a high-value engineering and design heartland, with major international businesses such as Airbus, GKN, BAE Systems, Rolls-Royce and Boeing. Their supply chains are leading the way in aerospace research, development and design, feeding the manufacture of aircraft, helicopters, military transport, satellites and communication systems across the UK and on a global scale. 14 of the world's 15 major aerospace giants have bases in the wider south west region, centred on the cluster in Filton, South Gloucestershire. This leading engineering design capability is a crucial part of the UK aerospace system and anchors the aerospace sector within the UK. The sector accounts for over 28,000 jobs in the West of England.

See relevant sectors: Aerospace and Defence (page 28) and Satellite Communication (page 32)

Creative, cultural, and digital industries

The UK Creative Industries have been one of the fastest growing industrial sectors for the past decade and this is reflected in the West of England, with 27% growth in digital and creative employment between 2015 and 2017. The ability to combine creativity and technology is a significant strength and Bristol is one of only two cities outside London which feature in the top 10 for both creative and high-tech clusters. Bristol is one of the BBC's key sites and the BBC Natural History Unit is a core part of the region's production activity. Bristol and Bath have been cited by Tech City UK (2017) as the third largest and the most productive tech cluster in the UK, with over 36,000 digital workers to date and an GBP 8.1 billion digital tech turnover. The region's four universities play a pivotal role in the creative sector via research, investment and knowledge sharing.

The region is also home to world leading companies developing the underpinning digital technologies such as cybersecurity, artificial intelligence, high performance computing and quantum technologies.

See relevant sectors: Creative and Media (page 60) and Artificial Intelligence (page 56)

Financial, business and legal 'tech' services

The West of England has a vibrant professional services cluster, employing 58,000 people, and these businesses are increasingly harnessing the region's digital expertise to develop new products and ways of working. Bristol is home to the largest cluster and its diverse industry offering is coupled with a burgeoning fin-tech community. Financial and related professional services make a significant contribution to exports, which for the wider south west were valued at GBP 4.6 billion in 2016. The region's strength in digital technology is being applied by financial services firms and legal and tax

⁹ <https://www.gov.uk/government/publications/west-of-england-local-industrial-strategy/west-of-england-local-industrial-strategy>

specialists, as well as in new and emerging markets such as blockchain and in supply chain technology for recruitment, specialist marketing, and data visualisation.

See relevant sectors: FinTech (page 64)

WEST YORKSHIRE

West Yorkshire Combined Authority has identified the area's sectoral strengths and specialisms as including:

- **Business and professional services**
- **Digital**
- **Creative and media**
- **Life Sciences and Healthcare**
- **AgriTech**

Business and professional services

West Yorkshire is often dubbed the UK's second financial centre after London, contributing GBP 19.8 billion GVA and employing more than 350,000 people. The region has significant presence of retail banking, consumer and business lending, insurance, and credit referencing companies. It is home to the the UK Infrastructure Bank, the Bank of England and the Financial Conduct Authority, as well as the headquarters of the 3 of the UK's top 5 building societies and the UK's top 3 credit referencing agencies, the big 4 accountancy firms, and 1,600 legal companies.

Fintech is one of the major growth sectors identified by the Authority and the region is home to FinTech North, an open and collaborative platform for sharing ideas, challenges, and best practice across the FinTech community in the Northern Powerhouse. There is also strength within areas of payment processing, data analytics, and cyber security set the City Region apart with firms such as BJSS, TSYS, and ECSC based here. This has led the region to be recognised in the Kalifa Review 2021 as a cluster of internationally significant FinTech activity and home to leading fintech lender iwoca.

See relevant sectors: Financial Services (page 70); Insurance (page 74); and FinTech (page 64)

Digital

Strengths and sub-sector priorities of West Yorkshire's Digital ecosystem include AI, Data Analysis, Software development, Digital Health, Gaming, Fintech, Security, Professional Support. The region is currently home to over 8,695 digital tech businesses employing over 50,000 in digital and tech roles, as well as to 9 universities with over 12,000 students studying; data science, machine learning, AI, immersive technologies and computer science. Artificial intelligence in particular has been identified as a major strength, with the UK Government's High Potential Opportunities programme recognising the region as a world-leader in AI.

See relevant sectors: Artificial Intelligence (page 56) and Data Analytics (page 58)

Creative and media

West Yorkshire has a thriving Creative and Media ecosystem including broadcasters, independent TV production companies, digital agencies, and games designers. It is a major hub for the games industry, with over 7% of the UK industry based here, including key players like Team 17, Redkite Games, and Rockstar Leeds. The region is also stocked with UK broadcasters like ITV, the BBC, as well as Channel 4's new national headquarters. Production Park in Wakefield is home to 20 live events businesses, 2

studios and over 200 students and has welcomed the likes of Beyonce, Muse and Coldplay, who made use of their arena-sized rehearsal space and high-end creative stage and set solutions.

See relevant sectors: Gaming (page 66) and Creative and media (page 60)

Life Sciences and Healthcare

West Yorkshire is an internationally recognised healthcare and innovation ecosystem with over 20 clinical commissioning groups, 600 life sciences companies, 250 MedTech firms, and 62 digital health enterprises. This sector offers huge opportunities for investment and growth with over 196,000 people employed in health and science roles. The region is also home to NHS England, NHS Digital, Public Health England, The NHS leadership academy as well as large teaching hospitals and 20 clinical commissioning groups, as well as the world's largest healthcare data platforms NHS Spine and NHS Database, alongside leading tech companies such as EMIS and TPP. Key sub-sectors: Digital health; Medical technologies; Tissue regeneration and wound care; Diagnostics and personalised medicine.

See relevant sectors: Diagnostics (page 46) and Digital Healthcare (page 50)

AgriTech

Leeds City Region manufacturing businesses generate GBP 7 billion a year and employs 144,000 people, representing the largest manufacturing base in the UK. The region is home to over 7,300 manufacturing and engineering businesses, two-thirds of which are specialists in advanced processes, R&D and product development. There are also several universities undertaking world leading research across manufacturing and engineering development.

Sector specialisms include AgTech. As a major agricultural centre and region for the production of food the region has emerged as a leading centre for the AgTech sector research with world class and world leading capabilities across several areas including: Industrial Biotech; Green and sustainable chemistry; Anaerobic Digestion; Biofuels; Food Colloids; Controlled Environment Agriculture & Vertical Farming; Precision Farming; and Crop & Livestock resilience. North & West Yorkshire has been recognised by the Government's High Potential Opportunity Programmes as a leading centre for controlled environment agriculture in the UK, with an unrivalled cluster of producers, partners, suppliers and customers.

See relevant sectors: AgriTech (page 68)

Additional priorities

- Clean growth and sustainability
- Chemicals
- Automotives
- Food and Drink

NORTH EAST

North East Combined Authority has identified the area's sectoral strengths and specialisms as including¹⁰:

- **Digital**
- **Life Sciences and Healthcare**
- **Advanced manufacturing**
- **Energy**

Digital

The North East has a strong digital eco-system and partners are working together across business, education and the public sector to take advantage of areas of specialisation that include software, cloud computing, communications, buildings information modelling, and gaming. Emerging specialisms include data analytics, immersive technologies and cybersecurity.

The National Innovation Centre for Data based in Newcastle is shaping a role for the region in the areas of artificial intelligence and data and the Emerging Technology Centre in Gateshead is Europe's first dedicated centre for emerging technology like XR, 3D character capture and motion capture. Businesses such as Sage, Accenture, BT, IBM and Ubisoft, as well as over 2000 SMEs represent a strong foundation of businesses in the sector, supported by universities with leading research capability and incubator facilities. The region has identified digital opportunities specifically within the transport and logistics industries, including ports, airports, maritime and rail, through AI, Internet of Things, Big Data, Space and Satellite.

See relevant sectors: Data Analytics (page 58)

Life Sciences and Healthcare

The North East offers a unique environment for innovation in health and life sciences and medicines manufacturing. The region's combination of skills, physical assets, capabilities and networks excel in clinical research, innovation in pharmaceuticals, responding to an aging population. The North East makes a significant contribution to the development and delivery of drugs and treatments and hosts excellent manufacturing, research and health care organisations with the opportunity for ongoing growth.

A vibrant SME base in medical technologies, including medicine and medical technologies, testing and clinical trials. Newcastle is a hub for the development of medical science and social research in the field of ageing populations and corresponding challenges and opportunities, including the National Innovation Centre for Ageing. Similarly, the Centre for Process Innovation operates a number of innovation facilities in the region, strengthening the North East's pharmaceutical manufacturing sector.

See relevant sectors: Pharmaceuticals (page 44) and Medical devices (page 48)

Manufacturing

¹⁰ <https://www.northeastlep.co.uk/wp-content/uploads/2021/03/nel404-sep-refresh-2018-web-new-final.pdf>

While the UK as a whole has seen industrial restructuring away from manufacturing in favour of business and consumer services, the North East has retained a more balanced position. Manufacturing accounts for 15 percent of GVA and 11 percent of employment. Across the North East, advanced manufacturing is globally focused with strong clusters in automotive, and pharmaceuticals. Specifically, there is a strong base of manufacture automotive products including passenger cars, trains and heavy off-road vehicles and a range of parts and components. Nissan, Caterpillar and Komatsu are some of the household names present in the region. Likewise, the region's medicines cluster is established over many years with a range of business models and international investments, and the region is home to globally competitive pharmaceutical brands such as GSK, Aesica, and Piramal Group.

The Combined Authority has recognised the growth potential in international trade and investment and in local supply chains and a significant opportunity to deliver higher productivity by innovating in high level engineering, from design to manufacturing and from the application of number of knowledge and innovation assets. Science and innovation strengths in areas like batteries and fuels, processes and materials are accompanied by a growing reputation in automation and digitalisation of manufacturing systems.

See relevant sectors: Automotive (page 26)

Energy

The North East is home to three major ports, excellent access to North Sea oil and gas fields, and offshore wind development sites, supported by an extensive cluster of energy businesses. Thereby, ensuring the region plays a key role in the UK's energy transition is a strong priority of the Combined Authority, building on its strong subsea technologies foundation.

Key climate and energy-related priorities that offer significant opportunities for the North East include reduction of carbon emissions through shifts in energy generation technologies and investment in zero carbon transport. The Smart Grid Lab, bringing together Newcastle Universities, Northern Powergrid and Siemens is helping to advance the transition. Regional businesses such as Nissan, Hyperdrive and Helix are active in the transition to low carbon transport and smart energy systems. The region is also has a large number of testing facilities for testing energy technologies and processes, including the National Renewable Energy Centre with specialisms in wind, wave and tidal energy generation technology.

See relevant sectors: Offshore wind (page 80) and Future mobility (page 84)

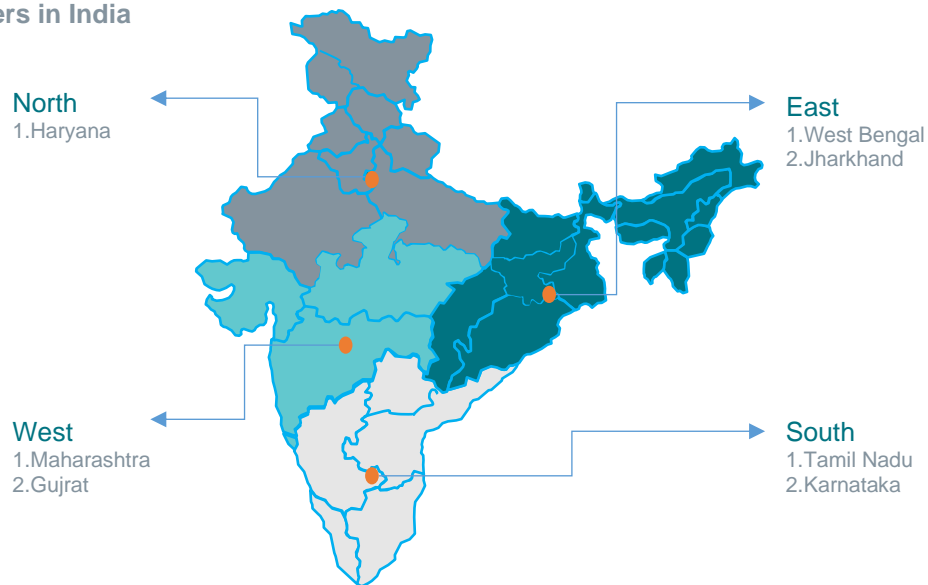
Additional priorities

- Financial, professional and business services
- Transport and logistics
- Construction

B. INDIAN CLUSTERS BY SECTOR

AUTOMOTIVE

Key clusters in India



Market overview, trends, challenges, and opportunities

India was the world's fifth-largest auto market in 2020 and is expected to be the world's third largest by 2026. India is a major vehicle exporter and expects rapid export development in the near future. Several initiatives by the Indian government and major automakers are intended to make India a global leader in the auto sector.

Due to a growing middle class and a young population, two-wheelers dominate the Indian market. A variety of reasons are driving industry developments, including digitization for improved customer experience, vehicle connectivity and telematics, increased interest in electric cars, and the adoption of scrappage policy. In terms of ownership, we are now experiencing a reduced ownership period leading to a rise in the used car market, and more and more we see a rise in the car leasing sector.

Medium-term issues include sustaining demand, consumer affordability, localisation, planning for long-term regulations, computer chip shortages, and new powertrain technologies.

The government has enabled 100% FDI in the industry via the automatic method and is also rapidly upgrading its infrastructure and using international investors' expertise through the National Monetisation Pipeline.

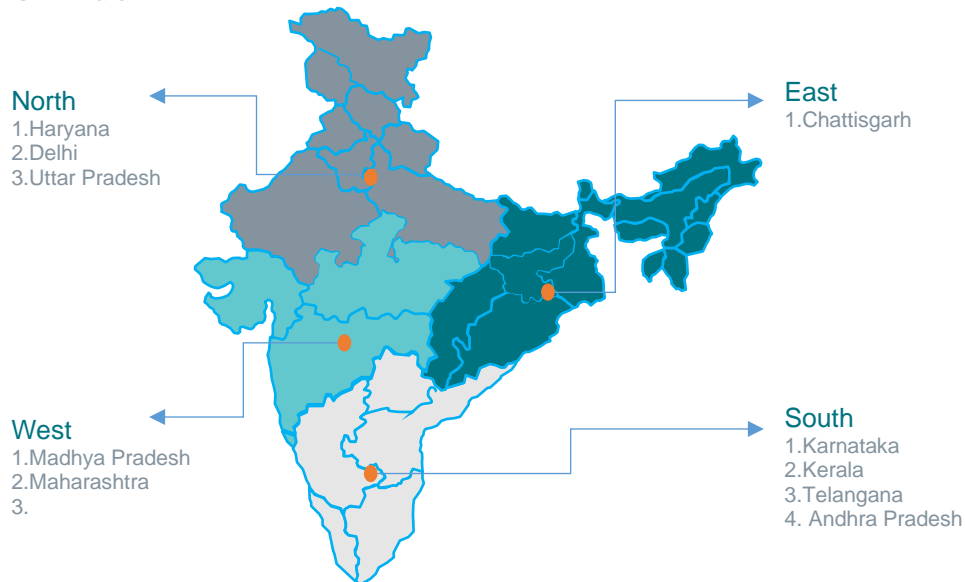
India is a significant market for both imports and exports. The automotive sector benefits from low-cost trained labour, strong R&D centres, and low-cost steel manufacturing. The sector also provides enormous investment and job possibilities for skilled and unskilled workers.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Tata Motors Ltd., Mumbai, Maharashtra	Maruti Suzuki, Japan	Optare (Subsidiary of Ashok Leyland)
Mahindra and Mahindra Ltd., Mumbai, Maharashtra	Yamaha, Japan	Tata Motors-owned Jaguar Land Rover (JLR)
Bajaj Auto Ltd., Pune, Maharashtra	Hyundai Motors, South Korea	Eicher Motors - ROYAL ENFIELD UK LIMITED
Hero Motocorp. Ltd., New Delhi, Delhi	Ford, USA	Mahindra Group - Mahindra's Advanced Design Europe & Mahindra racing UK limited
Ashok Leyland Ltd., Chennai, Tamil Nadu	Volkswagen, Germany	
TVS Motor Company Ltd., Krishnagiri, Tamil Nadu	Volvo, Sweden	
Eicher Motors Ltd., Gurgaon, Haryana	Toyota, Japan	
TV Sundram Iyengar & Sons Pvt Ltd., Madurai, Tamil Nadu	Renault, France	
Automotive Manufacturers Pvt. Ltd., Mumbai, Maharashtra	Honda, Japan	
Force Motors Ltd., Pune, Maharashtra	Kia, South Korea	

AEROSPACE AND DEFENCE

Key clusters in India



Market overview, trends, challenges, and opportunities

India spends 3.7 percent of global military budget, ranking third globally. Defence expenditure accounted for 2.9 percent of India's total GDP in 2020, at GBP 54.7 billion. India is also a big market for commercial and military aircraft. The demand for aircraft and its supply chain is expanding due to increased passenger traffic and military spending. The Indian aerospace and defence industry is predicted to reach GBP 52.5 billion by 2030, driven by improved infrastructure and government initiatives.

Between 2016 and 20 India was the second-largest importer of weaponry, accounting for 9.5% of worldwide imports. Even still, imports plummeted 33% from 2011-2015. Exports of defence products, including significant items, were worth GBP 194 million in 2014-15 and GBP 843.5 million in 2020-21. By 2025, the Government expects to generate GBP 18.75 billion in revenue, including GBP 3.75 billion in aerospace and defence exports. ADCs have been developed in Uttar Pradesh and Tamil Nadu. Defence Corridors will get GBP 2.14 billion in investment through 2024.

To meet rising demand, the Indian government has urged for expanded private sector engagement in defence production. The government has made initiatives to delicense, deregulate, promote exports, and liberalise foreign investment. The Government of India has increased FDI in the defence sector by up to 74% via the Automatic Route and 100% via the Government Route.

The A&D business faces several obstacles. Lack of modernization and capability expansion, financial constraints, lack of strategic planning for future demands, production and time delays, and hierarchical and unbalanced decision-making plague the defence sector.

Aerospace, on the other hand, presents a unique set of issues, with high levels of risk and expense, and a high entrance hurdle. Due to industry consolidation, any new entry faces enormous market pressures.

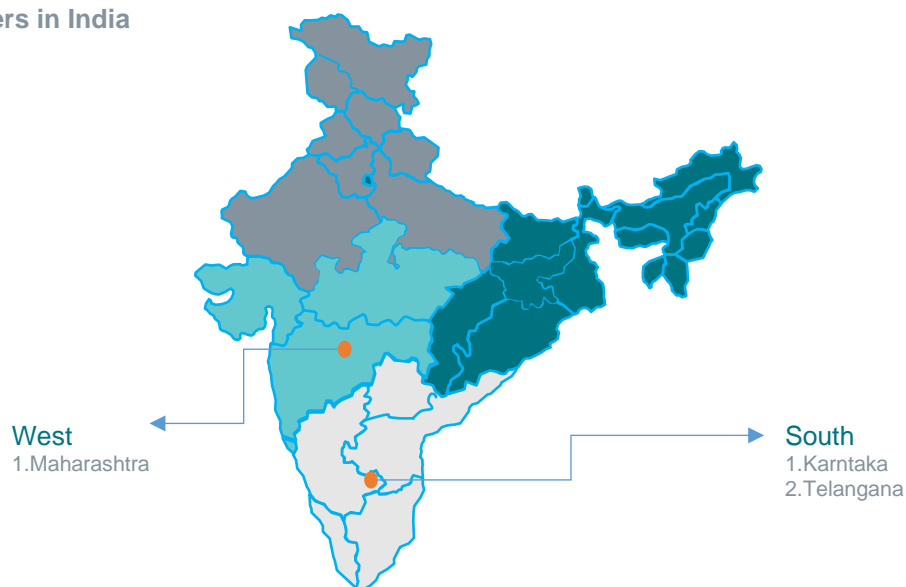
India's attempts to modernise its armed services have raised investment. The budget for 2021-22 boosted defence capital expenditure by 18.75 percent. Meanwhile, the Indian military industry's liberalisation allows foreign OEMs to form strategic collaborations with Indian defence equipment makers. India is a major aerospace market due to its strong demand for aircraft, parts, and equipment, engineering talent, and low labour costs. Also, the civil aviation sector is growing. Private airports and related technological demands provide a tremendous potential in the sector.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Hindustan Aeronautics Ltd., Bangalore, Karnataka	Lockheed Martin Corporation, USA	Tata group
Bharat Electronics Limited, Bangalore, Karnataka	Airbus SE, Netherlands	Bharat Forge - Bharat Forge International (BFIL)
Bharat Dynamics Limited, Hyderabad, Telangana	The Boeing Company, USA	Dynamatic Limited, UK
Eaton Industrial Systems Ltd, Pune, Maharashtra	Raytheon Technologies Corporation, USA	Genser Aerospace & IT Pvt. Ltd -Genser (UK) Ltd
Apollo Micro Systems Limited, Hyderabad, Telangana	General Dynamics Corporation, USA	
Sedemac Mechatronics Pvt Ltd, Mumbai, Maharashtra	Northrop Grumman Corporation, USA	
Zen Technologies Ltd, Hyderabad, Telangana	BAE Systemns Plc, UK	
P3 Consulting Engineering Pvt Ltd., Bangalore, Karnataka	Thales SA, France	
Paras Defence and Space Technology, Navi mumbai, Maharashtra	Safran SA, France	
CAE Simulation Training Pvt Ltd, New Delhi, Delhi	Rolls Royce, UK	

GRAPHENE

Key clusters in India



Market overview, trends, challenges, and opportunities

From 2021 to 2028, the worldwide graphene market is predicted to increase at a CAGR of 43.2 percent, from GBP 70.8 million in 2020 to GBP 70.8 million in 2028. The Indian graphene industry is prospering, due to increased demand for graphene in many industries, and it is expected to expand at a CAGR of 20.1 percent from 2021 to 2027, but at a slower rate than the worldwide market, which is expected to rise at a CAGR of 40.3 percent. Because of driving forces such as, the industry is rising at a rapid pace.

In addition, rising nanomaterials-related research and development activities in India are likely to enhance the Indian graphene market throughout the forecast period. India now has roughly 40 nanotech-focused small and medium enterprises (SMBs), but the number is steadily increasing and there is still much space for development.

Lack of adequate interface with statutory agencies and difficulty setting up production for core product-based initiatives are among the primary hurdles for firms here. Due to its extremely non-flammable property, investment in R&D is still negligible in order to address the high cost of production, technological limits in the manufacture of commercial goods, and health and environmental hazards related with the fabrication of 2D graphene material. Because excellent grade graphene is not consistently and inexpensively available, industry have been sluggish to utilise it.

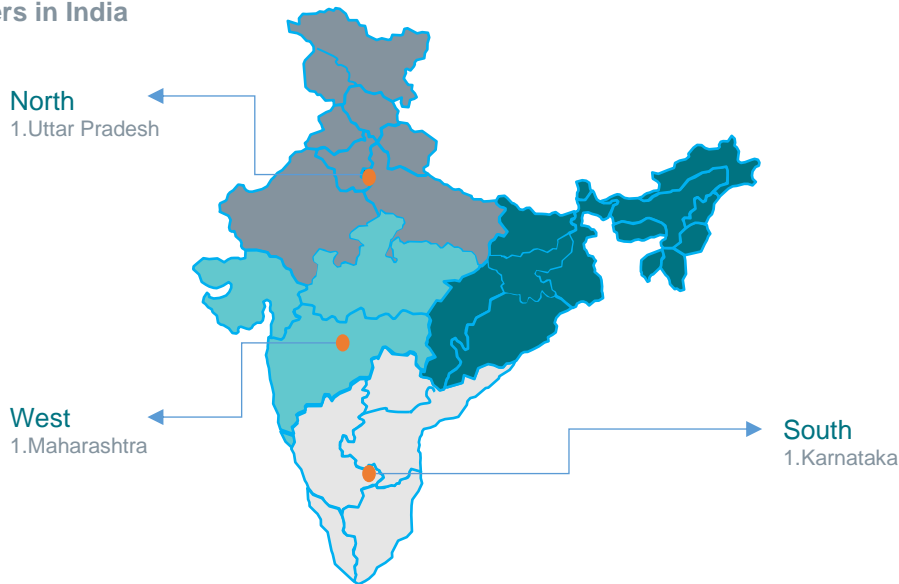
Due to its relatively recent origin, the market is extremely fragmented, with multiple industry participants present, and hence has development potential for new entrants as well. To address the rising demand for various sectors, market participants focus on supplying a diverse selection of goods. They're also spending a lot of money on R&D to expand the scope of their goods.

List of Businesses in the Graphene sector:

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
KNV'S Incorporation, Nagpur, Maharashtra	Tirupati Graphite, UK	
Carborundum Universal (CUMI), Chennai, Tamil Nadu	Global Graphene Group, US	
Hexorp, Mumbai, Maharashtra		
Graphite India, Kolkata, West Bengal		
Ad-Nano Technologies, Machenahalli, Karnataka		
Bottom Up Technologies Corporation (BT Corp), Bangalore, Karnataka		
NanoResearch Elements, Jattan, Haryana		
Nanospan, Hyderabad, Telangana		
Platonic Nanotech, Mahagama, Jharkhand		
Nanomatrix Materials, Jaipur, Rajasthan		

SATELLITE COMMUNICATION

Key clusters in India



Market overview, trends, challenges, and opportunities

Satellite communication (Satcom), and its commercial applications is one of the untapped sectors set for exponential growth in India. SatCom user base in India is estimated to reach nearly 1.5-2 million by 2025, clocking revenue of about GBP 500-600 million per annum.

The strongest inhibitor for growth of private investment in the sector is the rigid regulatory approval process for entry into India's a closed/gated system, with factors like Ka-band uncertainty, long contracting procedures for Ku-band capacity, and delays in service provider licenses added to the mix.

Despite these challenges, private investments worth GBP 30 billion have come in from major satellite broadband companies including Airtel (Oneweb) and Tata (Nelco) in India, and SpaceX (Starlink), Amazon (Project Kuiper) and Hughes. The private investment in this sector has traditionally been low and only now has started to open up.

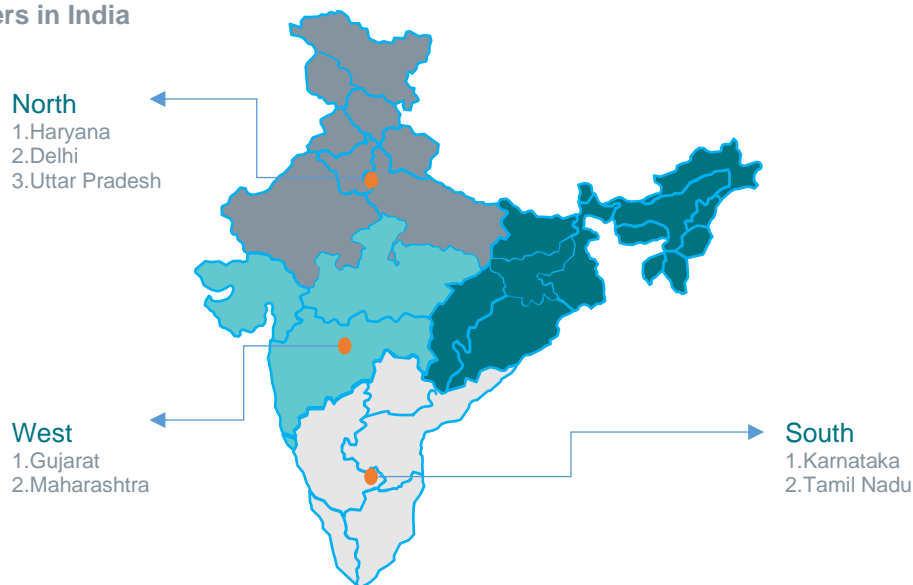
There are huge gaps in India's broadband network, and it is infeasible to connect remote regions of vast expanses of India through terrestrial networks, due to requirement extensive civil work and approvals. It's simpler and quicker (and relatively inexpensive) to connect any location with satellite broadband as satcom requires just ground stations to provide coverage. There is a huge opportunity for private players to plug these gaps, and with Indian economy and government trying to facilitate this via it's SatCom Policy. It is set to be very lucrative space.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Sasken Technologies Ltd, Banaglore, Karnataka	Oneweb, UK	
Nelco Ltd, Mumbai, Maharashtra	Space X, USA	
Antrix Corporation Ltd, Banaglore, Karnataka	Blue Origin, USA	
Infinity Satcom Universal Pvt Ltd., Banaglore, Karnataka	Virgin Galactic, USA	
Planetcast Media Services Ltd, Noida, Uttar Pradesh	Hughes Network Systems, LLC, USA	
India Satcom Ltd, Banaglore, Karnataka	Inmarsat, UK	
Mavis Satcom Ltd, Chennai, Tamil Nadu	Telesat, Canada	
Techno Sat Comm Pvt Ltd., Mumbai, Maharashtra	Amazon (Kuiper Project), USA	
Visual Technologies India Pvt Ltd., Noida, Uttar Pradesh	StarLink, USA	
The Satcom Workers Solutions, Hyderabad, Telangana	Oneweb, UK	

FOOD AND DRINK

Key clusters in India



Market overview, trends, challenges, and opportunities

The Indian food and beverage (F&B) business is presently valued GBP 308 billion and is predicted to grow at a CAGR of 18-20% over the next five years. Changing demographics, changing consumer behaviour, rising disposable income and improved understanding of food safety are all contributing factors. It is presently the world's sixth largest food and beverage sector, with 70% of sales via retail.

In the Food & Grocery retail sector, traditional trading formats like neighbourhood stores still dominate with roughly 98 percent market share. Modern commerce formats including supermarkets and hypermarkets are expected to treble their market share from 2% to 4% by 2023 as customers' demands grow.

Regulatory impediments across the value chain, from licencing and procurement to pricing and distribution, unorganised sector rivalry, and a lack of appropriate cold chain infrastructure are some of the challenges facing the business. Occasionally, products/ingredients that are generally accepted globally may be denied entrance. Also, some foods and drinks, such alcoholic beverages, are subject to import charges of up to 150% CIF.

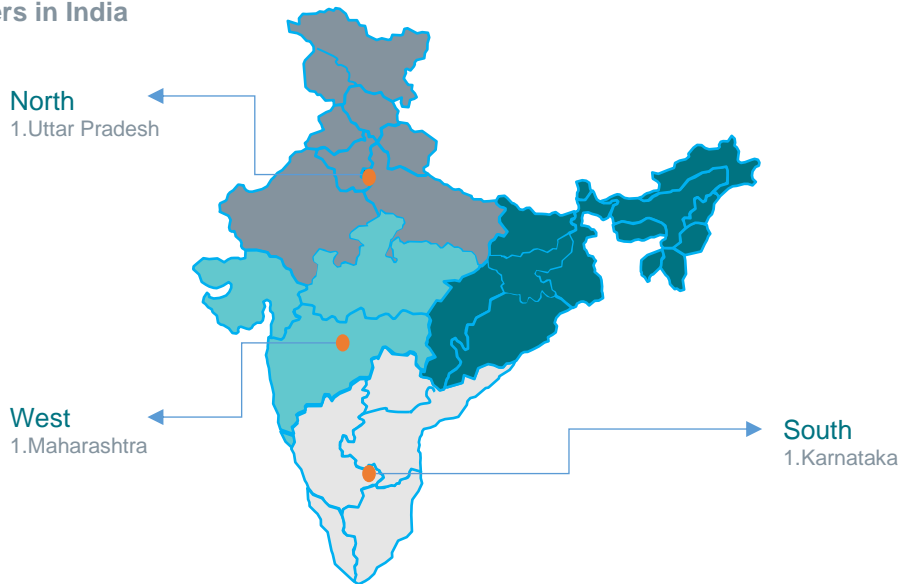
At the same time, India has a large and rapidly developing middle class, rising disposable incomes, and shifting purchasing trends toward higher-value and processed goods. As India's contemporary retail economy expands, so do food manufacturers' needs. India's food processing industry has vast untapped potential. India currently processes 10% of its agricultural output, presenting a huge opportunity to enhance processing and attract investment.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Ruchi Soya Industries Ltd., Indore, Madhya Pradesh	United Spirits Ltd, UK	Haldiram Overseas Ltd.
Britannia Industries Ltd., Bangalore, Karnataka	Shree Renuka Sugars Ltd., Singapore	Dabur UK Ltd.
Mother Dairy Fruits & Vegetables, Noida, Uttar Pradesh	United Breweries Ltd., Netherlands	Tata Consumer Products UK Group Ltd, UK.
Tata Consumer Products Ltd., Mumbai, Maharashtra	Agro Tech Foods Limited, USA	ADF Foods UK Limited
Radico Khaitan Ltd., New Delhi, Delhi	DFM Foods Limited , USA	LT Foods International Limited (UK)
Allied Blenders and Distillers Pvt Ltd, Mumbai, Maharashtra	Tasty Bite Eatables Ltd, USA	
Varun Beverages Ltd., Gurgaon, Haryana	Pioneer Distilleries Ltd, UK	
Bajaj Hindusthan Sugar Ltd., Delhi, Delhi	Pepsico, USA	
Gokul Agro Resources Ltd., Ahmedabad, Gujarat	Nestle , Switzerland	
Hatsun Agro Products Ltd, Chennai, Tamil Nadu	Pernod Ricard, France	

SUSTAINABLE PACKAGING

Key clusters in India



Market overview, trends, challenges, and opportunities

Packaging usage in India has doubled in the last decade, from 4.3 to 8.6 kilograms per person per year. India's growing middle class, quick growth of organised retail, exports, and the emergence of an Indian e-commerce industry all contribute to growth. Simultaneously, governments and consumers are learning about Sustainable Packaging. Also, Indian customers are looking for companies with social and environmental goals. Sustainable packaging options in India include biodegradable, bio-based, and recycled plastic. While penetration remains a concern, increased company adoption of eco-friendly packaging, as shown in the foodservice industry, may help. India is witnessing regulatory or government attempts to curb non-sustainable packaging in India, necessitating firms to plan ahead of time and providing a boost to the sector.

The market for sustainable solutions is very undeveloped as the cost of researching and developing these solutions is high. This has reduced the number of available eco-friendly solutions. These solutions also come with extra expenses that neither the industry nor the client wants to bear. Producers are wary about investing on the packaging that may not sell at the markup price. importing is too costly.

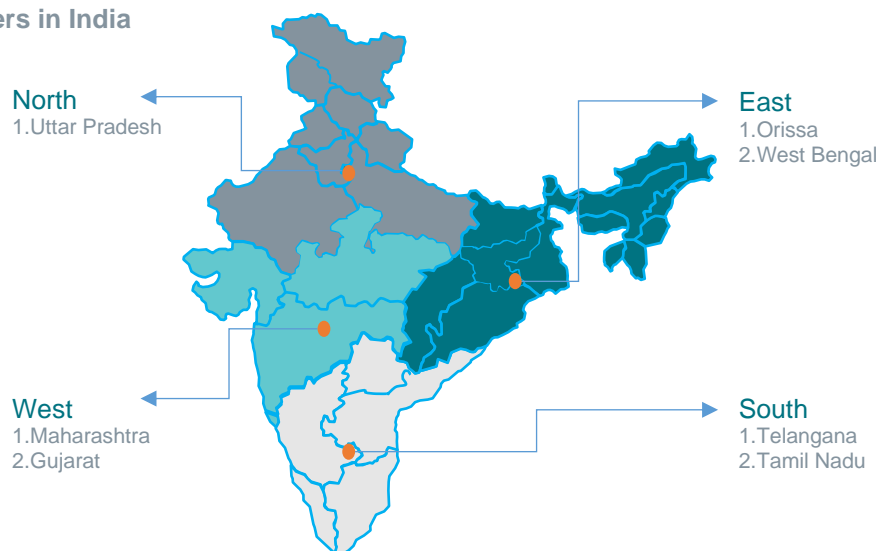
The sustainable packaging sector is expected to grow 4-6 percent by 2024, reaching 770-800 KT. The pharmaceutical, food, and beverage industries are substantially investing in expansion, driving the packaging business. The Indian government has started several programmes to promote eco-friendly packaging. Use of green packaging solutions by end-user sectors, most notably food and beverage, is also contributing to the country's market growth.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Ecoware, New Delhi, New Delhi	Tetra Pak International, Switzerland	None found
TCPL Packaging, Mumbai, Maharashtra	Sealed Air, USA	
Bambrew, Bangalore, Karnataka	Mondi Plc, UK	
Prasanna International, Sivakasi, Tamil Nadu	Amtcor PLC, Switzerland	
Pappco Greenware, Mumbai, Maharashtra	DuPont de Nemours, USA	
Evirocor, Bangalore, Karnataka	Huhtamaki, Finland	
EPL Limited (formerly known as Essel Propack Limited), Mumbai, Maharashtra	WestRock, USA	
Polyplex Corporation, Noida, Uttar Pradesh	Sonoco Products Company as Conitex Sonoco India, USA	
UFlex, Noida, Uttar Pradesh	Ball Corporation, USA	
BOLLANT Industries, Hyderabad, Telangana		

CHEMICALS

Key clusters in India



Market overview, trends, challenges, and opportunities

In 2019, the Indian chemicals sector was worth GBP 133.5 billion and is predicted to grow to GBP 228 billion by 2025. The demand for chemicals is anticipated to grow at a pace of 9% per annum till 2025. The Indian chemical industry is being shaped by global trends, which include a focus on downstream petrochemicals, an embrace of digital transformation possibilities, an emphasis on environmental sustainability as a means of increasing long-term shareholder value, and compliance with government regulations. Additionally, in keeping with the global trend, the Indian business is ready to consolidate through mergers and acquisitions. Additionally, in the near term, the main businesses that fuel the chemical sector's consumption, such as automobiles and construction, have taken a blow, which is projected to reverberate across the industry.

The chemical sector has a variety of challenges, including inadequacy and scarcity of raw resources, low quality of inexpensive imported materials, distant locations and insufficient infrastructure, regulatory and compliance issues, and high tax rates.

India ranks ninth in chemical exports and sixth in chemical imports globally, with a chemical trade imbalance of GBP 11.25 billion. India is attempting to achieve self-sufficiency in petrochemicals in order to meet local demand while expanding exports in key sectors, such as speciality chemicals, in order to capture a bigger portion of global value. Organic And Inorganic Chemicals exports were valued at GBP 1672 billion in August 2021, representing a 35.75 percent increase over August 2020 exports of GBP 1231 billion.

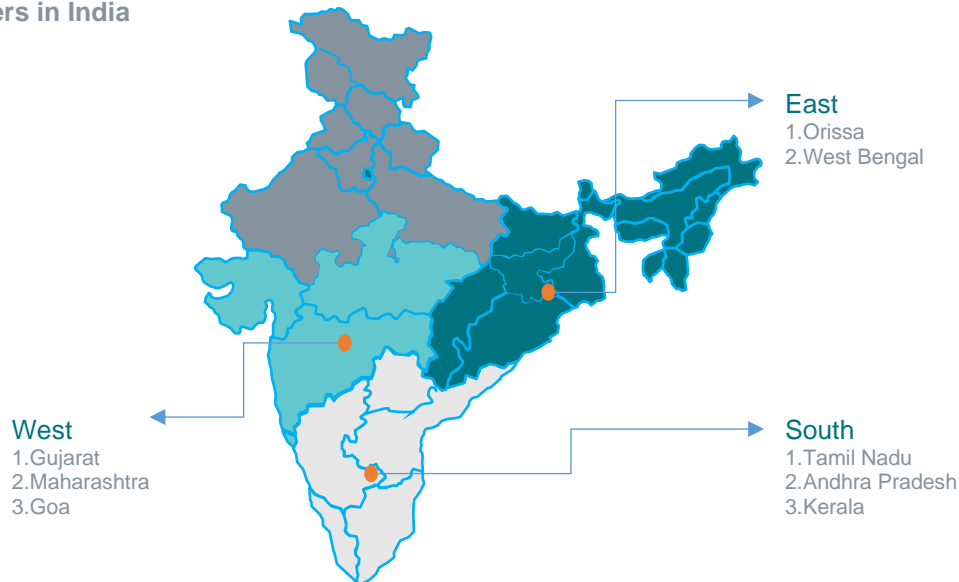
The Indian government has authorised 100 percent FDI in the chemicals sector under the automated approach (except in the case of certain hazardous chemicals). With Asia's expanding contribution to the global chemical industry, India has emerged as a top destination for manufacturing hubs for the world's leading chemical businesses. The growing need for polymers, biodegradable chemicals, and other high-value-added chemical products has created significant development opportunities for India's chemicals sector.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
UPL Ltd., Mumbai, Maharashtra	BASF, Germany	Alchemie (Europe) Limited
Asian Paints Ltd, Mumbai, Maharashtra	Kansai Nerolac Paints, Japan	Tata Chemicals Europe
EID-Parry (India) Ltd, Chennai, Tamil Nadu	Castrol, UK	UPL Europe Ltd
Coromandel International Ltd., Secunderabad, Telangana	Sumitomo Chemicals, Japan	Vivimed Speciality Chemicals UK Ltd
National Fertilizers Ltd., Noida, Uttar Pradesh	Akzo Nobel, Netherlands	
Chambal Fertilizers and Chemicals, New Delhi, Delhi	Linde, UK	
Rain Industries Ltd, Hyderabad, Telangana	INEOS Stryrolution, Isle of Man	
Tata Chemicals Ltd., Mumbai, Maharashtra	DIC Limited, Japan	
Haldia Petrochemicals Ltd., Haldia, West Bengal	Kingfa Science & Technology, China	
Rashtriya Chemicals and Fertilizers, Mumbai, Maharashtra	Rama Phosphates , Mauritius	

SHIPBUILDING

Key clusters in India



Market overview, trends, challenges, and opportunities

The global shipbuilding and ship repair market estimated to be GBP 68 billion, dominated by China, along with Japan and South Korea. India contributes less than 1% in the overall capacity currently. India's shipyards thrived on export orders in past, but now the actual tonnage produced in India has gone down from 300,000 GT in the 2000s to just 27,000 GT in 2020. There are 35+ shipyards currently in India with 20+ operational. India has set itself an ambitious target of increasing its output to 500,000 GT by 2030.

The Government of India awarded the Shipbuilding industry with infrastructure status, paving way for cheaper loans, relaxed codes, and further benefits in 2016, and has come up with a slew of policies in 2020 itself with a focus on the industry. Shipbuilding in India is poised to double its size to Rs 20,000 crore (GBP 2 billion) by 2022. India is banking on its Atmanirbhar Bharat PPP provisions and Right of First Refusal (RoFR) rules and plans to introduce a staggered increase in customs duty on small vessel import to promote the Shipbuilding sector. India has also attracted FDIs worth more than GBP 52.5 billion for the industry over the last decade.

India is presently facing tough global competition with protectionist measures like cabotage from the leaders in the sectors. Domestically, the industry has had a lack of subsidies, tax benefits and the government has failed to ensure a level playing field by giving orders to public sector shipyards by nomination. Also, ancillary industries of Shipbuilding are absent in India, which puts further barriers on private shipyards.

India's strategic location along the world's busiest maritime route in the Indian Ocean demonstrates the vital role of its shipping sector, which supports 95 percent of India's foreign commerce in terms of volume. Growth of India's maritime sector is its primary goal, with the nation seeking GBP 60.75 billion in investment. India authorises up to 100 percent FDI in port and harbour building projects using the

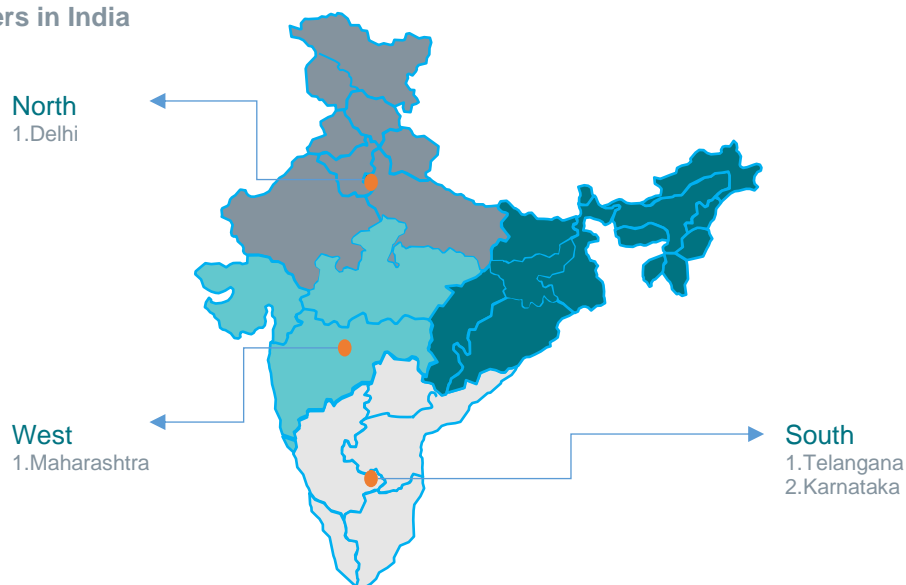
automated method. Additionally, the Ministry of Ports, Shipping, and Waterways is updating the model concession agreement (MCA) to increase its flexibility and attractiveness to private investors.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Mazagon Dock Shipbuilders Ltd., Mumbai, Maharashtra	Colombo Dockyard Plc, Japan	
Cochin Shipyard Ltd., Kochi, Kerala	Ananda Shipyard & Slipways Ltd., Bangladesh	
Titagarh Wagons Limited, Kolkata, West Bengal	Solas Marine Lanka (Pvt) Ltd, Sri Lanka	
Garden Reach Shipbuilders & Kolkata, West Bengal	Western Marine Shipyard Limited, Bangladesh	
Bharati Defence & Infrastructure, Mumbai, Maharashtra		
Dempo Shipbuilding & Engineering Private Limited, Panaji, Goa		
L&T Shipbuilding Ltd, Chennai, Tamil Nadu		
Reliance Naval and Engineering, Navi Mumbai, Maharashtra		
Hindustan Shipyard Ltd, Vishakhapatnam, Andhra Pradesh		
Alcock Ashdown Ltd., Gujarat		

GENOMICS

Key clusters in India



Market overview, trends, challenges, and opportunities

Genomics is a relatively new domain; it has been just 10 years since it has come into existence commercially and is still at a very nascent stage in the Indian market with an estimated size of around GBP 50 million. The worldwide genomics sector is likely to develop at roughly 18% over the next decade, with India playing a big role.

In India, genomics is mostly used for diagnosis. Genomics allows for the mapping of personal health data, which may be used to identify and treat diseases like diabetes and obesity. The healthcare business is increasingly embracing genomics. The pandemic has also increased the sector's importance. To considerably increase genomic monitoring in India, the government planned to include private sector facilities in genome sequencing.

The industry's main difficulty is finance and resource allocation. The healthcare business is increasingly turning to genomics, yet few people are aware of the huge potential this field holds. Also, because India is a price-sensitive market, existing solutions are still on the expensive side and hence only used for specialised applications.

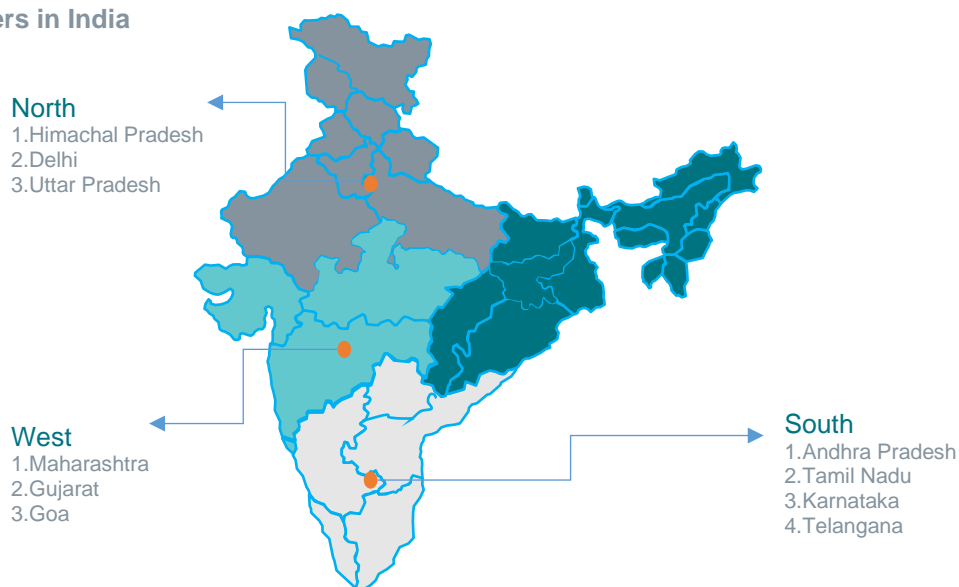
India's demographic diversity needs precision medicine, which genomics enables. Precision medicine's effectiveness depends on access to genetic and molecular data. India might possibly provide massive amounts of data essential for this field's progress. With a focus on Precision Health, Rare Genetic Disorders, Mutation Spectrum of Genetic and Complex Ailments in the Indian Population, Genetic Epidemiology of Lifestyle Diseases, and Translational Research, the Department of Biotechnology (DBT) has already launched the Genome India Project (GIP) in 2020.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Genotypic Technology Pvt. Ltd, Bangalore, Karnataka	4baseCare, Singapore	
Mahajan Imaging (Caringdx), New Delhi, New Delhi	Bio-Rad Laboratories, USA	
Mapmygenome, Hyderabad, Telangana	Eagle Genomics, UK	
NMC Genetics India, Gurgaon, Haryana	Eurofins Genomics, US (part of Luxembourg based Eurofins Scientific Group)	
Premas Life Sciences Pvt. Ltd., Delhi, New Delhi	MedGenome, USA	
Redcliffe Lifesciences (now Lifetech) Pvt Ltd, Noida, Uttar Pradesh	Natera, Inc, USA	
Sayre Therapeutics Pvt Ltd, Bangalore, Karnataka	Partek Inc., USA	
SciGenom Labs Pvt. Ltd., Cochin, Kerala	Perkin Elmer, IncVela Diagnostics, USA	
Strand Life Sciences, Bangalore, Karnataka	Quest Diagnostics, USA	
Xcelris Labs Ltd. , Ahmedabad, Gujarat	Tecan Trading AG, Switzerland	

PHARMACEUTICALS

Key clusters in India



Market overview, trends, challenges, and opportunities

India has a major and swiftly expanding footprint in the global pharmaceuticals industry. The Indian pharmaceutical industry is presently valued at GBP 31.6 billion and is projected to touch GBP 49 billion by 2024 and GBP 90 billion by 2030. Globally, India's output ranks 14th by value and 3rd by volume. The exports for the sector stood at GBP 18.33 billion in FY21. The Indian drugs and pharmaceuticals sector, between April 2021 and June 2021, attracted foreign direct investment (FDI) inflows worth GBP 97.5 million.

Domestically, drug prices are regulated by the drug price control order; thus, impacting revenues and costs. There is a dearth of research and innovation in the sector, as the focus of the market is generics. And with intense United States Food and Drug Administration (USFDA) scrutiny, quality compliance and risk are a source of concern for the Indian pharma industry. The over-reliance on China for the APIs (Active Pharmaceutical Ingredient) and critical equipment is also a major challenge.

India's Department of Pharmaceuticals intends to develop India as a key hub for end-to-end drug innovation, as outlined by 'Pharma Vision 2020'. The government, however, must work on the sustainability and development of the industry to achieve its vision.

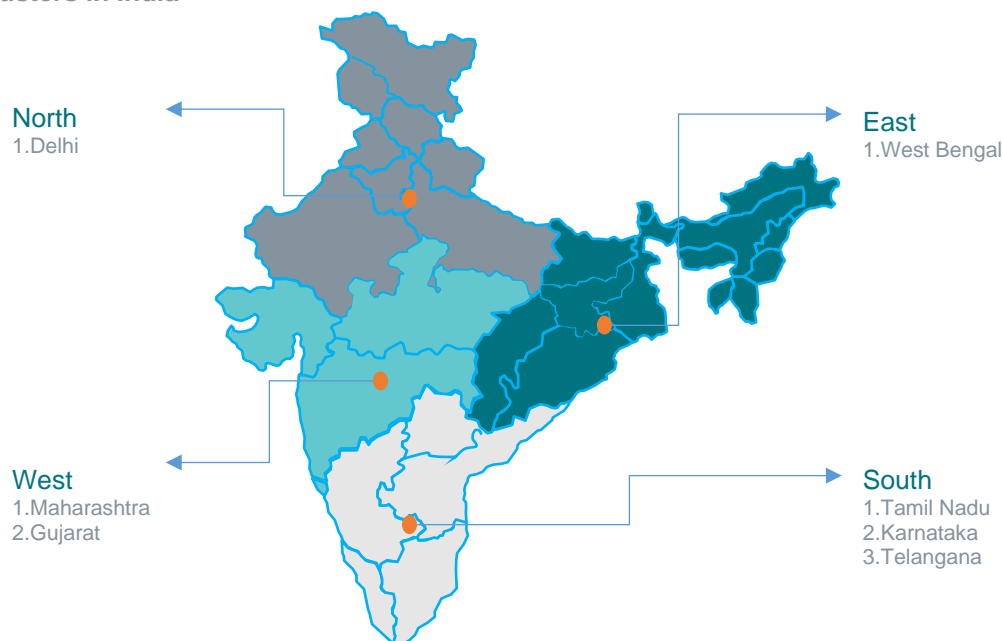
The Indian Pharmaceutical sector provides several benefits for its investors, like cost-effectiveness, a skilled workforce, and a large untapped domestic market. India is an attractive destination for contract research and manufacturing organisations.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Sun Pharmaceuticals, Mumbai, Maharashtra	AstraZeneca, UK	Aurobindo Pharma as Milpharm Ltd
Aurobindo Pharma Ltd, Hyderabad, Telangana	GlaxoSmithKline, UK	Cadila (Europe)
Dr. Reddys Laboratories Ltd., Hyderabad, Telangana	Johnson & Johnson, USA	Cipla
Cipla Ltd, Mumbai, Maharashtra	Novartis, Switzerland	Dr. Reddy's Laboratories
Lupin Ltd, Mumbai, Maharashtra	Pfizer, USA	Glenmark Pharmaceuticals as Glenmark Generics (Europe) Ltd
Cadila Healthcare Ltd, Ahmedabad, Gujarat	Teva Pharmaceuticals, Israel	Lupin Healthcare
Glenmark Pharmaceuticals Ltd, Mumbai, Maharashtra	Sanofi, France	Sun Pharma as Ranbaxy UK
Alkem Laboratories Ltd., Mumbai, Maharashtra	Abbott, USA	Torrent Pharma
Torrent Pharmaceuticals Ltd., Ahmedabad, Gujarat	Viartis (MyLan Laboratories), USA	Wockhardt
Jubilant Pharmova, UP, Noida	Gland Pharma, China	

DIAGNOSTICS

Key clusters in India



Market overview, trends, challenges, and opportunities

The diagnostic industry is among the service verticals that are rapidly expanding in India. The Indian diagnostic sector is valued at GBP 7.13 billion, and it is predicted to grow at ~11% CAGR over the next five years. The industry, a highly fragmented one, is mainly volume oriented. The sector is, with the expansion of national players and emergence of online aggregators, now starting to see consolidation exercises, brand building initiatives being undertaken.

The industry still remains largely fragmented due to the absence of any significant entry barrier with a large number of local players in the fray as diversity in demographics, disease profiles, and healthcare systems pose significant challenges to consolidation. To add to that, with continuously advancing technology the players also have a recurring CAPEX to attend to.

The industry also faces issues of accessibility to clean water, shortage of skilled talent, and tech infrastructure along with connectivity issues, essential for the labs to better their services and grow their footprint.

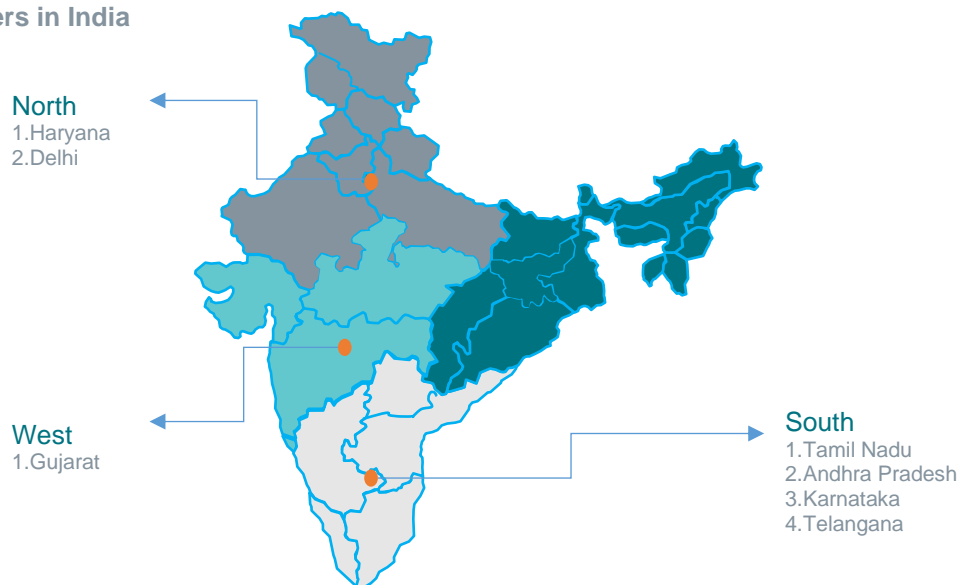
Increased healthcare expenditure and life expectancy, rising income, increasing lifestyle-related diseases coupled with growing awareness for preventive testing provide for very bright prospects for the sector. At the same time, the industry is highly under-penetrated and presents a great opportunity for consolidation and organic growth, especially in Tier II and Tier III cities, which are largely untapped.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Aarthi Scans and Labs, Tirunelveli, Tamil Nadu	Abbott Laboratories, USA	
Dr Lal PathLabs (DLPL), Gurgaon, Haryana	bioMérieux, France	
Medall, Chennai, Tamil Nadu	Danaher Corporation, USA	
Metropolis Healthcare (METROHL), Mumbai, Maharashtra	GE Healthcare, USA	
Spandan Pathology Laboratory, Ahmedabad, Gujarat	MedGenome, USA	
SRL Diagnostics (SRL), Gurgaon, Haryana	Philips Healthcare, Netherlands	
Suburban Diagnostics Centre, Mumbai, Maharashtra	Quest Diagnostics, USA	
Suraksha Diagnostics, Kolkata, West Bengal	Roche Diagnostics, Switzerland	
Thyrocare Technologies, Navi Mumbai, Maharashtra	Siemens, Germany	
Vijaya Diagnostic Centre, Hyderabad, Telangana	Thermo Fisher Scientific, USA	

MEDICAL DEVICES

Key clusters in India



Market overview, trends, challenges, and opportunities

India is amongst the major markets for medical devices worldwide, with a market size of GBP 7.77 billion in 2020; expected to grow at a 37% CAGR to GBP 37.5 billion in 2025. The medical devices industry in India consists of large multinationals and small and mid-sized companies.

The industry is witnessing a slew of changes with the advent of Big Data analytics, also wearable devices due to their ease of use and affordability have gained a strong foothold. With rising investments in healthcare, robotic surgeries are becoming the norm slowly. India is in the middle of its start-up boom, and medical devices have seen significant interest from investors.

India, with emphasis on research and development (R&D), has initiated several initiatives to bolster the medical devices sector including the provision of 100% FDI through the automatic route. Between April 2000 and June 2021, the sector saw inflows worth GBP 1.67 billion. New medical technology parks, in addition to the existing ones, have been planned by the Government of India to promote the domestic production of medical devices.

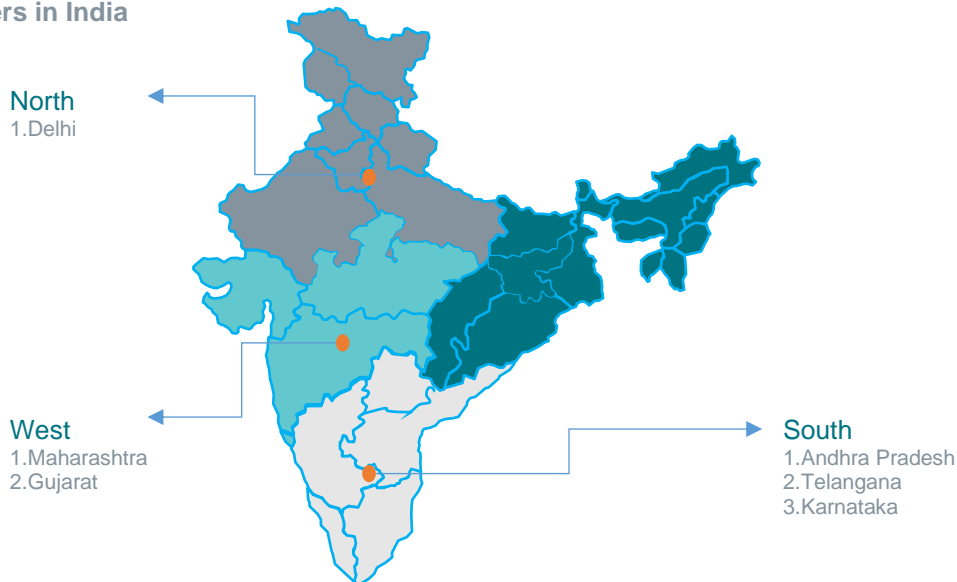
Low Penetration remains the biggest challenge to the sector, mainly due to issues with accessibility, affordability, and awareness. The industry also suffers from low domestic manufacturing, inadequate quality benchmarking. From the policy perspective, the industry still has no distinct status and is marred by complex rules and guidelines. In addition, the sector in itself is quite capital intensive. Despite these challenges, there is a substantial incentive for manufacturing in India owing to the vast disparity in the demand and supply of medical devices in India.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Wipro GE Healthcare Pvt Ltd, Bangalore, Karnataka	Bayer AG, Germany	Biocon Pharma UK
Poly Medicure Limited, Faridabad, Haryana	Boston Scientific, USA	Opto Circuits (Eurocor)
Healthium Medtech Ltd, Bangalore, Karnataka	Danaher Corporation, USA	Hindustan Syringes and Medical Devices (HMD)
Sterling Addlife India Ltd, Ahmedabad, Gujarat	GE Healthcare, USA	Vascular Concepts
Nipro India Corp Pvt Ltd., Satara, Maharashtra	Johnson & Johnson, USA	
Maquet Medical India Pvt Ltd., Mumbai, Maharashtra	Nipro Corporation, Japan	
DHR Holding India Pvt Ltd., Mumbai, Maharashtra	Philips Healthcare, Netherlands	
Medico Electrodes International, Noida, Uttar Pradesh	Roche, Switzerland	
Blue Star Engineering & Electronics, Mumbai, Maharashtra	Siemens, Germany	
Opto Circuits (India) Ltd., Bangalore, Karnataka	Smith & Nephew, UK	

DIGITAL HEALTHCARE

Key clusters in India



Market overview, trends, challenges, and opportunities

The Indian digital health market is expected to grow at a 39 percent compounded annual growth rate (CAGR) over FY2020-FY2023 and is expected to reach GBP 37.5 billion by 2033. The market is segmented into telehealth, mHealth, electronic health/medical records, remote diagnostics, and healthcare analytics.

By 2024, mHealth will have a 40% market share, followed by telemedicine. In 2020–25, the Indian telemedicine industry is predicted to increase by 31%, reaching GBP 4.13 billion. Emerging technologies including AI, machine learning, Blockchain, IoT, IoMT, and Big Data analytics are shaping the digital healthcare business and by 2021, AI applications in healthcare were expected to reach GBP 4.5 billion.

The government has also drafted a National Digital Health Blueprint (NDHB) to move towards integrated digital services. The National Digital Health Board (NDHB) launched the National Digital Health Mission (NDHM) to facilitate the integration of digital health infrastructure across the country. The government has also issued Telemedicine Practice Guidelines and plans to implement National Health Stack for all residents (NHS). In India, 76 percent of healthcare workers currently use Digital Health Records.

To boost India's new digital health infrastructure, a higher focus on AI, robots, and big data tools and analytics is envisaged. These are topics that may help huge businesses establish consumer-centric business strategies.

The absence of digitised information of patients hampers the adoption. Issues like inferior technology infrastructure and lack of clear regulations pose challenges to the digital healthcare market. In addition, the high cost of client acquisition, combined with a complex and multi-layered environment, makes value proposition problematic. Physical infrastructure and cold chain logistic facilities are costly and

barely present in rural areas. Remote patient monitors and devices are susceptible to breaches, and therefore, impact patient-provider privacy. Digital Healthcare being at a nascent stage lacks integration and standardisation, resulting in inconsistencies in patients' medical results.

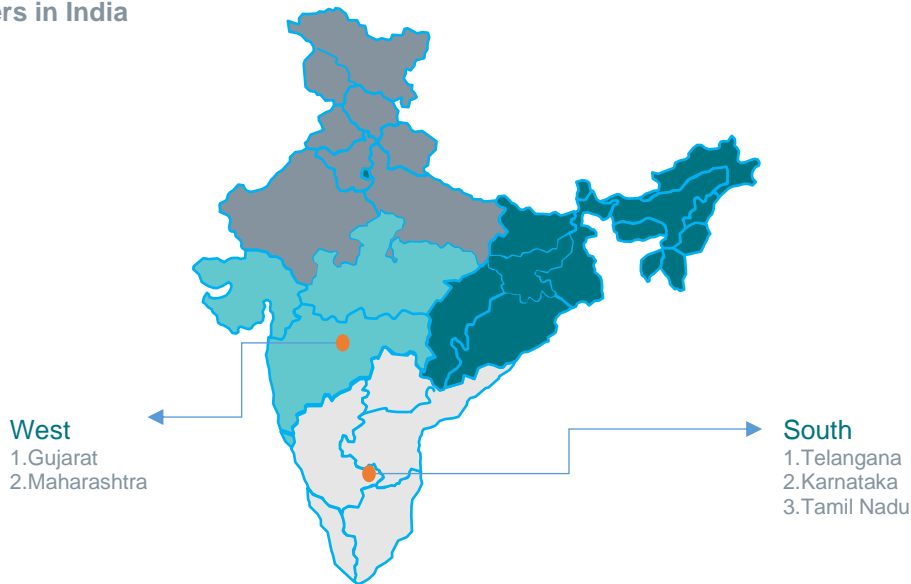
The worldwide digital health industry is predicted to boom in the next years, both in terms of demand and supply. Making a technology-enabled healthcare ecosystem the backbone would help India overcome several issues. IoT in healthcare will assist solve problems including intelligent patient monitoring, supply chain issues, clinical inefficiencies, claim settlements and patient safety. With an estimated 442 million smartphone users in India in the next two years, efficient use of digital technology may improve health care, meet health issues, and offer access to m-health services. While early signals of success have been seen, start-ups must now scale up their ideas and demonstrate the relevance of digital solutions in the healthcare ecosystem. A stronger push toward scaling up digital activities in the healthcare sector would necessitate more financing in the start-up ecosystem.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Bigtec Labs, Bangalore, Karnataka	3M Co., USA	Transasia Bio-Medicals as Erba Corporate Services
Perfint Healthcare, Chennai, Tamil Nadu	Abbott Vascular, USA	
Skaray Technologies, Mysore, Karnataka	BD (Becton, Dickinson and Company), USA	
Transasia Bio-Medicals, Mumbai, Maharashtra	Boston Scientific, USA	
Triviron Healthcare, Chennai, Tamil Nadu	GE Healthcare, USA	
Practo Technologies Pvt Ltd, Bangalore, Karnataka	Johnson & Johnson, USA	
DocEngage Informatics Pvt. Ltd., Bangalore, Karnataka	Optum, USA	
Gem3s Technologies Pvt. Ltd., Chennai, Tamil Nadu	Philips Healthcare, Netherlands	
NovoCura Tech Health Services Pvt. Ltd. (mfine), Bangalore, Karnataka	Roche Diagnostics, Switzerland	
Lybrate India Pvt. Ltd, New Delhi, New Delhi	Siemens Healthcare Pvt. Ltd., Germany	

CLINICAL RESEARCH

Key clusters in India



Market overview, trends, challenges, and opportunities

Indian clinical research market volume with a CAGR of 8.7% is projected to touch GBP 2.36 billion by 2025. In 2020, India was one of the most favoured places for clinical trials, accounting for 8.3 percent of global clinical trial activity. Indian CLROs have an established reputation of delivering superlative quality data to its customers in toxicology.

The recent trends seen in the sector can be attributed majorly to the pandemic and simultaneous technological advances. SARS-CoV-2 has resulted in huge prospects of clinical research in the market. At the same time, the clinical trials have suffered disruption owing to the Covid-19 outbreak. With introduction of the latest technology in the sector we are looking at more efficient mechanism to collect, structure and analyse the data. The remote mode of conducting trials is also seeing a sudden uptick and also, with commercialization of genomics and personalized medicine, targeted trials are set to evolve and attain greater importance.

The industry is still saddled with challenges mainly pertaining to the multiplicity of authorities and absence of harmonisation across regulations as well as with global regulatory standards, and the absence of any mechanism of fraud prevention. To add to that there is growing competition from low-cost nations such as Vietnam and Indonesia.

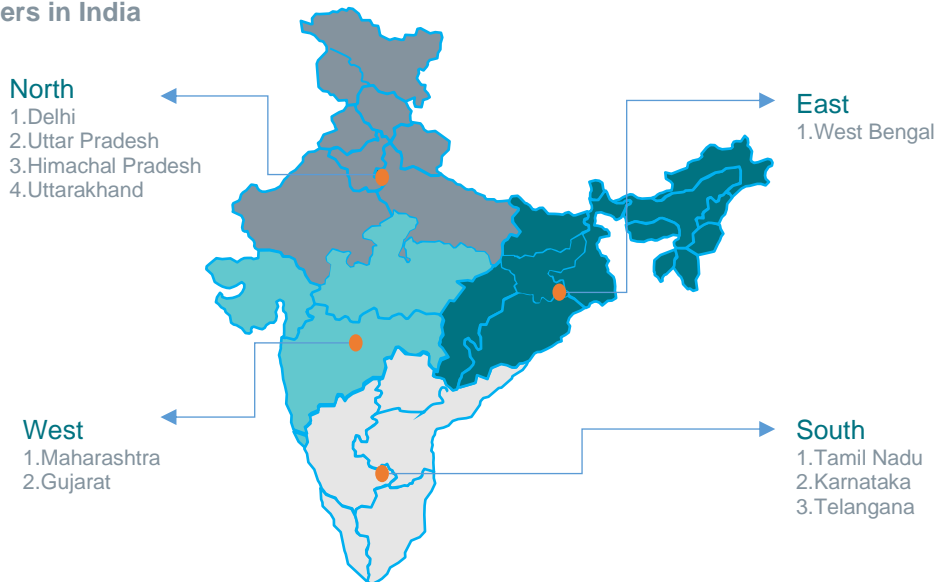
The government has facilitated the growth of this market by exempting the clinical trial supplies from import duty and registration requirements. Also, there is an exemption from service tax on new drug testing. The inherent cost-benefit and substantial heterogeneous patient pool, coupled with swiftly transforming healthcare market and quality scientific capability make India an attractive destination for clinical and preclinical research outsourcing.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Veeda Clinical Research (and Bioneds), Ahmedabad, Gujarat	Bristol Myers Squibb, USA	CliniRx Research
Cliantha Research, Ahmedabad, Gujarat	Eli Lilly & Company, USA	Dr. Reddy's Laboratories
Accutest Research Laboratories Pvt Ltd, Mumbai, Maharashtra	GlaxoSmithKline, UK	Manipal Acunova
Aizant Drug Research Solutions, Hyderabad, Telangana	ICON, Ireland	
Sitec Labs, Mumbai, Maharashtra	INC Research, USA	
Azidus Laboratories, Chennai, Tamil Nadu	Novartis, Switzerland	
Raptim Research Pvt Ltd., Mumbai, Maharashtra	Novo Nordisk, Denmark	
Lambda Therapeutic Research Ltd., Ahmedabad, Gujarat	Parexel International, USA	
Vimta Labs, Hyderabad, Telangana	Pfizer, USA	
Lotus Labs, Bangalore, Karnataka	Sanofi Aventis, France	

BIOTECHNOLOGY

Key clusters in India



Market overview, trends, challenges, and opportunities

India's biotechnology sector is innovative and growing rapidly. India is the third largest biotechnology destination in the Asia-Pacific region, ranking 12th globally. From 3% in 2017, the Indian biotechnology industry's share of the global biotechnology market is predicted to expand to 19% by 2025. The Indian biotechnology sector is expected to be worth GBP 112.5 billion by 2025.

A source of worry, however, is the lack of consistent biotechnology rules and investment pathways, with several bodies monitoring varied standards. Another key worry is the lack of effective GLP (Good Laboratory Practice) compliance enforcement. Only a few laboratories and research institutes strictly adhere to the rules. India continues to struggle with a lack of venture capital investment in the sector, which is a big concern. In addition, the modest size of most Indian enterprises, as well as the lack of a clear exit strategy, dampens venture capitalists' excitement for this industry.

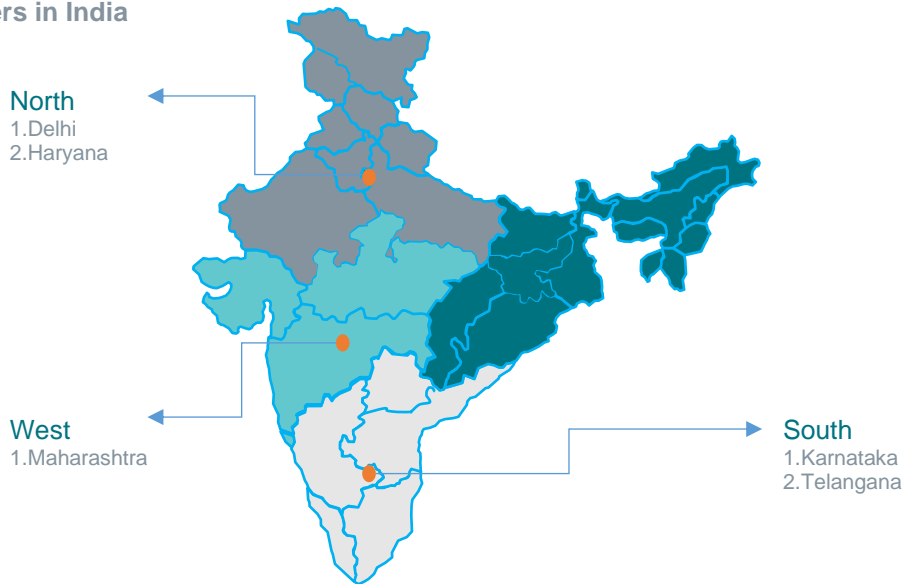
India is seen as an ideal destination among emerging markets, with plenty of opportunities to be capitalised on without sacrificing quality. Furthermore, India has the best-in-class medical personnel and a population prepared to pay for the most cutting-edge foreign-made technology and technologically sophisticated gadgets, such as cancer diagnostics, medical imaging, ultrasonic scanning, and other technologically advanced devices. The inherent advantages in India, combined with rising public interest in the sector, increasing investments from global firms and traditional businesses, and favourable government regulations, are likely to enable India to achieve its goal of a GBP 112.5 billion biotech industry by 2025.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Biocon Ltd, Bangalore, Karnataka	Amgen, USA	Biocon
Panacea Biotech Ltd, New Delhi, New Delhi	AstraZeneca, UK	Dr. Reddy's Laboratories
Hester Biosciences Ltd, Ahmedabad, Gujarat	Bayer, Germany	Jubilant
Bharat Immunologicals and Biologicals Corporation Ltd, Bulandshahar, Uttar Pradesh	Bristol Myers Squibb, USA	Panacea Biotec
Zenotech Laboratories Ltd, Hyderabad, Telangana	Gilead Sciences, USA	Serum Institute of India (planned to expand its vaccine business and set up a new sales office in UK as of May 2021)
Hindustan Bio Sciences Ltd, Hyderabad, Telangana	GlaxoSmithKline, UK	Wockhardt
Transgene Biotek Ltd, Medak, Telangana	Novo Nordisk, Denmark	
Equipp Social Impact Technologies Ltd, Hyderabad, Telangana	Novozymes South Asia, Denmark	
Bharat Biotech, Hyderabad, Telangana	Pfizer, USA	
Jubilant Biosys / Jubilant Life Sciences, Noida, Uttar Pradesh	Sanofi, France	

ARTIFICIAL INTELLIGENCE

Key clusters in India



Market overview, trends, challenges, and opportunities

AI as a function has pervaded almost all industries and functions – from eCommerce to BFSI and are increasingly utilised to solve complex business challenges. India’s Artificial Intelligence (AI) market is anticipated to touch GBP 5.85 billion by 2025 at a CAGR of 20.2%.

Demand for AI-integrated systems is increasing across India at the moment, owing to increased digitalization in a variety of industries, including banking, financial services, and insurance (BFSI), telecommunications, healthcare, and automotive. Additionally, the thriving information and technology (IT) industry, along with the growing usage of cloud-based applications, is propelling the demand of these systems. Additionally, benefits offered by AI-integrated systems including, analysis of large amounts of data, consumer experience across several industries, and extraction of insights regarding overall operational efficacy, is strengthening the market growth.

With market shares of 35% and 23.3 percent, respectively, the IT Services industry has the highest market size, followed by the Technology sector (which comprises software and hardware firms). Apart from the IT and technology industries, 9.6 percent of the market for AI services is accounted for by the BFSI industry.

In 2020, Indian AI start-ups raised GBP 627.23 million, the largest funding outlay during the last seven years. During the same year, Indian government increased the outlay for Digital India to GBP 238.5 million to boost AI, IoT, big data, cybersecurity, machine learning and robotics.

The industry faces major challenges on the policy front, as there is a lack of clarity of rules and regulations, and the issues of integrity and ethics with AI and ML solutions are hampering the market growth of AI in India. Apart from these, the issues of data collection without proper consent, the privacy of personal data, inherent selection bias, risk of profiling and discrimination, and non-transparent nature of certain AI solutions, Data trustworthiness, and difficulty in choosing the correct algorithm are among of the top challenges that hold organisations back from implementing AI technology.

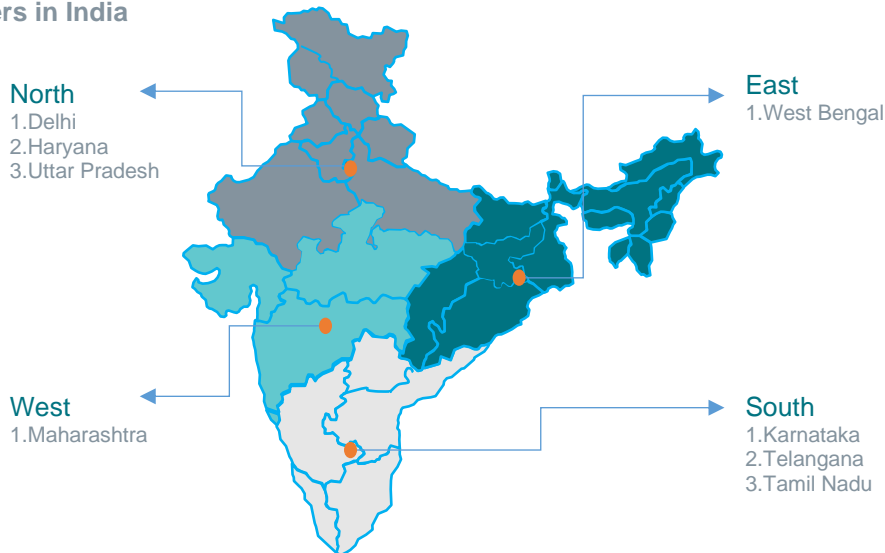
The government has recently approved an investment of GBP 700 million in the country's AI program, which could increase AI investments at rates higher than the business-as-usual rates. This increase in investment will lead to an estimated 1.3 factor surge in AI intensity. India is already among the top 10 nations in the world when it comes to technological advancement and financial support in artificial intelligence (AI). The top 50 AI cities as measured by the TIDE framework include 4 Indian cities with Bengaluru at #5; TIDE stands for the Talent pool, Investments, and Diversity of talent. India has a booming landscape of various sectors transitioning to industry 4.0 and harnessing AI tech to advance their capabilities. India, with its rapid rise in the field, presents a huge opportunity for scaling the business and investment in the sector.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Coforge (formerly known as NIIT Technologies), Noida, Uttar Pradesh	Affle, Singapore	Talentica Software
Cyient, Hyderabad, Telangana	Bosch, Germany	
Happiest Minds Technologies, Bangalore, Karnataka	ContractPodAi, UK	
Kellton Tech, Hyderabad, Telangana	IBM, USA	
Persistent Systems, Pune, Maharashtra	Microsoft, USA	
Saksoft, Chennai, Tamil Nadu	Onfido, UK	
Talentica Software, Pune, Maharashtra	Oracle, USA	
Tata Elxsi, Bangalore, Karnataka	Peak.ai, UK	
Zensar Technologies, Pune, Maharashtra	Third Eye Data, USA	

DATA ANALYTICS

Key clusters in India



Market overview, trends, challenges, and opportunities

India is becoming a hotspot for analytics. The country's analytics market is estimated to touch GBP 12 billion by 2025, commanding 32% of the worldwide analytics market. This demonstrates the enormous potential for Big Data analytics in India. Currently, about 60% of analytics revenue in India originates from exports to the United States. Domestic income is barely 4% of total analytics revenue in the country.

With roughly GBP 567 million in revenue, the finance and banking industry accounts for nearly 37% of the gross analytics market size, making it the top revenue-generating sector. Marketing and advertising come in second place with 26%, followed by e-commerce with roughly 15%.

India has been exporting solutions to less developed countries such as Bangladesh as a result of relatively economical Big Data services. The expansion of Big Data technologies may also be ascribed to upcoming technologies such as Blockchain, the Internet of Things, artificial intelligence, and cloud computing. These technologies have accelerated the adoption of Big Data services in India. The surge in player count was also linked to the government's data localization strategy. In India, the competitive landscape for Big Data Technology & Services is still relatively fragmented. This is largely due to the presence of a mature IT services business that have been able to effectively embrace the data revolution. Along with the established giants, there plenty of start-ups and mid-sized enterprises that specialise in meeting the global need for Big Data across a variety of End-User verticals.

Several of the most common challenges that these leaders face across multiple industries, including healthcare, finance, and fast-moving consumer goods, remain consistent, including a dearth of analytics talent; poor data, complex and diverse data; restricted data availability due to privacy and security concerns; quality and specificity of data insights; and difficulty integrating with legacy/proprietary systems. Additionally, the significant investment cost and insufficient knowledge regarding the return on investment associated with big data analytics act as a deterrent to the industry adopting the technology.

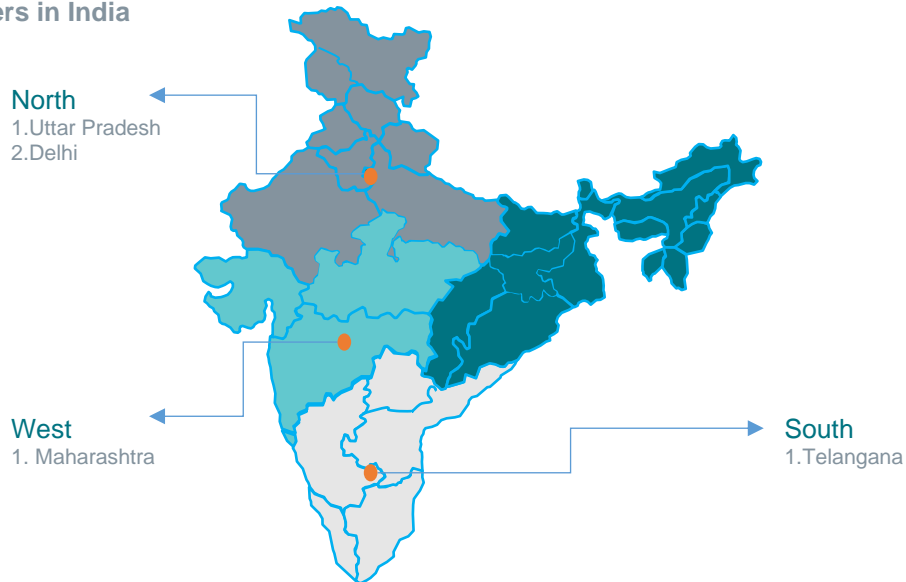
India's Big Data analytics business is booming, owing to the country's vast resource pool of highly proficient, English-speaking individuals. Indian businesses, gradually realising the value, are projected to expand their efforts in analytics applications over the next 12 months in order to realise cost savings and maintain business resilience. With digital connectivity across the length and breadth of the country, it has the potential to result in extraordinary data consumption and deliver a significant boost to the Big Data analytics business. In conclusion, with India ranking among the world's top five social media and mobile customers, the collection of massive amounts of data is necessary. With about 2.9 zeta bytes of data generated by 2020, Big Data analytics will develop into a flourishing sector, offering several chances to firms and investors interested in exploring this space.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Tata Consultancy Services, Mumbai, Maharashtra	HData Systems, USA	Hyperlink InfoSystem
Tech Mahindra, Pune, Maharashtra	Accenture, Ireland	Manthan System
Infosys, Bengaluru, Karnataka	Capgemini, France	LatentView Analytics
Hyperlink InfoSystem, Ahmedabad, Gujarat	Genpact, USA	Tata Consultancy Services
Persistent Systems, Pune, Maharashtra	Tiger Analytics, USA	Tech Mahindra
Wipro, Bengaluru, Karnataka	DataFactz, USA	Infosys
Manthan Systems, Bengaluru, Karnataka	AbsolutData, USA	Hyperlink InfoSystem
Cartesian Consulting, Mumbai, Maharashtra	Mu Sigma, USA	Persistent Systems
BRIDGEi2i Analytics Solutions, Bengaluru, Karnataka	Fractal Analytics, USA	Wipro
LatentView Analytics, Chennai, Tamil Nadu	Palantir Technologies, USA	Hyperlink InfoSystem

CREATIVE AND MEDIA

Key clusters in India



Market overview, trends, challenges, and opportunities

India is the fifth - largest market for media and entertainment (M&E). The Indian media and entertainment (M&E) industry is a flourishing sector that is making significant advancements, worth GBP 13.8 billion in 2020 and is expected to reach GBP 22.3 billion by 2023, owing to the rapid use of digital technology across geographies.

As India's internet users are predicted to reach 900 million by 2026, up from 622 million in 2020, the advertising-supported video on demand (AVoD) category is predicted to grow at a 24% compound annual growth rate (CAGR) to GBP 1.95 billion by 2025, while TV is predicted to continue leading the segment, growing at a 7% CAGR to GBP 8.47 billion by 2023. By 2025, the mobile gaming market in India is expected to reach a value of GBP 5.25 billion. India's animation and visual effects business, which currently accounts for approximately 10% of the worldwide market, has the potential to grow to 20% to 25% by 2025.

Despite the growth of conventional media, changes in consumer habits such as enjoying 'television on the move' as a result of urbanisation may eventually stymie growth. While the majority of Indian audiences still prefer free or ad-supported content, consumer preference for subscription-based platforms and one-off content transactions is threatening to erode advertising revenue. Fragmentation is a problem for OTT services. Moreover, OTT is strongly reliant on broadband access, which is still in its infancy in the country. Additionally, online piracy of film and television material is widespread in India, and escalating piracy is likely to impede both full monetization of content and widespread adoption of subscription video on demand (SVoD) in the country.

With a population of more than 1.3 billion, India is an attractive expansion market for M&E companies. India's M&E industry is strategically relevant for international players looking to monetize content and build their businesses, either as a participant through licencing or other commercial arrangements or as an absolute owner through in-bound acquisitions or organic expansion. With the rapid rise of over-

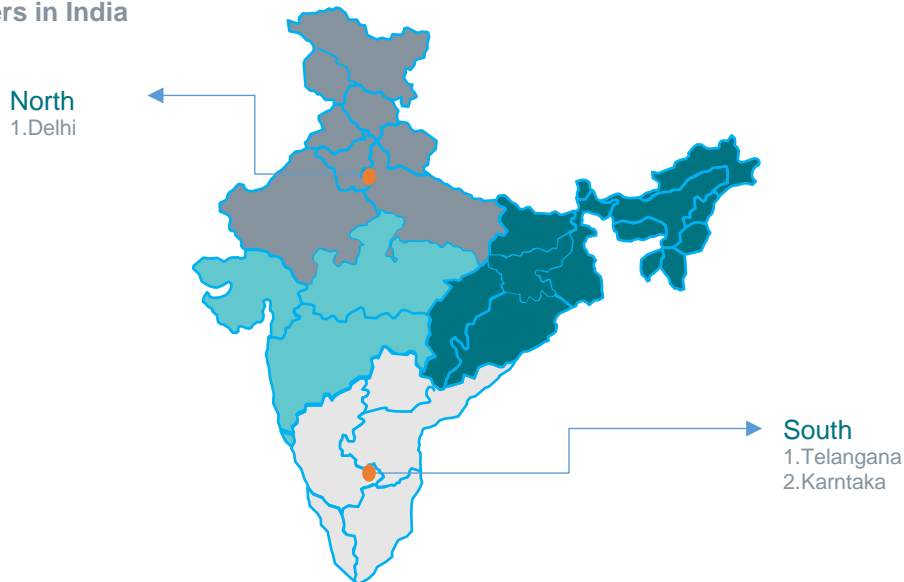
the-top (OTT) channels, growing emphasis on animation intellectual property (IP) material, and increased investment in visual effects (VFX) by studios, the Indian media industry is positioned for significant growth.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Zee Entertainment Enterprises Ltd., Mumbai, Maharashtra	Comcast Corporation, USA	Saregama Limited (formerly known as Saregama Plc.) (SL)
Network18 Media & Investments Ltd., Noida, Uttar Pradesh	Walt Disney Company, USA	Prime Focus Media UK Limited
TV18 Broadcast Ltd., Noida, Uttar Pradesh	Charter Communications, USA	Pixion Ltd.
DishTV India Ltd., Noida, Uttar Pradesh	Paramount Global, USA	Moving Pictures Company
Sun TV Network Ltd., Chennai, Tamil Nadu	Netflix Inc., USA	Tata Elxsi
Prime Focus Ltd., Mumbai, Maharashtra	WPP Plc, UK	Reliance MediaWorks UK
Brightcom Group Ltd., Hyderabad, Telangana	DISH DBS Corporation, USA	
GTPL Hathway Ltd., Ahmedabad, Gujarat	Fox Corporation, USA	
DB Corp Ltd., Mumbai, Maharashtra	Sky UK Limited, UK	
Jagran Prakashan Ltd., Kanpur, Uttar Pradesh	Discovery Inc., USA	

CYBERSECURITY

Key clusters in India



Market overview, trends, challenges, and opportunities

Indian cybersecurity services and product market was projected to generate combined revenue of GBP 7.39 billion in 2021 and has grown at a CAGR of about 40% over the last two years.

As more businesses adopt a digital-first strategy, massive amounts of customer data are collected and stored; as cloud platforms, digital payments, and e-commerce adoption increases; the majority of our information and financial transactions have moved online, resulting in an increase in cyber threats for the country. Regulatory agencies are taking cognizance of these evolving risks and technology enhancements incorporating these into directives and guidelines. Due to the stated realities, cybersecurity as a vertical is poised to grow at an immense pace.

Cybersecurity organisations must contend with a lack of homogeneity in the devices used for internet access, as well as a dearth of national-level cybersecurity architecture. Additionally, there are systemic challenges such as lack of awareness, insufficient budgets, and disinterest on the part of senior management, all of which contribute to the poor identity and access management. Online threats like Ransomware and Distributed denial of service (DDoS) attacks. are on the rise and have become prominently syndicated.

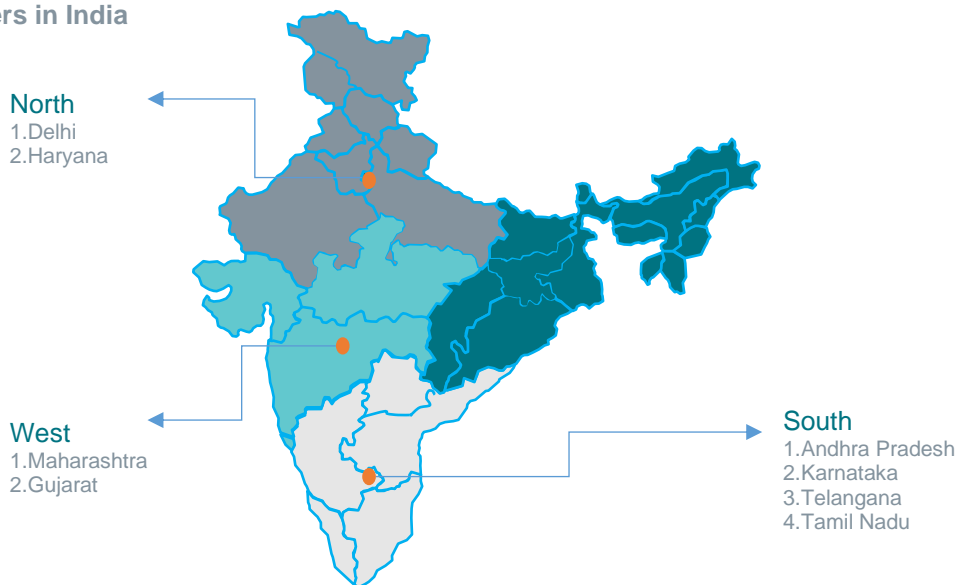
With increasing digitisation and the acceptance of online commerce and work-from-home regulations, India is expected to develop indigenous cybersecurity solutions, which will be applicable globally. The government, meantime, is committed to promoting indigenous cybersecurity start-ups and is developing a data privacy legislation. Macroeconomically, the segment is on the verge of exponential growth.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
CERT-IN (Indian Computer Emergency Response Team), ,	Accenture, Ireland	Cyient Europe Ltd
CtrlS Asia's Largest Rated 4 Datacenter	BlackBerry, Canada	
Cyient, ,	Check Point Software Technologies, USA	
E2Labs, ,	Gartner, USA	
GMR, New Delhi, New Delhi	Grant Thornton, UK	
Trendz Process Consulting, Hyderabad, Telangana	Honeywell, USA	
	Oracle, USA	
	Symantec, USA	
	UL, USA	
	Verizon, USA	

FINTECH

Key clusters in India



Market overview, trends, challenges, and opportunities

India's fintech market is the fastest growing in the world, with 67 percent of the over 2,100 fintech enterprises in existence having been established in the last five years. India's fintech business is already worth GBP 23.25 billion and is expected to double in size to GBP 63 billion by 2025. The value of fintech transactions is expected to increase to GBP 103.5 billion in 2023, up from GBP 49.5 billion in 2019. Buy Now Pay Later, InsurTech, Neobanks, WealthTech and Digital payments are among the services gaining traction and making inroads into Banking sectors' bastion.

Challenges in fintech are Risk of data security and privacy leak, platform downtimes, lack of financial literacy and awareness in India, as well as differential adoption rates among MSMEs that dominate the Indian economy. Further, rapidly changing regulations due to the evolving nature of the sector also pose cost-related challenges for users and businesses. The sector is still governed by banking regulations, and the government is yet to come out with comprehensive and separate guidelines for the fintech industry.

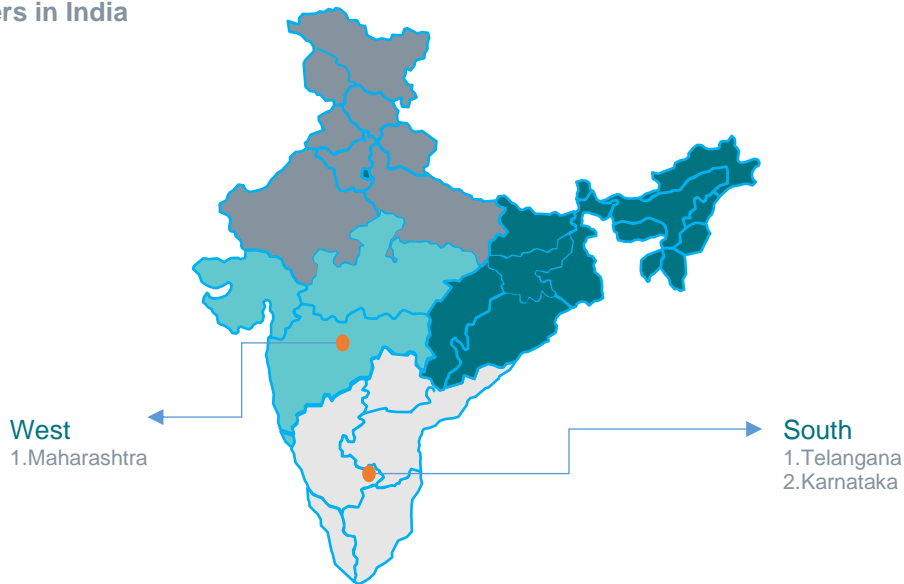
India is very much the world's most intriguing fintech market. The widespread usage of mobile device presents some unique opportunities for businesses and products in India, where mobile internet usage is rising at a breakneck pace. The younger demographic is accustomed to utilising mobile devices and is eager to try new products and services. This leads into effortless and rapid adoption of new solutions (especially in the payments space), which can make entering this industry quite pleasant.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Intellect Design Arena Ltd, Chennai, Tamil Nadu	Asset Vault, UK	QPS
PayU Payments Pvt Ltd, Gurgaon, Haryana	Fiserv, USA	Heckyl Technologies
PB Fintech Ltd, Gurgaon, Haryana	Gojek, Indonesia	
Infibeam Avenues Ltd, Ahmedabad, Gujarat	Intuit, USA	
Apollo Finvest (India) Ltd., Mumbai, Maharashtra	Mastercard, USA	
Algoquant Fintech Ltd, New Delhi, Delhi	Paypal, USA	
Miles Software Solutions Pvt. Ltd., Mumbai, Maharashtra	Revolut, UK	
Fino Paytech Ltd., Navi Mumbai, Maharashtra	Tencent (Fintech Business), China	
HSBC Software Development, Pune, Maharashtra	Visa, USA	
Juno Moneta Technologies Pvt Ltd, Mumbai, Maharashtra	Wise, UK	

GAMING

Key clusters in India



Market overview, trends, challenges, and opportunities

In comparison to worldwide markets, the Indian online gaming sector is in its infancy, but it is one of the fastest growing in the globe. In the financial year 2020, the Indian gaming industry's market worth was estimated to be around GBP 900 million. The sector has grown at a breakneck pace over the previous five years and is predicted to triple in size to GBP 2.93 billion by 2025 with 500 million consumers. One of the primary macroeconomic elements contributing to this expansion is the development of technology infrastructure.

The overall move to digital transactions, along with a rise in gaming consumption, resulted in a boost to casual game monetization. Additionally, the pandemic shifted media and entertainment consumption tendencies; people of all demographics embraced gaming as a means of escapism and enjoyment. While India has the world's second-largest gaming population, it faces numerous obstacles in the modern world. India has a modest average revenue per paying user (ARPPU), impeding capital and hence game creation capabilities. Inadequate gaming infrastructure (consoles/ PCs) and the expensive cost of gaming software act as inhibitors to the industry's expansion in India. Rampant piracy is one of the biggest concerns. In addition, the country's patchwork of laws is proving to be a headache for both gamers and gaming corporations.

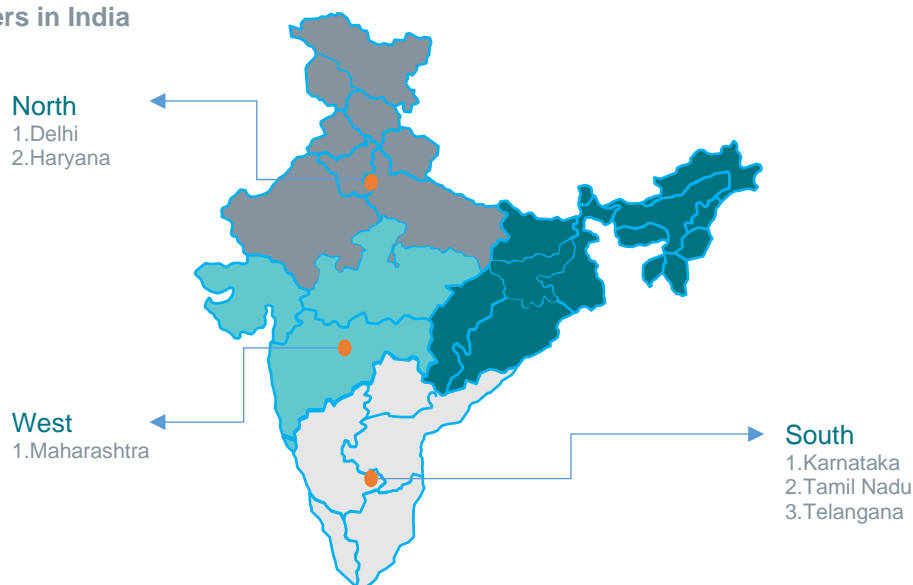
India, as the world's second-most populous country, also has the highest proportion of young and contributes significantly to global gaming revenue. With solid consumption, breakthroughs in game development, and marketers seeing gaming as a viable medium for advertising, the sector is certain to experience extraordinary growth and emerge as India's rising sector.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
NIIT Ltd, Gurgaon, Haryana	Electronic Arts (EA), USA	NIIT Ltd
Scientific Games India Pvt Ltd, Chennai, Tamil Nadu	Kwalee, UK	Infosys Limited
Nazara Technologies Ltd, New Delhi, New Delhi	Microgaming, Isle of Man	TCS
Galactus Funware Technology (doing business as Mobile Premier League), Bangalore, Karnataka	Scientific Games, USA	Zensar Technologies
AFK Gaming Pvt Ltd, Mumbai, Maharashtra	Ubisoft, France	Aaryavarta Technologies
7seas entertainment ltd, Hyderabad, Telangana	Zynga, USA	Hyperlink InfoSystem
Sanraa Media Ltd, Chennai, Tamil Nadu		
Aaryavarta Technologies, Mumbai, Maharashtra		
Dream11, Mumbai, Maharashtra		
TIMUZ, Hyderabad, Telangana		

AGRITECH

Key clusters in India



Market overview, trends, challenges, and opportunities

India is an agrarian economy, with agriculture contributing 19.9 percent of GDP in 2020-21, or GBP 277.5 billion, and is expected to see exponential growth in the future as a result of favourable government policies and technology improvements. The sector is likely to benefit from growing farmer understanding of technology, facilitated by significant internet penetration and mobile connectivity. Due to these strong tailwinds, PE and VC investments in this market are also increasing. The government is also actively involved in sector growth through the establishment of incubators, the awarding of grants, and the promotion of public-private partnerships. By 2025, the positive impact of these initiatives is estimated to value AgriTech at GBP 22 billion.

India is the third-largest receiver of AgriTech financing in the world, behind the United States and Germany, and has the third-largest number of AgriTech start-ups, behind the United States and the United Kingdom. By 2020, India would have received GBP 246 million in investments from PE/VC companies, representing a remarkable CAGR of 53% from 2017 (GBP 68.75 million) to 2020.

In the next two decades, India's agricultural value chain is expected to have greater expansion (in terms of dollar value) across the entire ecosystem. This will fundamentally transform the way agriculture is produced and consumed in India and the rest of the world. Market connectivity and rural logistics have improved, allowing farmers to get a higher return on their grain.

The sector is confronted with a particular set of issues. The majority of farmers have very modest incomes, making it difficult for them to invest in upgrades, especially when combined with a widespread fear of risk and an inclination to stick to generations-old techniques. This inertia is aided further by low tech adoption in agriculture, which is a result of low-tech savvy and a lack of know-how. There is a trend toward smaller agricultural holdings, which results in decreased productivity due to the inability of larger machines or technology to be implemented on smaller land quantities. Additionally, practically every state has its own meteorological and soil conditions, complicating uniformity. Additionally, the sector

must contend with inadequate storage and processing facilities, as well as fragmented supply chains involving numerous middlemen, which results in not only delays in transportation but also cost increases.

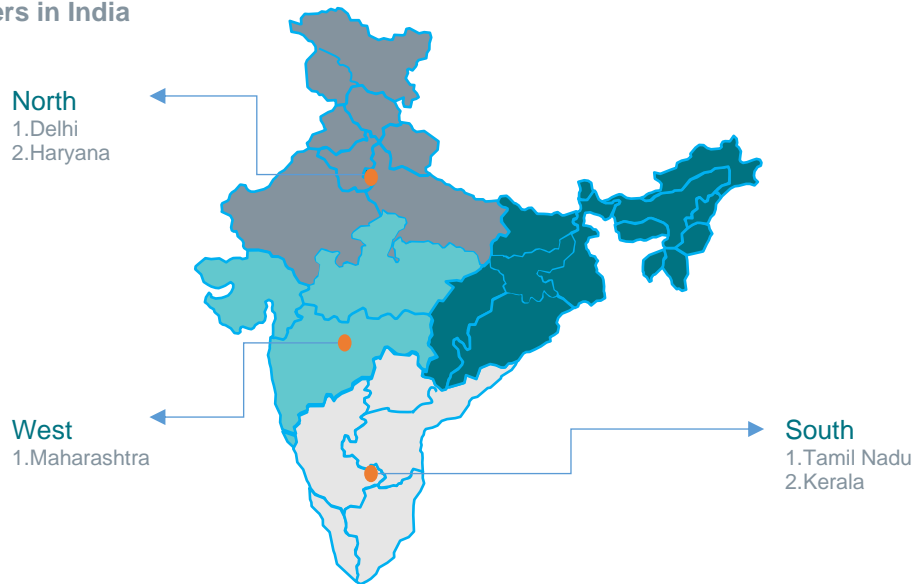
The Indian AgriTech sector is vibrant and undeveloped in terms of expansion possibilities. The sector has reached an inflection point, attracting the interest of global investors. As agriculture is considered the backbone of the Indian economy, AgriTechs are critical in assisting farmers in digitising their whole supply chain and adapting to new technologies such as artificial intelligence, the Internet of Things, big data analytics, and advanced engineering techniques. Significant disruptions in the Indian agriculture sector are being caused by technological developments, legislative reforms, and increased investment. AgriTechs are expected to be well-prepared to address industry difficulties and capitalise on prospects.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Tech Mahindra, Pune, Maharashtra	Accenture, Ireland	Tech Mahindra
ITC (eChoupal), Kolkata, West Bengal	Cognizant, USA	Infosys
Infosys, Bangalore, Karnataka	KisanHub, UK	Tata Consultancy Services
Tata Consultancy Services (mKrishi), Mumbai, Maharashtra	Indigo AG (JV with Mahyco Grow), USA	
Ninjacart, Bangalore, Karnataka	Cargill - Digital Saathi, USA	
CropIn, Bangalore, Karnataka	Genus Breeding India (ABS India) - part of Genus PLC, UK	
DeHaat, Patna, Bihar	SupPlant, Israel	
Waycool, Chennai, Tamil Nadu		
BigHaat, Bangalore, Karnataka		
EM3 Agri Services, Noida, Uttar Pradesh		

FINANCIAL SERVICES

Key clusters in India



Market overview, trends, challenges, and opportunities

India has a diverse financial sector that is rapidly expanding, both in terms of established financial services organisations and new entrants such as payment banks. However, India's financial sector is dominated by the banking sector, with commercial banks accounting for more than 64% of total financial system assets. As of August 2021, the mutual fund industry was managing GBP 365.90 billion in assets over 108.5 million accounts. Simultaneously, GBP 3.19 billion was raised in FY21 through 55 initial public offerings (IPOs), with 1,920 and 5,542 enterprises, respectively, listed on the NSE and BSE.

Banking and financial services have seen dramatic changes as a result of the adoption of digital technologies. With the whole banking and financial services industry migrating to digital channels, digital-only banks are facilitating the creation of paperless and branchless banking systems. With the growing usage of smartphones and the launch of UPI (Unified Payments Interface), digital payments received a significant boost, resulting in various Fintech success stories centred on the creation of businesses and services for this ecosystem.

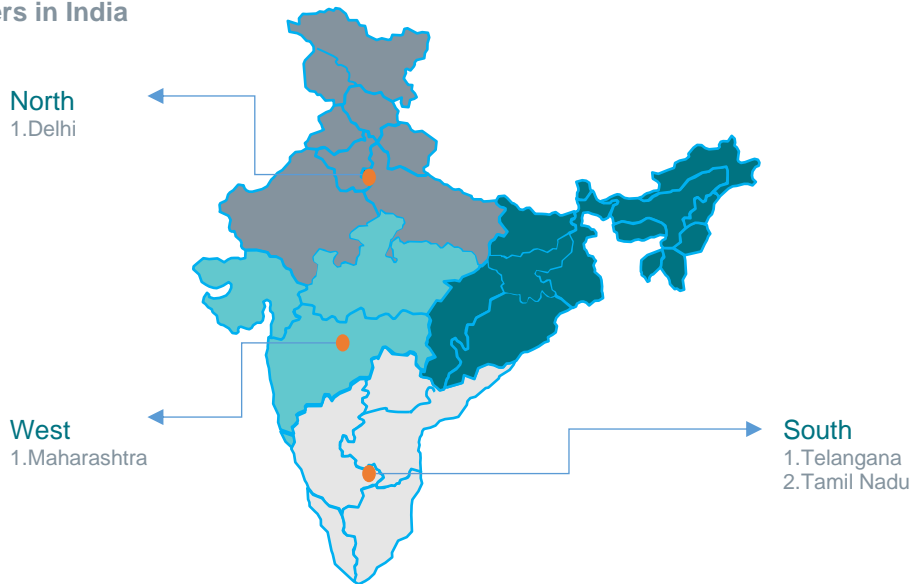
The Indian government has introduced a series of reforms aimed at liberalising, regulating, and improving this business. India has developed into one of the world's most dynamic economies as a result of its robust banking and insurance sectors, and India's capital market is definitely one of the most vibrant in the world, owing to a coordinated effort by the government and business sector. By 2028, India is likely to be the fourth-largest private capital market in the world. The relaxation of foreign investment restrictions, coupled with a young demography with rising incomes makes India a bet worth taking.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Bajaj Finserv Ltd., Pune, Maharashtra	Oracle Financial Services Software, US	
Power Finance Corporation Ltd, , Delhi	Aditya Birla Minacs Worldwide Ltd, US	
Aditya Birla Capital Limited, Mumbai, Maharashtra	Atom Technologies Ltd., Japan	
REC Ltd, Gurgaon, Haryana	BNY Mellon Technology Private Ltd, US	
Piramal Enterprises Ltd, Mumbai, Maharashtra	Bank of America, US	
Cholamandalam Finance Holdings Ltd, Chennai, Tamil Nadu	Barclays, UK	
L&T Finance Holding Ltd, Mumbai, Maharashtra	Citigroup, US	
Indian Railway Finance Corp Ltd., New Delhi, Delhi	HSBC, UK	
Housing & Urban Development Corporation Ltd, New Delhi, Delhi	Morgan Stanley, US	
Piramal Capital & Housing Finance Ltd, Mumbai, Maharashtra	Goldman Sachs, US	

SHARED SERVICES

Key clusters in India



Market overview, trends, challenges, and opportunities

Almost 0.8 million individuals work in India's Shared Services Centres (SSCs), which generate nearly 19 billion pounds in income. Over the previous two decades, India's skill pool and cost arbitrage have resulted in an amazing rise of this business. The classic shared service centre paradigm is changing from a standalone functional transaction model to a strategic value model, thanks to advancements in technology and strategic decision management.

India, formerly known for its call centres, is shifting its focus, with foreign firms investing in the establishment of Global Innovation and Research Centres. India stands to benefit from this shift in focus since it has the best combination of high-skilled, technological, and leadership skills. As corporations turn to their SSCs to drive innovation across their whole Product Value Chain, demand for understanding of cutting-edge technologies such as Machine Learning, AI, Cloud Computing, and Data Science has increased. Furthermore, the pandemic has demonstrated that remote work is just as efficient as on-site work, and hence the financial rationale for SSCs has never been stronger.

Domestic use of these services has only lately increased, as most Indian enterprises lacked the scale or a diversified geographic presence to reap the full benefits of shared services. Because labour arbitrage is not relevant in India, the conventional value proposition of shared services has been poor. In comparison to worldwide averages, several verticals in India have lower adoption rates of shared services. Furthermore, many India-based service providers did not focus on the local market because exports provided them with significant growth and profits. Furthermore, there are still a number of obstacles to overcome when it comes to selecting the proper personnel to oversee shared services operations in India. There is a talent excess and a leadership shortage in this industry, as in many others. As a result, one is left with a difficult-to-navigate scenario.

For many international corporations, India has become a worldwide outsourcing powerhouse during the previous two decades. The basics of the notion of shared services are the consolidation and outsourcing

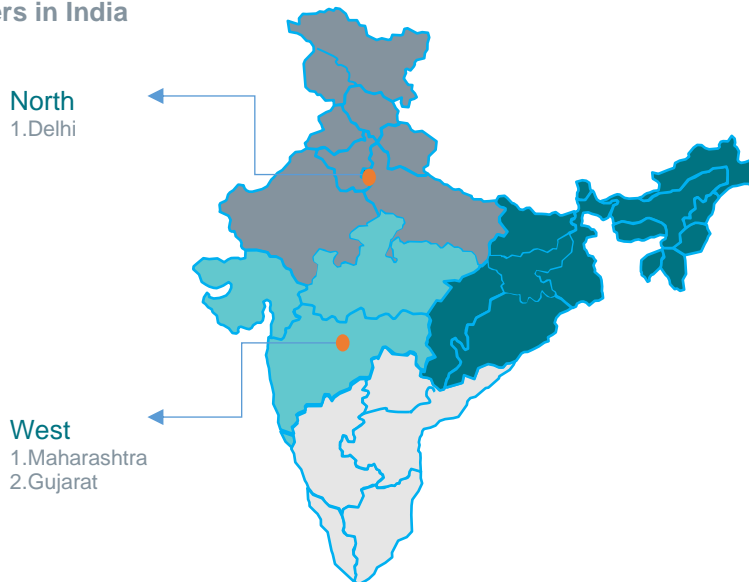
of specific operations and procedures. This notion has just lately begun to be used by Indian enterprises in order to achieve growth through specialised specialisation, cost-effectiveness, and delivery excellence. For most industries, India remains the most appealing outsourcing destination. By 2025, 500 multinational corporations are anticipated to open SSCs in India, fostering an indigenous talent pool and increasing overall exports from SSCs to GBP 43.5-60 billion, employing up to 2 million people. Hybrid/remote working is the industry's future, and all SSCs will substantially spend in upskilling and reskilling people. Factors that will drive the growth of the industry in the next decade will be substantially different from the factors that drove growth in the past decade.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Ctris Data Centers Ltd, Hyderabad, Telangana	Grant Thornton-Gt Us Shared Services Center India , USA	
TCS Limited, Mumbai, Maharashtra	Barclays Shared Services Pvt Ltd, UK	
Infosys Limited, Bangalore, Karnataka	Capgemini Solutions Pvt Ltd, France	
Wipro Limited, Bangalore, Karnataka	Swiss Re Global Business Solutions, Zurich	
Mindtree Limited, Bangalore, Karnataka	Hexaware Technologies Limited, Mauritius	
Sonata Software Limited, Bangalore, Karnataka	Coforge Limited, Netherlands	
Persistent Systems Ltd, Pune, Maharashtra	Inspirisys Solutions Limited, Japan	
Mastek Limited, Mumbai, Maharashtra	Accelya Solutions India Limited, Spain	
Trigyn Technologies Limited, Mumbai, Maharashtra	Expleo Solutions Limited, France	
NIIT Limited, Gurgaon, Haryana	Mindtech India Limited, Mauritius	

INSURANCE

Key clusters in India



Market overview, trends, challenges, and opportunities

In FY21, India's insurance penetration was 4.2%, with life insurance accounting for 3.2 % and non-life insurance accounting for 1.0 %. In terms of insurance density, India's total density in FY21 was GBP 58.5. Despite this India is the 10th largest Life Insurance market and 15th largest Non-Life Insurance market globally. India is also Asia-Pacific's second-largest insurance technology market, accounting for 35% of the GBP 2.75 billion insurtech venture capital investments in this region.

Web aggregators' share in digital insurance origination has risen steadily, presently accounting for more than 30% of all digital insurance subscriptions. Increased awareness of pure risk insurance and desire for a no-frills, easy-to-understand product. At the same time. Innovation in health insurance solutions is being driven by a growing focus on fitness and health.

Huge segments of India's population are uninsured, indicating the existence of an insurance gap, which can be mainly attributed to low rural insurer participation, and the tendency of life insurers, particularly private ones, to target mainly the metropolitan population. Accessibility of insurance products, mainly related to affordability and awareness of the product is a major issue.

Also, in terms of market share, public-sector insurers continue to control a larger part of the market while being fewer in number. In addition, non-life insurance prevalence in India is less than 1%, and the market significantly captured by Life insurance and insurance solutions for specialised risks such as disasters and cyber security are still in their infancy in the nation.

In terms of gross written premiums, India's life insurance sector is expected to expand from GBP 57 billion in 2019 to GBP 81 billion in 2024. An increase in formalization of household savings and awareness towards financial products coupled with younger working population proportion and rise in nuclear family structures is driving insurance coverage. On the other hand, the government initiatives such as PM-JAY, PMFBY, PMJJBY, PMSBY, etc. are increasing insurance penetration. India now

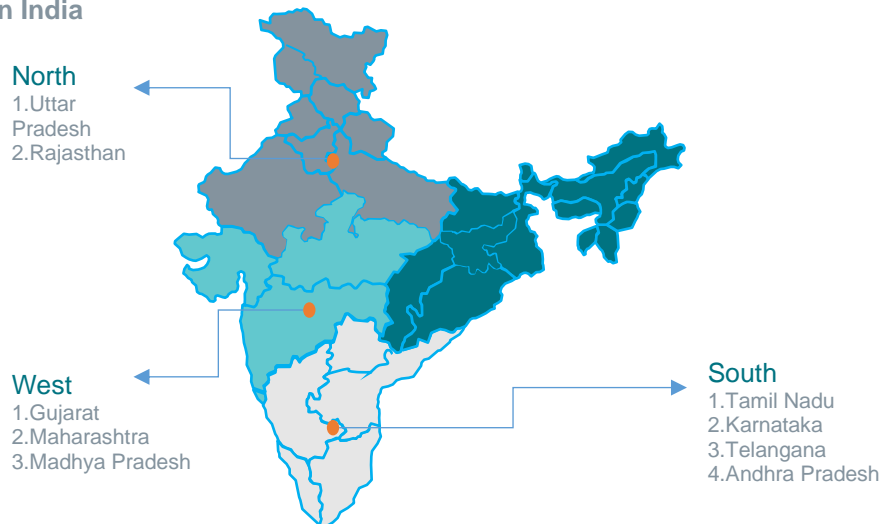
allows FDI up to 74% to boost the capital and accelerate growth in the sector. With various changes in the regulatory framework, the life insurance sector's future looks bright. This will lead to even more change to the way the industry currently operates and interacts with its clients.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
SBI Life Insurance Company Ltd, Mumbai, Maharashtra	AXA, France	New India Assurance
ICICI Prudential Life Insurance Company, Mumbai, Maharashtra	Generali Group, Italy	LIC
HDFC Life Insurance, Mumbai, Maharashtra	Allianz, Germany	General Insurance Corporation
General Insurance Corporation of India, Mumbai, Maharashtra	Aviva, UK	
New India Assurance Company Ltd, Mumbai, Maharashtra	Munich Re, Germany	
Max Financial Services Ltd, New Delhi, Delhi	MetLife, USA	
Bajaj Allianz Life Insurance Company, Pune, Maharashtra	Aegon, Netherlands	
Reliance Capital Limited, Mumbai, Maharashtra	Prudential, UK	
Kotak Mahindra Life Insurance Company Ltd., ,	Tokio Marine (Iffco tokio), Japan	
ICICI Lombard General Insurance Company, Mumbai, Maharashtra	Standard Life, UK	

GREEN HYDROGEN

Key clusters in India



Market overview, trends, challenges, and opportunities

Hydrogen has been a rapidly growing sector around the world, with numerous industrial applications. A growing number of businesses worldwide are currently investigating green hydrogen. Green hydrogen has been dubbed one of the world's most environmentally friendly kinds of energy. It is viewed as the optimal way to attain net-zero emissions. Over 6 million tonnes of grey hydrogen are anticipated to be produced annually in India using steam methane reformation fueled by fossil fuels with associated CO₂ emissions.

India's green hydrogen market is currently in the nascent stages of development, mainly attributed to its high cost. However, as the production costs of green hydrogen reach parity with grey hydrogen through 2030. New self-sustaining markets are predicted to emerge for green hydrogen thereby accelerating the economy-wide net zero emissions.

Currently, Green hydrogen production cost three times costlier than grey. This high cost of production and consequent lack of cost-competitiveness relative to fossil fuel-based hydrogen coupled with lack of distribution infrastructure and reluctance in sectors such as steel and transport suggests a tricky path for India to net-zero using hydrogen.

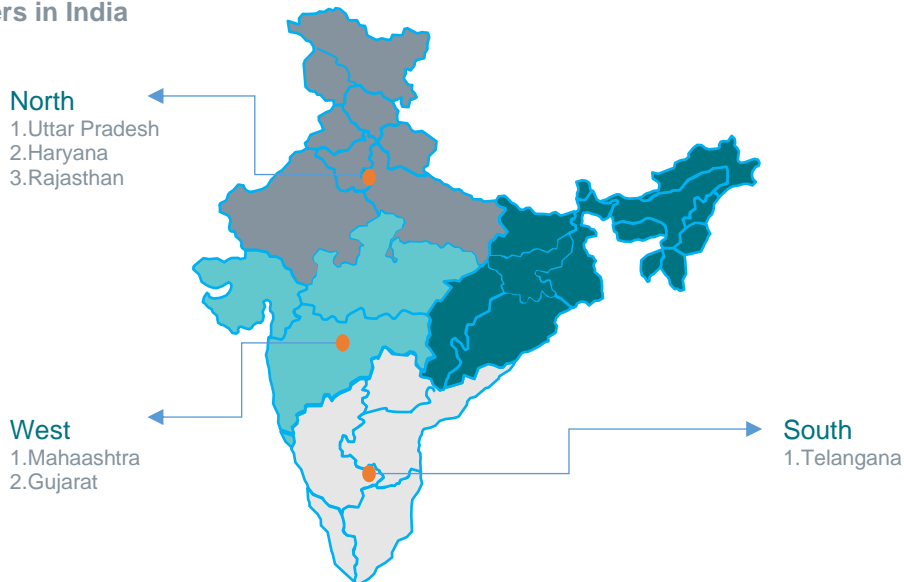
India has the potential to lower the cost of green hydrogen by utilising low-cost renewable energy sources and cost-curtailement experience garnered from reverse solar and wind auctions. India's foray towards green hydrogen has proven revolutionary. Currently, the industry faces a high cost of production, but rising demand, technological advancements, and strong government support are projected to soon result in economies of scale, lowering costs. In keeping with India's Make in India policy and its goal of net zero emissions, the sector offers enormous potential for growth and investment. This sector has great development potential. By 2030, it is expected that hydrogen costs will have decreased by 50%. By 2050, demand for hydrogen is predicted to more than double to 28 MT, with 80 percent of that demand being green in origin. India may become a regional hub for exporting green hydrogen at competitive costs and command a reasonable part of the global hydrogen demand of 200 million tonnes by leveraging low-cost domestic renewable electricity produced at scale.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Tata Power, Mumbai, Maharashtra	Engie, France	Hero Future Energies
JSW Energy, Mumbai, Maharashtra	Mytrah, UK	ReNew Energy Global Plc
Sterling and Wilson, Mumbai, Maharashtra	Sembcorp, Singapore	
Inox Renewables, Noida, Uttar Pradesh	Bloom Energy Corp, USA	
Reliance Industries, Mumbai, Maharashtra	Plug Power Inc., USA	
Borosil Renewables, Mumbai, Maharashtra	Fusion Fuel Green, Ireland	
Acme Solar, Gurgaon, Haryana	Ohmium, USA	
Adani Green Energy, Ahmedabad, Gujarat		
Greenko Energy, Hyderabad, Telangana		
ReNew Power, Gurgaon, Haryana		

ENERGY STORAGE SOLUTIONS

Key clusters in India



Market overview, trends, challenges, and opportunities

India's electrical energy storage sector is booming, with roughly 25GWh of batteries installed in front-of-the-meter and behind-the-meter applications by 2020. Annual demand for lithium-ion batteries in behind-the-meter applications surpassed 1GWh in 2019. As Li-ion battery prices fall and become comparable to Lead-Acid battery prices, the chemistry is likely to gain market share. By 2027, yearly demand is predicted to more than double to 10GWh, expanding at a 39 percent compound annual growth rate. At the moment, the market is home to over thirty Li-ion battery pack assemblers serving both the stationery and e-mobility sectors.

India now has only 20 MW of installed battery storage capacity, with another 1.7 GW on the drawing board. According to the report, India will require 38 GW of four-hour battery storage and 9 GW of thermal balancing power projects by 2030. India might have 140-200GW of battery storage capacity by 2040, accounting for almost a third of the world's total battery storage capacity.

India dominates the energy storage sector in South Asia. Numerous factors, perhaps most notably the ambitious National Solar Mission, are propelling the energy storage market in India. India's increasing population growth, particularly in metropolitan areas, necessitates significant investment in energy generation capacity and transportation and distribution facilities throughout the country.

Despite high demand for Li-ion batteries in stationary applications and growing demand from the e-mobility industry, battery cells are still primarily imported from China or South Korea. India currently lacks a large manufacturer of EV (electric vehicle) batteries, as well as state-of-the-art facilities with sufficient capacity and capabilities. Additionally, India lacks enough deposits of several important lithium-ion components, including lithium, cobalt, and nickel. Additionally, there are no copper reserves for conductors, cables, or bus bars. Another area of concern for energy storage in India is the requirement for cost-effective energy storage technologies, owing to the cost-sensitive character of

Indian markets. At the moment, the absence of a regulatory framework for energy storage systems is also hindering the sector's development.

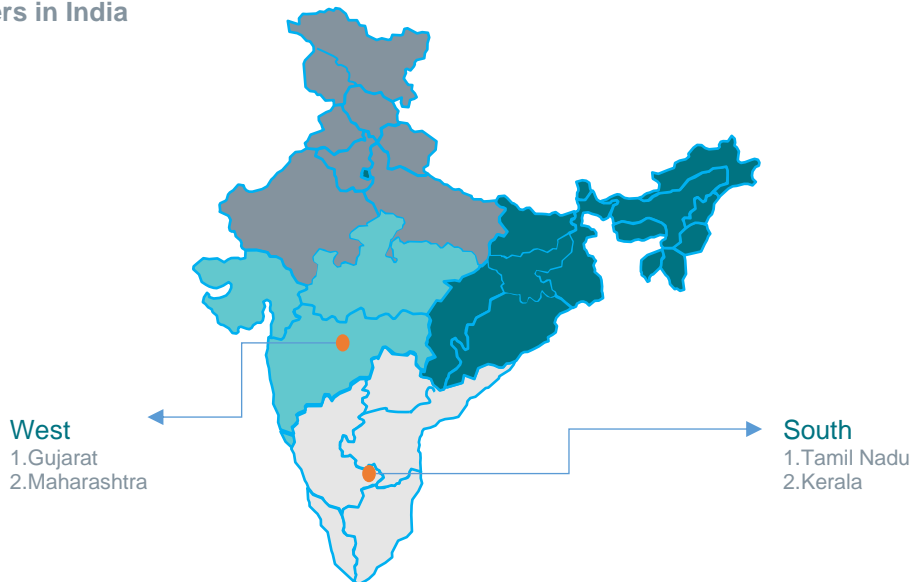
The Indian government approved a Rs 18,100 crore (GBP 1.8 billion) production-linked incentive (PLI) scheme in May 2021 with the purpose of developing 50GWh of advanced chemistry cell battery manufacturing in the country by 2027. To realise India's EV ambitions, an estimated annual battery capacity of 158 GWh will be required by FY 2030, creating enormous investment opportunities for investors. Additionally, the renewable energy push must be accompanied by grid-scale energy storage to ensure the electrical grid's stability and availability. By 2030, the country could construct energy storage capacity ranging from 50 to 120 GW (160 – 800 GWh). By 2050, the installation would rise to between 180 and 800 GW (750 – 4,800 GWh), accounting for between 10% and 25% of total installed electricity capacity. This represents a huge future market for energy storage technology.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Sterling and Wilson, Mumbai, Maharashtra	Panasonic, Japan	EESL (JV with EnergyPro Asset Management Ltd (EPAM))
Nexcharge, Sabarkantha, Gujarat	Delta Electronics, Taiwan	
Exicom Power Solutions, Gurgaon, Haryana	NEC Corporation, Japan	
ACME Cleantech Solutions, Gurgaon, Haryana	AES, USA	
Amplus Solar / Amplus Energy Solutions, Gurgaon, Haryana	LG Chem, South Korea	
SunSource Energy, Gurgaon, Haryana	Coslight International Group, Hong Kong	
Urja Solutions, Bangalore, Karnataka	Siemens, Germany	
Statcon Energiaa, Noida, Uttar Pradesh	Saft, France	
Rays Power Infra, Jaipur, Rajasthan	Tesla, USA	
Vyomaa Energy, Hyderabad, Telangana	Fluence, USA	

OFFSHORE WIND

Key clusters in India



Market overview, trends, challenges, and opportunities

One of the avenues to meet sustainably India's growing energy demand, which is expected to grow at a 3% annual rate until 2040, is offshore wind, which is still in its infancy in India, both technologically and in terms of stakeholder capability. With around 7,600 kilometres of coastline to harness, the Indian government has set two ambitious offshore wind targets: 5 GW by 2022 and 30 GW by 2030. India is in the early stages of offshore wind energy development, and extensive offshore wind and other oceanographic investigations are being conducted to ascertain the nature of the subsurface, seabed topography, and so on.

India has 36 GW of offshore wind energy potential off the coast of Gujarat and roughly 35 GW off the coast of Tamil Nadu. India's National Offshore Wind Energy Policy was adopted six years ago, yet the sector's potential remains untapped and at the moment, India does not have any operating offshore wind energy plants. India's first offshore wind energy project, in Gujarat's Gulf of Khambhat, has yet to get underway.

The development of offshore wind in India is mainly impeded by higher costs and a lack of infrastructure. The construction of offshore wind stations is a capital-intensive and highly technical task, including evacuation of power. Offshore wind turbines require stronger structures and foundations than onshore wind farms leading to higher installation costs. In addition, they are more expensive to maintain. Hence, wind tariffs in India are almost three times as high compared to onshore wind installations. Transporting longer blades of offshore wind turbines over large distances, given the condition of the road network, is currently not viable. Moreover, there is a lack of developed port infrastructure to serve as an alternative. In addition, domestic substructure producers, installations vessels, and trained personnel are lacking in India. Also, there is the multiplicity of authority for granting clearances, the process could be slowed by this factor, resulting in delays as well as cost overruns.

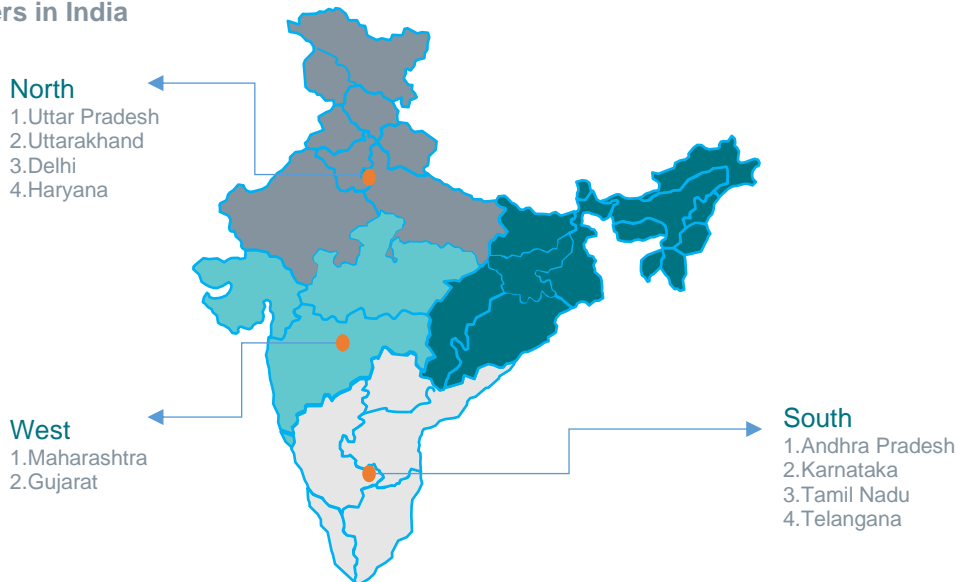
At its most affordable, new offshore wind projects have a higher levelized cost of energy (LCOE) than onshore wind—around 40% more—but onshore wind has a decades-long head start, stretching all the way back to the 1940s, whereas the first offshore wind farm began functioning in 1991. These expenses are decreasing rapidly as a result of technical advancements and are approaching an inflection point. With a robust onshore wind turbine production base in India, offshore wind turbine prices and tariffs are likely to be competitive and comparable to onshore wind turbine rates when large-scale commercial offshore wind turbine deployment occurs in the country. With falling costs this market is expected to grow multi-fold across the globe. India is also expected to make progress and take crucial steps in the right direction for the deployment of offshore wind energy by deploying financial support mechanisms, developing infrastructure and human resource. India's political commitment to self-sufficiency in terms of energy security, backed up by appropriate legislative, regulatory, financial, and technological backing, presents an unparalleled chance to reach this untapped market.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Greenko Group, Hyderabad, Telangana	Van Oord, Netherlands	ReNew Energy Global Plc
Suzlon Energy, Pune, Maharashtra	Engie Energy, France	
ReNew Power, Gurgaon, Haryana	Sembcorp, Singapore	
Apraava Energy, Mumbai, Maharashtra	Equinor ASA, Norway	
RattanIndia, Mumbai, Maharashtra	Terra Form Global, USA	
Inox Wind, Noida, Uttar Pradesh	Shell, UK	
Leap Green Energy, Coimbatore, Tamil Nadu	Mytrah, UK	

ELECTRIC VEHICLES

Key clusters in India



Market overview, trends, challenges, and opportunities

Electric mobility is one of the most promising industries in the world. India is likewise on the verge of adopting electric drivetrains in large numbers. In order to reach the decarbonisation objectives, the Indian government targets for a sales share of 30% in private automobiles, 70% in commercial vehicles, and 80% in two and three-wheelers by 2030. Electric cars (EVs) account for less than 1% of total vehicle sales in India, but the business is fast expanding, with sales estimated to reach GBP 1.5 billion by 2023 and GBP 4.8 billion by 2025.

Currently, EV sales in India vary significantly by state, owing to factors such as demographics, purchasing power, legislation, and urbanisation. Light vehicles, such as two-wheelers and three-wheelers, as well as heavier vehicles, such as buses and trucks, are set to lead the charge in the transition to electric cars. The transition for passenger automobiles is projected to be gradual, owing to the limited market size and the fact that unit economics and infrastructure will require time to mature.

Despite the fact that the business is prospering in a favourable regulatory environment, there are still hurdles that have stymied its expansion. To begin with, in order to take advantage of government incentives, one must navigate a maze of criteria and procedures. In addition, the drop-in economic activity caused by COVID-19 has had an influence on sectoral growth. Domestic battery manufacture is still in its infancy, with difficulties obtaining raw materials. The sluggish roll-out of charging infrastructure, as well as ongoing dependability difficulties with electrical networks, are now impeding EV adoption. The high upfront cost of EV vs. ICE in four-wheelers obstructs affordability, which is a key issue in India due to the majority's limited purchasing power.

To support the expansion of the EV sector, India currently allows 100 percent FDI and has implemented a production-linked incentive system. Furthermore, charging stations have been classed as a service by the government and are thus free from the licencing process. The electric vehicle transition in India opens up a slew of opportunities for enterprises in the battery supply chain, automobiles, services, charging infrastructure, and the power grid. The efficient, low-cost, and skilled labour in the Indian

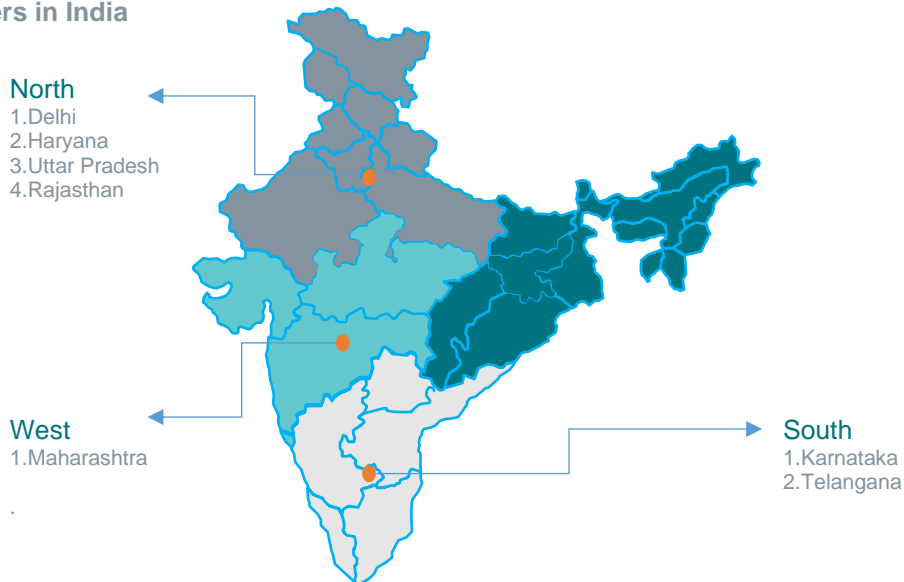
automobile business can benefit investors. Furthermore, India's auxiliary sector for electric mobility is fast expanding, providing a significant benefit to corporations considering India as a manufacturing centre for worldwide operations. It is unquestionably favourable for any foreign player to participate at this point in order to maximise the market's potential.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Hero Electric, Gurgaon, Haryana	Terra Motors, Japan	Tata Motors
Ather Energy, Bangalore, Karnataka	Piaggio Vehicles, Italy	Mahindra
Ampere Vehicles, Coimbatore, Tamil Nadu	Tesla Inc, US	Gayam Motor Works
Revolt, Gurgaon, Haryana	GoZero Mobility, UK	Atul Auto
Mahindra Electric, Bangalore, Karnataka	Hyundai Kona, South Korea	Ola Electric
Okinawa, Gurgaon, Haryana	MG Motor, UK	
Ola Electric, Bangalore, Karnataka	Kia Motors, South Korea	
Gayam Motor Works (GMW), Hyderabad, Telangana		
Atul Auto, Ahmedabad, Gujarat		
Tata Motors, Mumbai, Maharashtra		

FUTURE MOBILITY

Key clusters in India



Market overview, trends, challenges, and opportunities

In India, the mobility landscape is undergoing fast transformation. Numerous mobility drivers have evolved in recent years, ranging from electrification, and connected vehicles to data monetisation, autonomous vehicles (AV), and mobility as a service (MaaS).

MaaS has the potential to revolutionise India's ability to address existing difficulties such as unplanned urban infrastructure, insufficient public transportation infrastructure, a lack of transit-oriented development, air pollution, and safety concerns. Demand for shared mobility is expected to increase in the next decade, by 2030, shared miles are expected to reach 35 percent of all the miles travelled in India and this will further improve to 50 percent by 2040. The increasing smartphone penetration and rapid use of cashless payment methods should contribute to MaaS acceptance.

AVs have the potential to reduce traffic congestion and improve safety and fuel efficiency. Certain advanced driver-assistance systems feature such as park assist, navigation service, anti-lock brake assistance, electronic stability program, and others have started to make their way into vehicles in India. And once the Bharat New Vehicle Safety Assessment Program comes into full force these features will see significant uptake.

Barring the infrastructural gaps, limiting factors for future e-mobility are varied. There is a general lack of a local research and manufacturing ecosystem for future technologies. With respect to MaaS, concerns regarding data safety and privacy primary challenge. On the AV front, the technology is hard to adopt, especially in the context of India, due to the absence of sturdy infrastructure with unsafe roads, chaotic traffic, non-availability of networked car technology, and lack of decent internet connectivity. The worry of loss of jobs due to automation seems to be another serious concern for the government which inhibits global AV players to see India as the prospective market to bet on. Also, the government has also not offered any legal backing to autonomous vehicles in India yet.

The favourable macroeconomic and demographic trends sustained government backing for industry, and India's rise as a manufacturing hub all bode well for India's future mobility. India equipped with its specific set of drivers has the ability to disrupt this industry and would be a preferred destination for both research and manufacturing in the field.

List of Businesses in the sector

Leading Indian Businesses	Leading U.K. and International Businesses	Indian Businesses in the U.K.
Mahindra Electric Mobility Limited, Bangalore, Karnataka	MG Motors, UK	Tata Elxsi
Tata Motors, Pune, Maharashtra	Volvo, Sweden	Mahindra & Mahindra
	Mercedes Benz, Germany	
	Olectra Greentech, China	