

Investment Opportunities under
India's Mega Plans
March 2015

Compilation by
Federation of Indian Chambers of Commerce and Industry (FICCI)



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Major Policy Reforms Initiated by the GoI

Ease of doing business

Measures have been taken to cut down red tape, and to lay down the red carpet, diminish human interface and make the system efficient with technology. There has been considerable action on administrative and procedural reforms which will provide comfort for setting of new businesses and improve confidence of all investors. With simplified procedures and rules, industry will save much time and costs which will also improve competitiveness. Some of the key administrative reforms that have been introduced include:

A. Bureaucratic overhaul for effective decision making

- More centralized decision making with PMO playing bigger role
- Decision making process restricted to four layers (no files will be signed by more than 4 officials)
- Two weeks deadline to answer queries
- 7-slide presentations by bureaucrats to Ministers in place of lengthy reports

B. Simplification of procedures

- Reduction in regulatory compliance returns
- Relaxation of environmental clearances
- No inspection to be undertaken without requisite approval
- Self-certification and Third Party Certification for Boilers Act
- De-licensing of many defence products
- 24x7 customs clearance facility extended to 13 more airports and 14 more sea- ports

C. Digitisation for e-governance (through e-Biz and Digital India)

- Online application for Industrial Licensing introduced with 24*7 basis accessibility
- Introduction of online returns for business through a single form
- Online tracking of environmental and forest clearances
- All registers required to be maintained by the business to be replaced with a single electronic register

Taxation

Goods and Services Tax

- The new Government has acknowledged that the introduction of a Goods and Services Tax (GST) will streamline tax administration, avoid harassment of the business and result in higher revenue collection for the Centre and the States.
- Government has tabled the Constitutional Amendment Bill on GST in the Parliament. In the Union Budget for 2015-16, the Government has reiterated that GST will be made operational from 1st April, 2016.

Direction of Tax Reforms - allowing for ease of doing business

- Government has given a commitment in the Parliament that it will not ordinarily bring about any change retrospectively which creates a fresh liability. As regards the tax cases which have come up in various courts and other legal fora, these are at different stages of pendency and will be allowed to reach their logical conclusion.
- Government has also conveyed to the Parliament that it is committed to provide a stable and predictable taxation regime that would be investor friendly and spur growth.
- Government has announced several measures for reforms in the tax administration as a part of Union Budget 2015-16 presented in the Parliament in the last week of February 2015.

Foreign Direct Investment

- The composite cap of foreign exchange in defence manufacturing as well as insurance sector has been raised to 49% with full Indian management and control through the FIPB route.

- The revision of cap in the defence sector will enable setting up of a robust Defence Industrial Base (DIB) - allowing for indigenously designed & manufactured Defence & Aerospace products customised to the needs of Indian armed forces, while creating employment opportunities in the country. This will pave way for indigenous production of certain high technology products such as aircraft engines, advanced missile guidance systems, seekers, production of smart materials, high strength carbon fibre etc. In fact, companies are undertaking joint ventures with their international counterparts and a spurt in domestic manufacturing is on the anvil.
- The Insurance Bill has been cleared by the Parliament. With increased FDI limit in the insurance sector, the capital starved sector will now have access to foreign capital. At present millions of Indians are under-insured. The move is expected to improve life and health insurance coverage and provide long term savings vehicles.
- There has been a relaxation of FDI norms for the construction sector, to encourage development of Smart Cities.
- Further, manufacturing units (with FDI) will now be allowed to sell products through retail including e-commerce platforms.

Labour reforms

- The Central government has proposed amendments to Factories Act, Apprenticeship Act and Labour Laws (Exemption from Furnishing Returns and Maintaining Registers by Certain Establishment) Act. The Apprenticeship Amendment Bill has been passed in the Parliament.

Some of the salient features of the amendments proposed by Government include:

- 500 new trades to be included in the Apprenticeship Act. This will give a boost to skill development initiative of the government
 - Companies employing less than 40 workers need not comply with some of the stringent labour regulations
 - Removal of restriction on women working night shift (useful for textiles and IT)
 - Overtime limit increased to 100 hours from 50 hours earlier - this will provide greater flexibility to employers
- Labour ministry has introduced a web portal where enterprises can file their compliance returns for 16 of the 44 central labour laws in the country. The Labour Ministry has also come up with a single return format for the 16 labour laws.

Fiscal measures

- The Government has set up an Expenditure Management Commission headed by Dr. Bimal Jalan to look into expenditure reforms. The Commission has submitted an initial report to the Government, providing a roadmap for rationalization of subsidies.
- The Government has plans to revamp the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and make it more productive by linking it to agriculture activity and rural development.
- The Government recently deregulated diesel prices and formalized a price formula for domestic natural gas, which was a much awaited move. This is expected to ease the huge subsidy burden.

Mitigating food inflation and raising agri-productivity

- Various measures have been adopted by the Government to mitigate inflation viz. outlined contingency plans for 500 districts; crack down on hoarders, imposition of minimum export price on onions and potatoes, line of credit for import of pulses & edible oil and advisory to states to delist fruits and vegetables from APMC Act. Also, in the previous Union Budget the Government had announced creation of a Price Stabilisation Fund to mitigate farmers' woes due to price volatility.
- In the Union Budget 2015-16, the government has announced creation of a Unified National Agriculture Market, which will help in reining food inflation.
- The Government has decided to set up a High Level Committee (HLC) of distinguished persons and experts to recommend restructuring of FCI after considering various aspects of present structure and functional areas of the organization and consulting various stakeholders.
- A series of steps were announced in the previous budget such as introduction of soil health cards, setting up of agri-tech infrastructure fund, launch of a technology driven second green revolution including 'protein revolution' and greater focus on irrigation. All these measures will help in improving agri-productivity and provide a permanent solution to the issue of food security.
- The Government has also planned to create a food road map to identify food clusters across the country. This will aid in identifying the strengths in terms of crop strength, production, processing and ensure the desired intervention to expand the food export market.

Financial reforms

- To meet the requirement of banks to raise equity in lines with Basel III norms by 2018, the Government has allowed public sector banks to raise capital by increasing the shareholding of the people in a phased manner.
- The Government has launched financial inclusion scheme called 'Pradhan Mantri Jan-DhanYojana' (PMJDY), envisaged as a combination of savings, loans and insurance products. The scheme launch was hugely successful with over 1.8 crore bank accounts being opened on the first day. Linking financial literacy and direct cash transfer with this program is expected to increase awareness, induce demand and ensure sustainability of the model. Till February 2015, 136.8 million bank accounts have been opened under PMJDY.
- Several new initiatives have also been introduced in the Union Budget 2015-16, including the move towards a social security system, setting up of Bank Board Bureau, Monetary policy Committee, etc.

Key Highlights of the Union Budget 2015-16

The broad highlights of the Union Budget 2015-16 are as under-

- **Unified National Agriculture Market:** The Government has announced creation of a Unified National Agriculture Market. Move towards a single national market for agri-produce will help rein in the inflationary pressure in case of food commodities as well as provide better prices to farmers for their produce.
- **Make in India:** There has been a reduction in rates of basic customs duty on certain inputs, raw materials, intermediates and components (in all 22 items) to minimize the impact of duty inversion and reduce manufacturing cost in several sectors. Government has allowed complete tax pass through for both category 1 and category 2 Alternative Investment Funds. The latter action will help mobilize higher resources for investments in manufacturing sector.
- **Infrastructure:** The Government announced an additional Rs. 70,000 crore spend on the infrastructure sector. This is expected to provide a huge impetus to overall growth and should help encourage private sector investments in due course. The setting of the National Investment and Infrastructure Fund in the form of a trust to raise debt funding in various forms and in turn invest as equity in infrastructure finance companies is a welcome move. This would be an additional avenue to support infrastructure financing and hopefully lessen some of the pressure on the public sector banking system. Further, the clarification on tax related matters on REITs and InvITs, which are the key instruments announced in the last budget for channeling funds into the real estate and infrastructure sectors, is also welcome.

In addition to the above, tax-free infrastructure bonds for rail, road and irrigation projects were reintroduced. Government has also indicated adoption of 'Plug and play' approach in case of UMPPs, plan for corporatization of ports and steps towards revitalizing Public Private Partnerships.

- **Micro Small and Medium Enterprise (MSMEs):** An electronic trade receivables discounting system (TReDS) has been established to tackle the problem of long receivables realization cycle of the MSMEs. The related move of setting up of the Micro Units Development Refinance Agency (MUDRA) bank will help meet the funding requirements of micro enterprises in the informal sector and provide a boost to entrepreneurship.

In addition, establishment of a Self Employment and Talent Utilization (SETU) mechanism was announced to support start up businesses and other self employment activities.

- **Gold Monetization:** The Budget for the first time has announced several measures to monetize gold. FICCI had recently submitted a report on this subject and some of the suggestions contained therein such as developing an Indian Gold Coin, having a Sovereign Gold Bond and revamping the Gold Deposit and Gold Metal Loans scheme have been taken up by the government. These measures should help in more effective utilization of domestic gold reserves through recycling and thus help reduce the imports of gold that have put pressure on the current account in the past.
- **Black Money:** The Government announced introduction of a new comprehensive law on black money held abroad in the current session of the Parliament along with a new and more comprehensive benami transactions (prohibition) bill to curb domestic black money. The issue of black money has been a grave concern for the Indian economy. The existing legal and administrative framework has been ineffective in dealing with this issue and thus there is an urgent need to put in place an efficient legal framework.
- **Corporate Bond market:** The Government announced to set up a Public Debt Management Agency. This is important in the context of deepening the Indian bond market. This will help in reducing over dependence on banks for long term funding.
- **Bank Board Bureau:** The Government plans to set up a Bank Board Bureau with the objective of improving governance of Public Sector Banks. The Bureau will pick heads of Public Sector banks and help them device differentiated strategies and capital raising plans through innovative financial methods and instruments.
- **Monetary Policy Framework:** The Budget announced that the RBI Act will be amended this year to provide for a Monetary Policy Committee. The Monetary Policy Committee will be set up to reinforce the partnership between the Government and the Central Bank with the objective of managing inflation dynamics.

- **'Act East' policy:** The Budget announced setting up of a Project Development Company, which through separate Special Purpose Vehicles (SPVs) will facilitate establishment of manufacturing hubs in CLMV countries -Cambodia, Laos, Myanmar, and Vietnam. This is to drive the interest of Indian private sector to undertake investments in these countries and deepen economic and strategic relations with the South East Asian region.
- **Ease of Doing Business:** Assuring ease of doing business has been a key priority for the Government. Some of the announcements in the Budget towards improving the business environment included -
 - **Setting up commercial divisions in various courts:** The Government has proposed to set up exclusive commercial divisions in various courts in India based on the recommendations of the 253rd Report of the Law Commission. In this regard, the Government has proposed to introduce a Bill in the Parliament after consulting stakeholders. This would help curtail the overstretched litigation and ensure speedy disposal of monetary suits at reasonable cost to the litigant. This is definitely a stepping-stone to reform the civil justice system in India.
 - **Bankruptcy Code:** The budget announced introduction of the much needed comprehensive bankruptcy code in the fiscal year 2015-16. This will bring about legal certainty and speed and is an important measure in improving the ease of doing business in India.
 - **Procurement Law:** Malfeasance in public procurement can be contained by having a procurement law and an institutional structure consistent with the UNCITRAL model. This would help contain possible avenues of B2G corruption and along with an effective Prevention of Corruption Act, act as a deterrent.
 - **Expert Committee on regulatory mechanism:** The government indicated that it intends to appoint an Expert Committee to examine the possibility and prepare draft legislation where the need for multiple prior permissions can be replaced with a pre-existing regulatory mechanism. Implementation of such a mechanism would cut down time and cost spent for seeking regulatory approvals and will be a big boost to ease of doing business in India and establishing India as an Investment Destination.
- **National targets for the year 2022:** The government reiterated its resolve to provide for basic amenities to all Indian citizens especially the underprivileged by the year 2022, which marks 75 years of India's independence. These include housing for all, assured water and power supply, substantial reduction in poverty, provision of medical services and education facilities.

Make in India Campaign

With a vision to develop India as a global manufacturing hub, Honourable Prime Minister of India Shri Narendra Modi unveiled 'Make in India' campaign in September 2014. The programme aims to create a robust manufacturing sector by facilitating investment, fostering innovation, protecting intellectual property, and building best-in-class manufacturing infrastructure.

The manufacturing sector assumes great importance for the Indian economy as it contributes close to 15% of the country's GDP and provides employment to around 12% of its total work force or about 6 million people. Over the years, India has emerged as a prominent global manufacturing player and is the 9th largest manufacturing nation presently. It is a leading producer of some of the key manufactured products such as textiles, chemicals, pharmaceuticals, basic metals, general machinery and equipment, and electrical machinery. India exports manufactured products worth about USD 50 billion to different parts of the world. The 2013 Global Manufacturing Competitiveness Index (GMCI) developed by Deloitte has ranked India the fourth most competitive manufacturing nation among the 38 nations considered for ranking.

The sector has immense growth potential and has been a priority of the Indian government. The National Manufacturing Policy (NMP) announced in year 2011 has charted out some ambitious plans for the sector. It has proposed to drive the sector's growth to 12-14% in the medium term, raise the sector's contribution in national GDP to 25%, and thereby create additional employment opportunity for 100 million people by year 2022. The NMP further plans to attain inclusive growth by imparting appropriate skill sets among the underprivileged unskilled rural and urban work force, increase domestic value addition, enhance technological depth in manufacturing, and make the sector globally competitive.

New Initiatives

Through the Make in India campaign, the government has shown its commitment towards achieving these important goals and convert India's manufacturing sector into the engine of growth for the economy. It has announced several measures to improve the business environment in the country which will further strengthen India's position as an attractive investment destination. New processes have been introduced to cut down bureaucracy, reduce human interface and enhance ease of doing business in India.

With a view to project India as a promising country for investment and as a strong business partner, the Department of Industrial Policy and Promotion (DIPP), Government of India has created a special team - **Invest India**, in association with FICCI, to attend to all investment queries and for providing handholding and liasoning services to domestic and global investors.

New Processes

New de-licensing and deregulation measures have been announced to ensure reduction in complexity across all processes in obtaining clearances for starting and running businesses by following a transparent and efficient system. Some of these measures include:

- The process of applying for Industrial License (IL) and Industrial Entrepreneur Memorandum (IEM) has been made online on 24×7 basis through eBiz, a single window IT platform. Further, services of all Central Government Departments and Ministries are to be integrated with the eBiz portal.
- Process of obtaining environmental clearances has also been made online.
- The Defence products' list for industrial licensing now excludes a large number of parts/components, castings/forgings etc. from the purview of industrial licensing; Similarly dual use items, having military as well as civilian applications (unless classified as defence item) have also been excluded from the list.
- Initial validity period of Industrial License has been increased to three years from two years earlier.
- A maximum timeline of 12 weeks has been finalised for grant of security clearance on Industrial Licence Applications.
- All returns to be filed on-line through a unified form
- A check-list of required compliances to be placed on Ministry's/Department's web portal.
- All registers required to be maintained by the business to be replaced with a single electronic register
- No inspection to be undertaken without the approval of the Head of the Department
- For all non-risk, non-hazardous businesses a system of self-certification to be introduced.
- In case of labour, major amendments have been proposed under various Acts and at the same time Government has announced introduction of a transparent Labour Inspection Scheme for random selection of units for inspection which would end undue harassment of the "Inspector Raj," while ensuring better compliance.

Besides, the government has taken step towards introduction of Goods and Services

Tax (GST) to streamline tax administration, easing land acquisition process, simplifying number of business related compliances and procedures, etc. which will further make business operations easier in the country.

Foreign Direct Investment (FDI) limit has also been revised in some of the sectors in the recent past to stimulate investment. The composite cap of foreign exchange in defence manufacturing as well as insurance sector has been raised to 49% with full Indian management and control through the FIPB route. The revision of cap in the defence sector will enable setting up of a robust Defence Industrial Base (DIB) - allowing for indigenously designed & manufactured Defence & Aerospace products customised to the needs of Indian armed forces, while creating employment opportunities in the country. There has been a relaxation of FDI norms for the construction sector as well, to encourage development of Smart Cities.

New Infrastructure

Improvement of the manufacturing infrastructure has also been a key focus area for the government. In order to boost manufacturing growth, creation of Industrial Corridors by integrating infrastructure and industry has been envisaged. The USD 90 billion Delhi-Mumbai Industrial Corridor (DMIC), which is being developed by the Indian government in partnership and collaboration with the Government of Japan, is one such major project which was announced in year 2006. Under this project, the government is developing Industrial Corridors along the high capacity western Dedicated Freight Corridor (DFC) between Delhi and Mumbai, covering an overall length of 1483km, passing through the States of Uttar Pradesh, NCR of Delhi, Haryana, Rajasthan, Gujarat and Maharashtra.

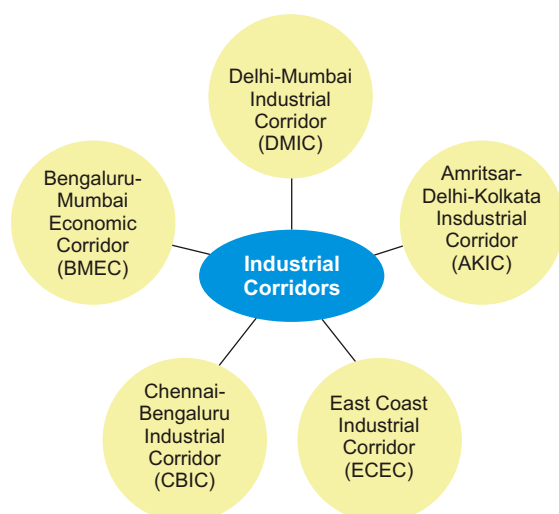
The objective of the project is to create strong economic base in this band with globally competitive environment and state-of-the-art infrastructure to activate local commerce, enhance foreign investments and attain sustainable development. Development of requisite feeder rail/road connectivity to hinterland/markets and select ports along the western coast also forms a part of DMIC. Further, the project proposes to develop new industrial cities as "Smart Cities" and converge next generation technologies across infrastructure sectors. Infrastructure linkages like power plants, assured water supply, high capacity transportation and logistics facilities as well as softer interventions like skill development programme for employment of the local populace are included in the project.

Twenty four manufacturing cities are envisaged in the perspective plan of the DMIC project. In the first phase, seven cities are being developed, one each in the states of Uttar Pradesh, Haryana, Rajasthan, Madhya Pradesh and Gujarat and two in Maharashtra. The manufacturing cities will provide international and domestic investors with a diverse set of vast investment opportunities. The initial phase of the new cities is expected to be completed by 2019.

The government has also conceptualised four other corridors which are Bengaluru-Mumbai Economic Corridor (BMEC); Amritsar-Kolkata Industrial Development Corridor (AKIC); Chennai-Bengaluru Industrial Corridor (CBIC), and East Coast Economic Corridor (ECEC) with Chennai Vizag Industrial Corridor as the first phase of

the project (CVIC). A new 'National Industrial Corridor Development Authority' has been created to coordinate, integrate, monitor and supervise development of these Industrial Corridors. Work on the following corridors is underway:

- Delhi-Mumbai Industrial Corridor: Work on 5 smart cities is in progress namely Dholera, Shendra-Bidkin, Greater Noida, Ujjain and Gurgaon.
- Chennai-Bengaluru Industrial Corridor: Master planning for 3 new Industrial Nodes [Ponneri (TN), Krishnapatnam (AP), Tumkur (Karnataka)] is under progress.
- The East Coast Economic Corridor (ECEC) with Chennai-Vizag Industrial Corridor: Feasibility Study has been commissioned by Asian Development Bank.
- Amritsar-Kolkata Industrial Corridor: Delhi-Mumbai Industrial Corridor Development Corporation Limited (DMICDC) which is selected as the Nodal Agency is conducting the feasibility study.
- North-eastern part of India is planned to be linked with other Industrial Corridors in cooperation with government of Japan.
- New Industrial Clusters will be developed for promoting advance practices in manufacturing.
- 21 Industrial projects have been approved under Modified Industrial Infrastructure Upgradation Scheme with an emphasis on:
 - Use of recycled water through zero liquid discharging systems.
 - Central Effluent Treatment plants.
- 17 National Investment and Manufacturing zones have been approved



Driving Innovation

To encourage innovation, the government has announced the following measures to strengthen the intellectual property regime in the country:

- Creation of 1,033 posts.
- Further upgradation of IT facilities.
- Compliance with global standards.
- Application processes made online.

The National Institute of Design (NID), Ahmedabad, has been notified as an institute of National Importance, and four similar NIDs will be developed in future.

Sectors for Development

To realise the goal of developing a strong manufacturing sector, dedicated efforts are required to boost growth of key industries present in the sector. The government has identified 25 such sectors for providing special thrust, provided in the exhibit below:



Automobiles

Present Status and Growth Prospects

- India is world's seventh-largest automobile producer with average annual production of 17.5 Million vehicles, of which 2.3 Million are exported
- The industry accounts for 7% of India's GDP and employs 19 Million people
- Indian automobile market is estimated to be 3rd largest in the world by 2016 and to account for more than 5% of global vehicle sales
- Total turnover to be USD 145 Billion by 2016
- Passenger vehicles to increase at 16% CAGR during 2013-20
- Two-wheelers and three-wheelers to expand at 9% CAGR 2013-20
- Tractor sales expected to grow at 8-9% CAGR in next five years
- India's car market has potential to grow to 6+ Millions units annually by 2020

Growth Drivers

- Growing working population and expanding middle class to drive demand; GDP per capita in India expected to reach USD 1,869.34 by 2018
- India has world's 12th largest high net worth individuals, growing at ~ 21%
- Increasing disposable incomes in rural agri-sector
- Presence of large pool of skilled and semi-skilled workers and strong educational system
- Favourable government policies like lower excise duties, automotive mission plans, the constitution of National Automotive Testing and R&D Infrastructure Project (NATRiP) etc.
- R&D hub - strong support from government in setting up of NATRiP centres
- Emergence of large automotive clusters in the country - Delhi-Gurgaon-Faridabad in north, Mumbai-Pune-Nashik- Aurangabad in west, Chennai-Bengaluru-Hosur in south and Jamshedpur-Kolkata in east

Investment Opportunities

Passenger vehicles:

- Passenger cars
- Utility vehicles
- Multi-purpose vehicles

Two-wheelers:

- Mopeds
- Scooters
- Motorcycles (significant opportunities exist in rural markets)

Three-wheelers:

- Passenger carriers
- Goods carriers

Commercial vehicles:

- Light commercial vehicles
- Medium and heavy commercial vehicles

Low cost electric vehicles:

- Huge demand for low-cost electric vehicles suited for safe short-distance urban commutes (averaging 50-100 km/trip)
- Electric vehicles sales to be 6-7 Million units by 2020

Automobile Components

Present Status and Growth Prospects

- Sector turnover touched USD 39.7 Billion in 2012-13, expected to reach USD 115 Billion by 2020-21
- Auto components exports increased at 17% CAGR during 2008-13, reached USD 9.7 Billion in 2012-13

Growth Drivers

- India expected to be fourth largest automobiles producer globally by 2020
- Indian automobile market estimated to be 3rd largest in world by 2016 and to account for more than 5% of global vehicle sales
- Growing working population and expanding middle class expected to drive demand for automobiles
- Presence of large pool of skilled and semi-skilled workforce and strong educational system
- Increased investments in R&D operations and laboratories, to conduct activities such as analysis, simulation and engineering animations
- Reduction in excise duties in motor vehicles sector to spur demand for auto components
- Growth of global OEM sourcing from India and increased indigenisation of global OEMs turning India into a preferred designing and manufacturing base

Investment Opportunities

Engine & Engine Parts:

- Outsourcing to gain traction in the short to medium term

Transmission & Steering Parts:

- Replacement market share in sub-segments such as clutches is likely to grow due to rising traffic density

Suspension & Breaking Parts:

- Segment estimated to witness high replacement demand, with players maintaining a diversified customer base in replacement and OEM segments besides the exports

Metal Parts:

- Manufacturers expected to benefit from growing demand for sheet metal parts, body & chassis, fan belts, pressure die castings, hydraulic pneumatic instruments in the two-wheeler segment

National Mission for Electric Mobility (NMEM) 2020:

- Government launched National Mission for Electric Mobility (NMEM) 2020 in 2013 to foster adoption of electrical vehicles (including hybrid vehicles), and their manufacture in India
- Demand for low cost hybrid and electric vehicles suitable for short-distance urban commutes (averaging 50-100 kms per trip) estimated to grow substantially
- Sales for such vehicles to be 6-7 Million units by 2020

Aviation

Present Status and Growth Prospects

- Indian aviation market is the ninth largest civil aviation market in the world and projected to be the 3rd largest market by 2020
- More than 85 international airlines operate in India and 5 Indian carriers connect over 40 countries
- Domestic Passenger traffic has grown at CAGR - 7.71% (FY 2006-13); to be 209 Million by FY 2017
- International Passenger traffic has grown at CAGR - 8.96% (FY 2006-13); to be 60 Million by FY 2017
- Freight traffic has grown at CAGR - 5.2% (FY 2006-13); 2.19 Million Tonnes in FY 2013
- Indian aviation sector likely to see investments totalling USD 12.1 Billion during 2012-17; USD 9.3 Billion is expected to come from private sector
- Draft civil aviation policy formulated to develop stable, transparent, predictable and investor-friendly regulatory regime for the civil aviation sector with a mechanism for time-bound resolution of issue

Growth Drivers

- Indian aviation experiencing dramatic growth, from emergence of LCC/new carriers to growing middle class and growth in business and leisure travel
- India is one of the least penetrated air markets in the world with 0.04 trips per capita per annum as compared to 0.3 in China and more than 2 in the USA
- India's middle income population expected to increase from 160 Million in 2011 to 267 Million by 2016
- Greater focus on infrastructure development, increasing liberalisation - Open Sky Policy, Airports Authority of India (AAI) driving modernisation of airports, Air and Navigation Systems
- Large scale collaborations/M&A deals signed - Etihad Airways & Jet Airways; Tata Group & Singapore Airlines, Tata Group & AirAsia
- Government planning to develop 200 low-cost airports in next 20 years to provide affordable air connectivity to remote and interior areas, North Eastern Region and Tier-II & III cities of India
- 50 cities identified under first phase of the development

Investment Opportunities

Greenfield airport projects:

- Greenfield airport at Navi Mumbai, Mopa (Goa) and brownfield airports of AAI and 50 airports under low cost model to be developed, including under PPP
- Private players can exploit growth potential of civil aviation in India by investing in development of low cost airports including infrastructure for Air Navigation Services, etc.

Airport Modernization projects:

- Indian aerospace market offers long term opportunities for augmenting and modernizing existing airports
- AAI plans to spend USD 1.3 Billion on non-metro projects between 2013 and 2017, focusing on modernisation and upgradation of airports

MRO (maintenance, repair and overhaul) services:

- Demand for MRO facilities increasing with growth in aviation
- 300 business jets, 300 small aircraft and 250 helicopters expected to be added to current fleet in next 5 years

Airspace & air traffic management system:

- Security & surveillance services
- Ground handling services
- Air cargo services

Biotechnology

Present Status and Growth Prospects

- India is amongst top 12 biotech destinations in the world and ranks third in Asia-Pacific region
- Indian bio-economy grew to USD 4.3 Billion by end 2013, up from USD 530 Million in 2003
- Bio-pharma exports reached USD 2.2 Billion in 2013, accounting for 64% of biotech industry revenues
- Indian biotech industry to grow at average growth of 30% and reach USD 100 Billion by 2025
- Market size of the sector expected to rise up to USD 11.6 Billion by 2017
- Indian companies manufacture an increasingly wide range of biopharmaceuticals
- Vaccines are the fastest growing sector in Biopharmaceuticals industry. India is the largest producer of recombinant Hepatitis B vaccine
- The growth of the biotech sector is concentrated in relatively small number of companies and biotech clusters.
- India has potential to become major producer of transgenic rice and several genetically modified (GM) or engineered vegetables

Growth Drivers

- Increasing investments, outsourcing activities, exports and government's focus on the sector to drive growth
- Government aims to spend USD 3.7 Billion on biotechnology between 2012-17
- India has strong pool of scientists and engineers
- India offers cost-effective manufacturing capabilities
- India has set up national research laboratories, centres of academic excellence in biosciences, several medical colleges, educational and training institutes offering degrees and diplomas in biotechnology, bio-informatics and biological sciences
- Rich Biodiversity: India's human gene pools offer an exciting opportunity for genomics
- Department of Biotechnology has been instrumental in providing impetus to the sector. The department has forged creation of biotech parks/clusters in various parts to facilitate product development, research and innovation, industry partnerships and establishment of institutional infrastructure
- Biotech parks offer investors incubator facilities, pilot plant facilities for solvent extraction and laboratory and office spaces

Investment Opportunities

Biotech Products:

FDI investment upto 100% is permitted via the automatic route

- Outsourcing to India projected to spike up after discovery and manufacture of formulations
- Outsourcing to lower cost economies results in cost arbitrage of more than 50% for global players
- The R&D sector has huge potential; many opportunities have been created with a number of foreign companies investing in the sector

Generic products:

- India constitutes around 8% of total global generics market by volume, indicating huge untapped opportunity in the sector

New Products:

- Hybrid seeds - Genetically Modified seeds

Chemicals

Present Status and Growth Prospects

- India is third largest producer of chemicals in Asia and sixth by output, in the world
- Total production of Indian chemicals industry was 19,308 Thousand Metric Tonnes in 2013-14
- Chemicals industry accounts for 2.11% of the nation's GDP
- Estimated size of the market is USD 144 Billion
- Current production of polymers in India is around 9 Million Tonnes with imports of around 2.8 Million Tonnes
- India is currently the world's third largest consumer of polymers and third largest producer of agro-chemicals
- Polymer demand is expected to grow by 8-10%
- Polymers and agro-chemicals industries in India present immense growth opportunities

Growth Drivers

- Large population, dependence on agriculture, and strong export demand are key growth drivers for the industry
- Global shift towards Asia as world's chemicals manufacturing hub
- Per capita consumption of chemicals in India is lower as compared to western countries
- Rise in GDP and purchasing power generates huge growth potential for the domestic market
- Focus on new segments such as specialty and knowledge chemicals
- Presence of enabling factors like low-cost manufacturing and pool of skilled science professionals
- Presence of world-class engineering and strong R&D capabilities

Investment Opportunities

Agro-Chemicals:

- India is third largest producer of agro-chemicals globally and exports about 50% of the production.
- Exports likely to remain a key component of the industry

Specialty Chemicals:

- Specialty chemicals market witnessed 14% growth in last five years; market size expected to reach USD 70 Billion by 2020
- Growth in plastic demand to drive consumption of specialty chemicals in future
- Immense growth potential owing to growing construction industry and adoption of advanced coating, ceiling and polymer-based reinforcing material in construction as well as plastics, paints and coatings for the automotive sector

Colourant Chemicals:

- Indian colourant industry valued at USD 6.8 Billion, with exports accounting for nearly 75%
- India accounts for 16% of global industry, the share is expected to increase further.
- Other segments include petrochemicals, bio-pharma, bio-agri, and bio-industrial products

Construction

Present Status and Growth Prospects

- Indian construction industry is valued at over USD 126 Billion
- Construction activities contribute more than 10% of India's GDP and employs more than 35 Million people
- It accounts for second highest inflow of FDI
- 50% of construction activity demand in India originates from infrastructure sector; rest from industrial activities, residential and commercial development etc.
- As per industry estimates, the Indian real estate market was estimated at ~ USD 78.5 Billion in 2013 and is expected to grow to approximately USD 140 Billion by 2017

Growth Drivers

- Investment of USD 1,000 Billion is projected for infrastructure sector until 2017, 40% of which is to be funded by private sector; 45% of infrastructure investment to be funnelled into construction activity and 20% set to modernise construction industry
- India has estimated urban housing shortage of 18.8 Million dwelling units; housing shortage in rural India estimated at 47.4 Million units in 2012
- As per Indian Census, 2011, urban population increased to 377 Million, expected to increase to 590 Million people by 2030
- According to FICCI-EY Real Estate Report 2013, India's real estate requires USD 42 Billion (excluding housing for economically weaker sections) investments by 2015. Residential real estate to require investment of USD 29 Billion
- Government to launch new urban development mission to help develop 500 cities, cities with population of more than 100,000 and cities of religious and tourist importance. These cities to be supported to harness private capital and expertise through PPPs, to bolster infrastructure and services in next 10 years

Investment Opportunities

- Construction development in residential, retail, commercial and hospitality sectors
- Technologies and solutions for smart sustainable cities and integrated townships
- Technologies for promotion of low cost and affordable housing
- Green building solutions
- Sustainable and environmentally friendly building materials
- Training and skill development of construction sector workers
- Smart cities
- Urban water supply, urban sewerage and sewage treatment

Defence Manufacturing

Present Status and Growth Prospects

- India has third largest armed forces in the world
- India is one of the largest importers of conventional defence equipment and spends ~ 40% of its total defence budget on capital acquisitions
- About 60% of defence requirements are met through imports
- Allocation for defence in the last budget was ~USD 37.3 Billion
- India has some of the basic ingredients like large talent pool, frugal engineering skill-sets and is relatively better placed geopolitical vis-à-vis other countries
- Make in India Initiative is an attractive proposition to FOEMs to tie up with Indian Partners for innovation, product development and commercialisation.

Growth Drivers

- Defence Production Policy, 2011 to encourage indigenous manufacture of defence equipment
- Large numbers of parts/components, castings/forgings etc. excluded from purview of industrial licensing in the new Defence products list for industrial licensing articulated in June 2014
- MAKE procedure, which aims to promote R&D in the industry with support from government and placement of orders (if R&D effort is successful), revised to make it attractive and unambiguous for the private sector
- Country's extensive modernization plans, an increased focus on homeland security and India's growing attractiveness as a defence sourcing hub
- High government allocation for defence expenditure.
- Relaxed FDI limit will attract foreign partners to invest in India
- Government vision to export defence products/platforms to friendly nations widens the customer base for manufacturing companies.

Investment Opportunities

Defence products manufacturing:

- Imports cater to defence requirements largely
- Scope for foreign original equipment manufacturers to enter into strategic partnerships with Indian companies

Defence offsets:

- Opportunities to avail defence offset obligations to the tune of approximately INR 250 Billion during the next 7-8 years
- Offset policy (which stipulates mandatory offset requirement of minimum 30% for procurement of defence equipment in excess of INR 3 Billion) introduced in the capital purchase agreements with foreign defence players
- Offset opportunities are present in Manufacturing followed by design and engineering.
- Major beneficiaries of the offsets will be the MSME sector.

Supply chain sourcing opportunity

- The relaxed licencing will help largely the supply chain, especially those who manufacture dual use products/components.
- Offset policy (which stipulates mandatory offset requirement of minimum 30% for procurement of defence equipment in excess of INR 3 Billion) has been introduced in the capital purchase agreements with foreign defence players.

Electrical Machinery

Present Status and Growth Prospects

- Electrical equipment industry was worth USD 24 Billion in 2012-13
- Market expanded at a CAGR of 10.5% over 2007-12
- Exports increased to touch USD 4.9 Billion in 2013-14
- Estimated output by 2022 is USD 100 Billion
- Capacity creation in sectors such as infrastructure, power, mining, oil and gas, refinery, steel, automotive and consumer durables driving demand in engineering sector
- Sector enjoys comparative advantage in terms of manufacturing costs, market knowledge, technology and creativity

Growth Drivers

- Nuclear capacity expansion to provide business opportunities to electrical machinery industry
- Rapid increases in infrastructure investment and industrial production to fuel growth
- Incentives for capacity addition in power generation to increase demand for electrical machinery
- Indian manufacturers becoming more competitive with respect to product designs, manufacturing and testing facilities
- Presence of large pool of human resources and advancements in technologies
- Increasing scope for direct exports to neighbouring countries
- Investments in research and development in electrical machinery industry amongst the largest in India's corporate sector

Investment Opportunities

Generation Machinery: Boilers, Turbines, Generators

- By 2022, generation equipment industry in India is projected to grow to USD 25-30 Billion; estimated size of the industry is USD 6.7 Billion in 2012-13

Transmission Machinery:

- By 2022, T&D equipment market in India is expected to grow to USD 70-75 Billion from USD 17.3 Billion in 2012-13

Electronic System

Present Status and Growth Prospects

- Indian ESDM industry was estimated at USD 68.31 Billion in 2012 and expected to be USD 94.2 Billion by 2015 with a 9.88% CAGR between 2011-15
- Sector comprises Electronic Products, Electronic Components, Semiconductor Design and Electronics Manufacturing Services (EMS)
- Demand generated due to government schemes like the National Knowledge Network (NKN), National Optical Fibre Network (NOFN), tablets for Education sector, digitisation policy and various other broadband schemes
- 65% of current demand for electronic products met by imports
- Indian consumer electronics market to become USD 29 Billion by 2020
- Electronic Market in India by 2020:
 - Telecom Equipment (USD 34 Billion).
 - Laptops, Desktops, Tablets (USD 34 Billion).
 - LED (USD 35 Billion).
 - Consumer Electronics (USD 29 Billion).
 - Set Top Boxes (USD 10 Billion).
 - Automotive Electronics (USD 10 Billion).
 - Medical Electronics (USD 8.5 Billion).

Growth Drivers

- Developed Electronic Manufacturing Services (EMS) industry to be significant contributor to industry's development
- India has third largest pool of scientists and technicians in the world
- Skilled manpower available in Semiconductor Design and Embedded Software
- Strong design and R&D capabilities in auto electronics and industrial electronics
- Global demand to reach USD 94.2 Billion by 2015
- Rising manufacturing costs in alternate markets
- Various government policies like electronics manufacturing clusters scheme, and skill development scheme to boost growth
- 2 government-driven incentives - National Knowledge Network and National Optical Fibre Network

Investment Opportunities

- Electronics Manufacturing Clusters
- Semiconductor Wafer Fabrication (FAB)
- Electronic Components
- Semiconductor Design
- Electronics Manufacturing Services (EMS)
- Telecom products
- Industrial/ Consumer electronics

Food Processing

Present Status and Growth Prospects

- India's food processing sector ranks fifth in the world in exports, production and consumption
- Industry amounted to INR 845.22 Billion in 2012-13 and contributed 9.8% of GDP
- Grown annually at 8.4% for the last 5 years, up to 2012-13
- Food accounts for ~39% of total consumption expenditure of households in India; total expenditure on food by households in 2012-13 was INR 11 Trillion
- Processed food exports and related products rising steadily, main destinations are Middle East and Southeast Asia
- 42 mega food parks set up in PPP with an investment of INR 98 Billion
- Extensive network of food processing training, academic and research institutes spans the country
- 121 cold chain projects set up to develop supply chain infrastructure

Growth Drivers

- Liberalization, growth of organized retail in India, rising income levels and growing middle class; 1/3rd of population to live in urban areas by 2020
- India emerging as sourcing hub of processed food - due to large agricultural sector, abundant livestock and cost competitiveness
- Consumption in India driven towards packaged and ready-to-eat foods
- Awareness and concern for wellness and health, for high protein, low-fat, wholegrain, organic food

Investment Opportunities

- Fruits and vegetables: preserved, candied, glazed and crystallized fruits and vegetables
- Processed fruits and vegetables: juices, jams, jellies, purees, soups, powders, dehydrated vegetables, flakes, shreds and ready-to-eat curries
- Food preservation by fermentation: wine, beer, vinegar, the preparation of yeast, alcoholic beverages
- Beverages: fruit-based, cereal-based
- Dairy: liquid milk, curd, flavoured yoghurt, processed cheese, cottage cheese, swiss cheese, blue cheese, ice cream, milk-based sweets
- Food additives and nutraceuticals
- Confectionery and bakery: cookies and crackers, biscuits, breads, cakes and frozen dough
- Meat and poultry: eggs, egg powder, cut meats, sausages, other value added products
- Fish, seafood and fish processing: processing and freezing units
- Grain processing: oil milling sector, rice, pulse milling and flour milling sectors
- Food processing equipment: canning, dairy and food processing, specialty processing, packaging, frozen food/refrigeration and thermo-processing
- Consumer food: packaged food, aerated soft drinks, packaged drinking water
- Spice pastes

IT and BPM

Present Status and Growth Prospects

- IT-BPM sector constitutes 8.1% of India's GDP, accounts for 38% of India's services exports
- Largest private sector employer - delivering 3.1 Million jobs
- Sector projected to touch USD 118 Billion by 2014 and expected to reach USD 225 Billion by 2020
- Exports from the IT-BPM industry expected to reach USD 86Billion in 2014
- India's IT industry amounts to 7% of global market, largely due to exports, IT Services exports are USD 52 Billion.
- Indian IT industry has saved clients USD 200 Billion in the past five years
- The BPM industry exports are USD 23 Billion

Growth Drivers

- Emerging geographies and verticals, non-linear growth due to platforms, products and automation
- Revival in demand for IT services from US and Europe
- Increasing adoption of technology and telecom by consumers and focused government initiatives - leading to increased ICT adoption
- High value client additions bigger than USD 1 Million -highest in the last 5 years, registering 13.5% growth
- Emerging verticals (retail, healthcare, utilities) driving growth above 14%
- SMAC (social, mobility, analytics, cloud) market expected to grow to USD 225 Billion by 2020
- USD 1.6 Billion spent annually on training workforce and growing R&D spend
- National Optical Fibre Network (NOFN) laid down in phases to connect 250,000 gram panchayats in the country

Investment Opportunities

IT Services solutions and services around SMAC

- IS outsourcing
- IT consulting
- software testing

BPM knowledge services

- Data analytics
- Legal services
- Business Process as a Service (BPaaS)
- Cloud-based services

Software product companies

Shared service centres

Engineering and R&D

- Telecom & semiconductors

Leather

Present Status and Growth Prospects

- Total production of Indian leather industry stands at USD 11 Billion
- Exports have grown from USD 1.42 Billion in 1990-91 to USD 6 Billion in 2013-14
- India produces 2 Billion sq. feet of leather, accounting for 10% of the world leather requirements
- Domestic market expected to double in next five years
- Exports projected to grow at 24% per annum over next five years
- Sector has comparative advantages in cost of production and labour costs
- With 55% of workforce below age of 35, Indian leather industry has one of the youngest and most productive workforces

Growth Drivers

- Ready availability of leather, abundance of essential raw materials and rapid strides in the areas of capacity modernization and expansion, skill development and environment management to be key growth drivers
- Indian government initiated skill development and skill upgradation measures
- Under National Skill Certification and Monetary Reward Scheme of National Skill Development Corporation, financial assistance given for training and certification of existing and new workers
- Human Resources Development sub-scheme under the Indian Leather Development Programme (ILDP) implemented by Department of Industrial Policy and Promotion, provides skill development training to unemployed for leather industry placement
- 1,44,000 workers to be trained annually
- Footwear Design and Development Institute (FDDI) provides skilled manpower in leather industry; four new branches are set up in addition to 53 training centres across the country including eight branches

Investment Opportunities

- Leather identified as special focus sector under National Manufacturing Policy released in Nov. 2011
- Mega Leather Clusters (MLCs) sub-scheme notified by DIPP; aims to create new production centres for leather industry with required infrastructure and support services

Media and Entertainment

Present Status and Growth Prospects

- Total market size of the Indian entertainment industry stood at INR 918 Billion in 2013, growing by 11.8% over 2012, and industry to reach INR 1785.8 Billion in 2018
- Size of television industry in India was estimated at INR 417 Billion in 2013, with projected 16% CAGR between 2013-18
- India is world's third largest TV market, after China and the US, with 161 Million TV households
- By 2018, digital advertising projected to have the highest CAGR of 27.7%, while all other sub-sectors are expected to grow at CAGR between 9% and 18%

Growth Drivers

- TV penetration in India is ~65% and expected to reach 72% by 2017, digitisation of cable TV in India, set for four phases, to be completed by end of 2014, direct-to-home (DTH) subscriptions growing rapidly, driven by content innovation and product offerings
- Growth in number and spread of multiplexes
- Increasing liberalization and tariff relaxation
- Digitisation of cable distribution to improve profitability and ease of institutional finance
- Rising incomes and evolving lifestyles driving aspirational products and services demand
- Higher penetration and rapidly-growing young population coupled with increased usage of 3G and portable devices to augment demand

Investment Opportunities

Television:

- Television projected to garner half of media and entertainment pie by 2015 (as addressable digitisation is expected to cover the entire country by then)
- Television advertisement revenue expected to witness robust growth and increase from INR 125 Billion in 2012 to INR 253 Billion by 2018

Print:

- Newspapers and niche magazines likely to drive industry growth
- Accelerated growth is forecast in regional print and local news segments

Films:

- Size of Indian film industry expected to reach INR 219.8 Billion by 2018, up from INR 125.3 Billion in 2013
- Joint productions promoted, co-production agreements signed with Italy, Germany, Brazil, UK, France, New Zealand, Poland, Spain and Canada.

Radio:

- Size of Indian radio industry expected to reach INR 33.6 Billion by 2018, up from INR 8.4 Billion in 2008

Music:

- Size of music industry expected to grow to INR 17.8 Billion by 2018, growing at a CAGR of 13.2% over the period 2013-18
- Mobile VAS and arrival of 3G likely to lead to surge in paid digital downloads

Animation:

- Indian animation industry was worth INR 39.7 Million in 2013 and expected to expand at 15.9% CAGR to INR 82.9 Billion by 2018

Mining

Present Status and Growth Prospects

- India has 301.56 Billion Tonnes coal reserves as of April 2014; coal production stood at 540 Million Tonnes and 557.7 Million Tonnes in 2012 and 2013, respectively
- Power sector accounts for large share of aluminium and coal consumption
- India has world's sixth largest bauxite reserve base and fifth largest iron ore base, accounting for 5% and 8% of world production respectively
- India is fourth largest iron ore producer globally
- Crude steel production increased at 8.2% CAGR between 2008–2011 and touched 76.7 Million Metric Tonnes; India to be second largest steel producer by 2015
- Double digit growth expected in minerals like manganese, lead, copper, alumina

Growth Drivers

- India has vast minerals potential with mining leases granted for longer durations of 20 to 30 years
- Demand for metals and minerals to grow substantially over next 15 years
- India's strategic location enables convenient exports
- India's per capita steel consumption is four times lower than the global average; huge untapped potential
- Growth in infrastructure and automobiles to generate demand for power and steel; to provide thrust to coal and iron ore demand
- Residential and commercial building industry growth to boost demand for iron and steel

Investment Opportunities

Iron & Steel

- Range of products: hot rolled parallel flange beams and columns rails, plates, coils, wire rods, and continuously cast products such as billets, blooms, beams, blanks, rounds and slabs and metallics and ferro alloy

Coal

- Coal market consists of primary coal such as anthracite, bitumen and lignite

Aluminium

- Aluminium segment includes alumina chemicals, primary aluminium, aluminium extrusions and aluminium rolled products

Base Metals

- Base metals market consists of lead, zinc, copper, nickel and tin

Precious Metals & Minerals

- Precious metals market includes gold, silver, platinum, palladium, rhodium and diamonds

Oil and Gas

Present Status and Growth Prospects

- India is the 2nd largest refiner in Asia - a refining hub with 22 refineries
- At the end of 2013, India had 215.066 MMTPA of refining capacity
- India is the 4th largest consumer of crude oil and petroleum products in the world (2013)
- India is the 6th largest petroleum product exporter
- Oil imports constitute more than 80% of India's total domestic oil consumption
- Primary energy demand in India to increase threefold by 2035 to 1,516 Million Tonnes of Oil Equivalent from 563 Million Tonnes of Oil Equivalent in 2012

Growth Drivers

- Government preparing to announce the 10th round of bidding for E&P blocks
- 60% of 28,000 MMT of estimated reserves yet to be harnessed
- Investments worth USD 70 Billion expected across oil and gas value chain during 2012-17
- Country's natural gas pipeline network amounted to over 15,340 kms in 2013. About 10,000 km of gas pipelines with a capacity to transport 250 MMSCMD of natural gas are expected to be commissioned by 2016-17
- New pricing guidelines for domestically produced natural gas approved to incentivize exploration and production of natural gas in the country
- To facilitate greater competition in the auto fuel retail segment, diesel prices have been deregulated and market-determined at both Retail and Refinery gate level for all consumers
- Gas Initial is in place for Clean Development Mechanism (CDM) established at 10 Trillion Cubic Feet (TCF)
- Government unveiled plans to add 91 Million barrels to crude oil capacity to protect India from supply disruptions by 2017

Investment Opportunities

- Investment target of INR 6-7 lakh crore with a target of indigenisation of 50% for upstream sector
- Out of 9 newly built LNG ships that are to be chartered by GAIL in the next five years, 3 ships have to be built in Indian shipyards
- To boost manufacturing in the North East Region (NER), an incentive of 40% subsidy on natural gas price in NER has been extended
- Targeted fiscal measures - interest subvention, long-term funding- for manufacturing clusters from Oil Industries Development Cess of about INR 10000 crore collected every year, subject to provisions in BE 2015-16
- Multi-pronged approach to improve access to overseas technology (investment in R&D/ Collaboration with global players)

UPSTREAM

Shale:

- India has technically recoverable shale gas resources of nearly 96 Trillion Cubic Feet.

Underground Coal Gasification:

- Coal gasification identified as one of the end uses under the government's captive mining policy

Coal Bed Methane (CBM):

- Estimated resources of 2600 billion cubic meters (BCM) or 91.8 TCF. Impetus to boost CBM production & exploitation

E&P Services and Equipment Manufacturing:

- An area of 1.50 mn sq km awarded (48% of the total sedimentary area)
- In the upstream oil business, more than 60% of the E&P expenditure is on specialised Oil Field drilling & services.
- Deep water and ultra-deep water oil and gas exploration activity to be explored in future to boost production; will create opportunities for strategic investors having relevant technical expertise and financial strength
- Thrust to set up dedicated manufacturing zones/clusters catering to Oil Field Services (Ship-building/ Offshore platform building/ rigs)

Natural Gas

- Government's focus to expand the natural gas pipeline network and complete the National Gas Grid
- Opportunities for construction of LNG ships and terminals
- City gas distribution sector offers huge opportunities. Petroleum and Natural Gas Regulatory Board allows incentives to authorized entities:
 - Infrastructure exclusivity to authorized entity for a period of 25 years
 - Exclusivity for natural gas marketing activity for a 5 year period
 - For incumbents, marketing exclusivity extends to a period of 3 years

Pipeline Transportation

- Significant opportunities for growth in both crude and petroleum product pipelines
- In India, only 35% of product movement is through pipelines as compared to 60% in advanced economies

Refining Sector

- Expansions planned for developing export-oriented infrastructure, including product pipelines and export terminals
- New grassroots refineries coming up in the future

Downstream Retailing

- Fuel pricing reforms, have thrown open opportunities for the private sector player to re-enter and compete with the state-owned Oil Marketing Companies

Storage Infrastructure

- Strong thrust on the infrastructure of storage tanks within the country.

Pharmaceuticals

Present Status and Growth Prospects

- Globally, the Indian pharmaceutical industry is ranked 3rd largest in volume terms and 10th largest in value terms.
- India's pharmaceuticals industry accounts for 2.4% of global pharma industry by value and 10% by volume
- India is sixth largest market globally in terms of size
- India's drugs and pharmaceuticals industry is expected to grow at a compound annual growth rate (CAGR) of 14% to reach a turnover of INR 2.91 Trillion (US\$ 47.06 Billion) by 2018.
- India exports pharmaceutical products to more than 200 countries. Pharmaceutical exports are expected to cross the INR 1 Trillion (US\$ 16.17 billion) mark this year.
- Generic drugs account for 20% of global exports in terms of volume, India is the largest provider of generic medicines globally
- India's cost of production lower than the US and half of Europe
- India possesses skilled workforce with high managerial and technical competence
- Expected to rank amongst top three pharmaceutical markets by 2020
- Industry revenues to expand at 12.1% CAGR during 2012-20 and reach USD 45 Billion
- Generics market to grow to USD 26.1 Billion by 2016 from USD 11.3 Billion in 2011
- OTC drug market to grow to USD 6.6 Billion by 2016
- Healthcare sector expected to grow to USD 250 Billion by 2020 from USD 65 Billion currently

Growth Drivers

- Between 2011 and 2016, patent drugs worth USD 255 Billion estimated to go off-patent - huge surge in generic product
- Product patents introduction in India to see launch of patented drugs in the country
- Rising lifestyle diseases in India expected to create demand
- Over USD 200 Billion to be spent on medical infrastructure in the next decade
- Rising levels of education set to increase acceptability of pharmaceuticals
- Economic prosperity likely to improve affordability for generic drugs
- India's patient pool expected to increase over 20% in next 10 years
- Pharma companies increased spending to tap rural markets and develop better infrastructure
- Approval time for new facilities drastically reduced
- OTC drugs expected to be readily available

Investment Opportunities

Generics and Patented Drugs manufacturing:

- India expected to be third largest global market for active pharmaceutical ingredients by 2016, with 7.2% increase in market share

Contract Research and Manufacturing Services industry (CRAMS)

- Estimated to be USD 8 Billion in 2015, from USD 3.8 Billion in 2012

Formulations manufacturing:

- Double-digit growth expected over the next five years

Ports

Present Status and Growth Prospects

- India has over 7500 kilometres of coastline with 12 major and 60 operational non-major ports
- 90% of country's trade by volume and 70% by value moved through maritime transport
- 12 major ports in India handle 58% of cargo traffic
- Cargo traffic increased by 3.9% CAGR at major ports and 13.7% at non-major ports during 2007-12
- Cargo-handling capacity increased to 800 Million Metric Tonnes in February 2014, from 575 Million Metric Tonnes in 2009.
- Cargo capacity to increase to 2289 Million Metric Tonnes by 2017 from 1235 Million Metric Tonnes in 2012
- Container demand to increase to 21 Million T.E.U by 2017, from 6.5 Million T.E.U in 2012

Growth Drivers

- Increasing trade activities and private participation in port infrastructure development
- Rising cargo traffic and increase in number of non-major ports
- Existing ports investing on improving draft depth
- Focus on development of terminals that deal with a particular type of cargo, for eg. LNG.
- SEZs developed in close proximity to several ports - comprising coal-based power plants, steel plants and oil refineries
- Government evaluating prospects for shipbuilding facilities in coastal states like Gujarat, Kerala, Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu.
- Dedicated INR 1,500 crore funds being set up by EXIM Bank of India to provide finance for construction, refitting and repair of ships

Investment opportunities

Port development and Port-led Development:

- Government planning to launch 'Prime Minister Jal Marg Yojna' to develop strong inland waterways network, set up dry and satellite ports, and converting riverways into waterways.
- Government formulating bill to allow converting any river into waterway to enable goods transportation through them
- Government has conceived 'Sagarmala', an ambitious project for maritime states, working out to integrate components viz. port facilities, coastal ferry services, tourism infrastructure and inland water transportation and focusing on Port Towns/Cities.

- Project envisages port development, and port-led development; would include ports, SEZs, and rail, road, air and waterway connectivity with the hinterland, including linkages of cold storage and warehousing facilities

Shipbuilding:

- Government is encouraging shipbuilding industry in tune with Make in India Programme
- Projects require expertise from foreign shipyards

Ship repair facilities:

- Demand for ship repair services to increase, providing opportunities to build new dry docks and set up ancillary repair facilities

Port support services:

- Operation and maintenance services such as pilotage, dredging, harbouring and provision of marine assets such as barges and dredgers

Railways

Present Status and Growth Prospects

- Indian Railways network spanning more than 64,600 kms, is world's third-largest rail network
- The largest passenger carrier and the fourth-largest rail freight carrier in the world
- Passenger and freight traffic volumes increasing steadily; passenger and freight traffic grew at 5.2% CAGR and 4.9% CAGR during 2008-13
- 100% FDI in the railway infrastructure segment allowed recently

Growth Drivers

- Ministry of Railways to construct six high-capacity, high-speed dedicated freight corridors along the Golden Quadrilateral and its diagonals.
- Development of identified stations to international standards with modern facilities and passenger amenities on the lines of newly developed airports
- To modernize logistics operations by setting up logistic parks that provide for warehousing, packaging, labelling, distribution, door-to-door delivery and consignment tracking
- During the period of 2012-17, Plan for Mass Rapid Transit Systems (MRTS) projects during 2012-17 through PPP model
- Indian Railways aims to award projects worth USD 1,000 Billion through the PPP route
- Aims to boost passenger amenities by involving PPP investments in provision of foot-over bridges, escalators and lifts at all major stations
- Last-mile connectivity to boost business activity in and around ports and mines proposed through formation of special purpose vehicle (SPV) companies under the PPP model
- Indian Railways aims to involve private equity to provide passenger amenities such as battery-operated carts to facilitate movement for senior citizens and differently abled, at stations

Investment Opportunities

Investment opportunities exist in the following segments:

- High speed train projects.
- Railway lines to and from coal mines and ports.
- Projects relating to electrification, high-speed tracks and suburban corridors.
- Dedicated freight corridors.
- The re-development of railway stations.

- Power generation and energy-saving projects.
- Freight terminals operations.
- Setting up of wagon, coaches and locomotive units.
- Gauge conversion.
- Network expansion.

Renewable Energy

Present Status and Growth Prospects

- India's total power installed capacity stands at 245 GW, renewable energy capacity is 31.70 GW (March 2014)
- Wind energy accounts for 70% (21.1 GW); India is world's fifth largest wind energy producer
- India to increase solar power capacity to 100 GW by 2020; USD 100 billion worth investment required over 5 years ending 2019
- Major programme to be launched to train 50,000 people to create Solar Army
- Rooftop programme included as part of house loan and home improvement loan by banks

Growth Drivers

- Government actively promoting adoption of renewable energy resources, offering various incentives,
 - generation- based incentives (GBIs)
 - capital and interest subsidies
 - viability gap funding
 - concessional finance
 - fiscal incentives
- Renewable energy becoming cost-competitive compared to fossil fuel-based generation
- Solar module prices declined by 80% and wind turbine prices declined by more than 25% since 2008
- Indian Renewable Energy Development Agency (IREDA) - a dedicated financial institution established to provide financial assistance for renewable energy projects
- Government to launch National Wind Energy Mission
- Development of 'Ultra Mega Solar Power Projects' (UMSP) and 'Solar Parks' announced with an investment of INR 1,000 crores
- 25 solar parks, each with a capacity of 500 to 1000 MW to be established
- Large scale solar plants or UMSP up to 4000 MW capacity to be developed in desert lands

Investment Opportunities

Wind Energy

- Vast untapped potential of 102.8 GW compared to present capacity of 21.1 GW

Small hydro

- Estimated potential of 19.7 GW compared 3.8 GW present capacity

Bio-power (including biomass and bagasse co-generation)

- Estimated potential of 22.5 GW compared to 4.1GW capacity presently

Solar power

- Plan for 100 GW capacity increase compared to 1.7 GW present capacity

Roads and Highways

Present Status and Growth Prospects

- Transport sector constitutes 6% of country's GDP and 70% of roads sector
- India has road network of 4.86 Million kms, second largest in the world
- Road handles more than 60% of freight and 90% of passenger traffic in India
- Roadways and bridge infrastructure value to grow at 17.4% CAGR between 2012-17, to reach USD 10 Billion
- National Highways length to grow from 92,850 kms in 2013-14 to 100,000 kms by 2017
- 8,470 kms of National Highways to be improved during 2014-15
- NHAI aims to award 5,000 kms of projects in 2014-15 and another 400 kms by the Ministry of Road Transport & Highways (MoRT&H) directly
- Investment through PPP expected to be USD 31 Billion for national highways in next 5 years

Growth Drivers

- GoI to develop 64,340 kms of National Highways under various programmes
- Widening, upgradation and rehabilitation of 47,054 kms of National Highways under a USD 60 Billion, seven-phase programme of the National Highway Development Project (NHDP)
- Rise in two-wheeler and four-wheeler vehicles, increasing freight traffic, strong trade and tourist flows between states to augment growth

Investment Opportunities

Highways:

- Government planning INR 5 lakh crore investment in the next five years, creating 500 ready-to-bid road projects worth INR 3 lakh crore
- PPP model will continue to be favoured way of executing NHDP phases
- Priority expressway project for implementation on the PPP Mode

Expressway

- Eastern Peripheral Expressway - a 135 km-long, 6 lane expressway with a total project cost of USD 750 Million
- Delhi - Meerut Expressway - a 150 km long project with project cost of USD 1 Billion
- Vadodra-Mumbai Expressway, a 473 km expressway with project cost of USD 4.3 Billion

Special Accelerated Road Development Programme for North Eastern region:

- Three phase project
- Aims to develop road connectivity between remote areas in the North-eastern region with state capitals and district headquarters

Space

Present Status and Growth Prospects

- India's space programme one of the most cost-effective in the world
- Indian Space Research Organization has formal co-operative arrangements with 33 countries and 3 multinational bodies
- India has launched 40 satellites for 19 countries
- India's heaviest communication satellite, GSAT-10, was successfully launched by Ariane-5 VA 209 from Kourou, French Guiana on September 29, 2012
- PSLV, in its twenty-third flight (PSLV-C20), successfully launched Indo-French Satellite SARAL along with six smaller foreign satellites from Sriharikota on February 25, 2013
- India is the first nation to successfully put satellite Mangalayaan into orbit around Mars on its first attempt on September 24, 2014; as part of one of the cheapest interplanetary space missions
- India successfully tested Geosynchronous Satellite Launch Vehicle (GSLV) Mark III, most powerful satellite launch vehicle to put satellites weighing about 4 tonnes into orbit on December 18, 2014

Growth Drivers

- With the ISRO undertaking the development of cutting edge technologies and interplanetary exploratory missions, there is a tremendous scope in contributions to the realization of operational missions and new areas such as satellite navigation.
- Government plans to develop India's 50-year-old space programme, increased funding for space research by 50 percent to almost USD 1 billion in 2014-15

Investment Opportunities

The Indian Space Research Organisation (ISRO):

- Prime objective of ISRO is to develop space technology and its application to various national tasks

Space Commerce:

- Antrix Corporation Limited, commercial arm of Department of Space undertakes global marketing of space products and services
- Provides TTC support to international customers

Launch Vehicles:

- Satellite Launch Vehicle (SLV)
- Augmented Satellite Launch Vehicle (ASLV):
- Polar Satellite Launch Vehicle (PSLV)
- Geosynchronous Satellite Launch Vehicle (GSLV)

Textiles and Garments

Present Status and Growth Prospects

- India has second largest manufacturing capacity globally
- Industry accounts for 24% of world's spindle capacity and 8% of global rotor capacity
- India has highest loom capacity (including hand looms) with 63% of world's market share
- India accounts 14% of world's textile fibre production and yarn; largest jute producer; second largest silk and cotton producer
- Comparative advantage in terms of skilled manpower and production cost
- 14% contribution to industrial production, 4% to India's GDP and 13% to export
- Textile and apparel industry in India to reach USD 100 Billion by 2016-17 from USD 67 Billion in 2013-14
- Textiles exports to increase to USD 65 Billion by 2016-17 from USD 40 Billion in 2013-14
- Fabric production expected to grow to 112 Billion square metres by 2016-17 from 64 Billion square metres in 2013-14

Growth Drivers

- Strong production base of wide range of fibre/yarn from natural fibres like cotton/jute, silk and wool to synthetic/man-made fibres like polyester, viscose, nylon and acrylic
- Increased penetration of organised retail, favourable demographics and rising income levels
- Abundant raw material and increasing demand for exports to boost fibre production
- Abundant availability of raw materials such as cotton, wool, silk and jute

Investment opportunities

- Entire value chain of synthetics
- Value added and speciality fabrics
- Fabric processing set-ups for all kind of natural and synthetic textiles
- Technical textiles
- Garments
- Retail brands

Thermal Power

Present Status and Growth Prospects

- With 1108 TW production, India is world's fifth largest producer and consumer of electricity
- Power sector accounts for almost a quarter of the projected investments amongst all the infrastructure sectors between 2012-17.
- Total thermal installed capacity in India 180 GW as of January 2015
- During 2007-13, electricity production expanded at 5.5% CAGR
- 100% FDI permitted under automatic route in the sector

Growth Drivers

- Total coal reserves in India stood at 298.94 Billion Tonnes as of March 2013, proven reserves of 123.19 Billion Tonnes
- Proven natural gas reserves 1,354.76 Billion cubic meters
- Target capacity addition of 88.5 GW during 2012-17 and 86.4 GW during 2017-22.
- Proposed amendments to the Electricity Act, 2003 paving way for separation of carriage and content
- National Tariff Policy (2006) ensures adequate return on investment to power companies
- Launch of Ultra Mega Power Project (UMPP) scheme through tariff-based competitive bidding
- Industrial activity expansion and growing population to boost electricity demand
- Increasing market penetration and per-capita usage to provide impetus to energy industry
- Large capacity additions of 174.9 GW targeted by 2022

Investment Opportunities

- Power Generation
- Transmission & Distribution
- Power Trading
- Power Exchanges

Tourism and Hospitality

Present Status and Growth Prospects

- Tourism accounts 6.8% of India's GDP; third largest foreign exchange earner
- Travel and tourism turnover of INR 2,178.1 Billion (2013), 7.5% rise expected in 2014
- Ranks 42nd in the United Nations World Tourism Organization (UNWTO) rankings for foreign tourist arrivals
- 6.97 Million foreign tourist arrivals registered in 2013, 5.9% growth over 2014
- Foreign exchange earnings from tourism touched INR 1058.36 Billion in 2013
- Industry to grow 8% p.a. between 2008 and 2016 (UNWTO projection)
- Domestic tourist visits growing at ~20%

Growth Drivers

- India offers geographical diversity, attractive beaches, 30 World Heritage Sites and 25 bio-geographic zones
- Niche tourism products portfolio in India - cruises, adventure, medical, wellness, sports, MICE, eco-tourism, film, rural and religious tourism
- Ministry of Tourism spends more than 50% of budget on development of tourism destinations and infrastructure
- Incredible India! and Atithi Devo Bhava - ministry's branding and marketing initiatives to boost growth
- Fresh category of visa released by government-medical visa or M visa, to promote medical tourism

Investment Opportunities

- Medical tourism - India has good hospitals and skilled medical professionals
- Cruise tourism - India an ideal choice destination for cruise tourists
- Rural tourism - government implemented schemes in 2002-03 to showcase rural life, art, culture and heritage
- Eco-tourism - is at a nascent stage, efforts are going on to save Himalayan eco-system and culture and heritage of indigenous people
- Timeshare resorts, convention centres, motels, heritage hotels
- Tour organising

Wellness

Present Status and Growth Prospects

- ~INR 490 Billion wellness market in India, services comprise 40%
- Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) sector turnover ~INR 120 Billion; MSMEs accounting 80% of total enterprises
- Products market worth INR 40 Billion; over-the-counter products constitute 75%
- India 2nd largest exporter of ayurvedic and alternative medicine globally
- AYUSH exports stood INR 22.7 Billion (FY14); raw medicinal herbs exports INR 11 Billion, medicaments exports INR 9.7 Billion, medicinal extracts exports INR 1.9 Billion
- Biggest markets for Indian herbal products - Western Europe, Russia, USA, Kazakhstan, UAE, Nepal, Ukraine, Japan, Philippines, Kenya

Growth Drivers

- Global demand for yoga growing exponentially; more than 32 Million people practicing yoga in the US
- India's vast knowledge for both preventive and curative healthcare
- AYUSH and herbal products demand surging in India and abroad
- Adequate product development infrastructure
- Dedicated Department of AYUSH
- Escalating conventional health care costs, side-effects of chemical-based drugs and increase in lifestyle disorders - pushing AYUSH product demand

Investment Opportunities

Ayurveda drug manufacturing

- Nutraceuticals
- Food supplements
- Cosmetics
- Rejuvenatives

Specialised treatment centres

- Medical tourism for curative and rejuvenation treatments

Digital India Programme

The flagship programme Digital India was launched in August 2014, with an aim to transform India into a digitally empowered society and knowledge economy. Through this programme, the Government would ensure that its services are available to citizens electronically. The objective of the programme is to bring public accountability through mandated delivery of government's services electronically; a Unique ID and 'e-Pramaan' based on authentic and standard based interoperable and integrated government applications and data basis.

The focus is on making technology central to enabling change. It is an Umbrella Programme with multiple government ministries and departments joining the design and implementation of this programme. It pulls together many existing schemes. These schemes will be restructured and re-focused. They will be implemented in a synchronized manner. Many elements are only process improvements with minimal cost. The common branding of programmes as Digital India highlights their transformative impact.

The programme is coordinated by the Department of Electronics and Information Technology (DeitY), Government of India. The weaving together makes the Mission transformative in totality.

Vision areas of Digital India Programme

1. Digital Infrastructure as a Utility to Every Citizen

- Availability of high speed internet as a core utility in all Gram Panchayats
- Cradle to grave digital identity -unique, lifelong, online, and authenticable
- Mobile phone & Bank account enabling participation in digital & financial space at individual level
- Easy access to a Common Service Centre
- Shareable private space on a public cloud
- Safe and secure Cyber-space in the country

2. Governance & Services on Demand

- Seamless integration across departments or jurisdictions to provide easy and a single window access to all persons
- Government services available in real time from online & mobile platform
- Availability of all citizen entitlements on the cloud to ensure easy access
- Digital transformation of all Government services for improving Ease of Doing Business
- Making financial transactions above a threshold, electronic & cashless
- Leveraging GIS for decision support systems & development

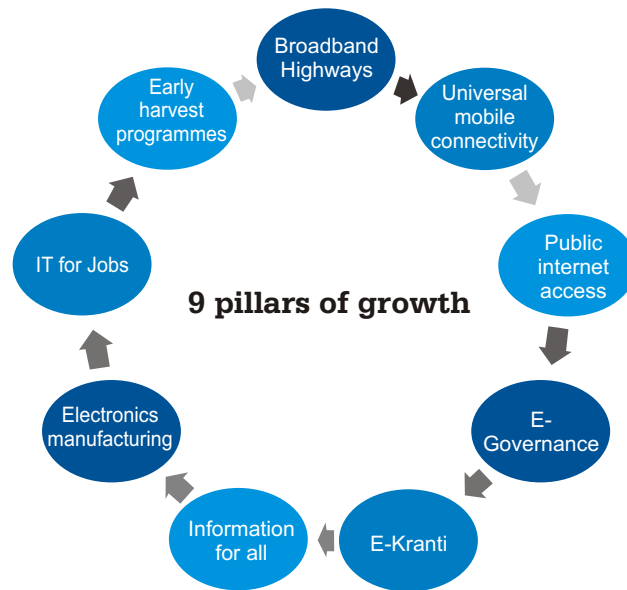
3. Digital Empowerment of Citizens

- Universal Digital Literacy
- Universally accessible digital resources
- All documents/ certificates to be available on cloud
- Availability of digital resources / services in Indian languages
- Collaborative digital platforms for participative governance
- Portability of all entitlements through cloud

Key goals to be achieved

Digital India aims to provide the much needed thrust to the nine pillars of growth areas, namely

1. Broadband Highways
2. Universal Access to Mobile Connectivity
3. Public Internet Access Programme
4. e-Governance - Reforming Government through Technology
5. e-Kranti - Electronic Delivery of Services
6. Information for All
7. Electronics Manufacturing
8. IT for Jobs
9. Early Harvest Programmes



Impact of Digital India by 2019

- Broadband in 2.5 lakh villages
- Universal access to mobile connectivity
- Net Zero Imports by 2020
- 400,000 Public Internet Access Points
- Wi-fi in 2.5 lakh schools, all universities; Public wi-fi hotspots for citizens
- Digital Inclusion: 1.7 Cr trained for IT, Telecom and Electronics Jobs
- Job creation: Direct 1.7 Cr and Indirect at least 8.5 Cr
- e-Governance & e-Services: Across government
- India to be leader in IT use in services - healthcare, education, financial inclusion, agriculture, security, justice, planning, etc.
- Digitally empowered citizens - public cloud, internet access

Project Cost

Overall Costs of Digital India would be

- ~ INR 100,000 Cr in ongoing schemes (only DeitY, DOT & not including those in other line Ministries)
- ~ INR 13,000 Cr for new schemes & activities

This includes the following estimated capex/costs:

Key Goals of Digital India Program	Cost Estimates* (INR crores)	
1. Broadband Highways:		
i) Broadband for all Rural:	32,000	CAPEX
ii) Broadband for all Urban:	Not available	
iii) National Information Infrastructure:	15,686	Cost
2. Universal Access to Mobile connectivity:	16,000	Cost
3. Public Internet Access Programme - National Rural Internet Mission:		
i) Making Common Service Centres (SCSs) viable, multi-functional end points for service delivery taking govt. services to all GPs	4,750	Cost
ii) Post offices as Multi-service centres:	Not available	

* Government figures

Approach and Methodology

- Ministries / Departments / States would fully leverage the Common and Support ICT Infrastructure established by the Government of India.
- The existing/ ongoing e-Governance initiatives would be revamped to align them with the principles of Digital India. Scope enhancement, Process Reengineering, use of integrated & interoperable systems and deployment of emerging technologies like Cloud & mobile would be undertaken to enhance delivery of Government services to citizens.
- States would be given flexibility to identify for inclusion additional state-specific projects, which are relevant to their socio-economic needs.
- e-Governance would be promoted through a centralised initiative to the extent necessary, to ensure citizen centric service orientation.
- Successes would be identified and their replication promoted proactively.
- Public Private Partnerships would be preferred wherever feasible.
- Adoption of Unique ID would be promoted to facilitate identification, authentication and delivery of benefits.
- Restructuring of NIC would be undertaken to strengthen the IT support to all government departments at the Centre and State levels.
- The positions of Chief Information Officers (CIO) would be created in at least 10 key ministries so that various e-Governance projects could be designed, developed and implemented faster.

- DeitY would create necessary senior positions within the department for managing the programme.
- Central Ministries / Departments and State Governments would have the overall responsibility for implementation of various Mission Mode and other projects under this Programme. Considering the need for overall aggregation and integration at the national level, it is considered appropriate to implement Digital India as a programme with well-defined roles and responsibilities of each agency involved.

Program Management Structure

A programme management structure is being established for monitoring implementation. Key components of the management structure would consist of the Cabinet Committee on Economic Affairs (CCEA) for according approval to projects, a Monitoring Committee headed by the Prime Minister, a Digital India Advisory Group chaired by the Minister of Communications and IT, an Apex Committee chaired by the Cabinet Secretary and the Expenditure Finance Committee (EFC) / Committee on Non Plan Expenditure (CNE).

Investment Opportunities

The Digital India Programme promises a number of new possibilities for India, including a new level of engagement between the government, private sector and citizens. Given that the goal of this project is to provide real-time services, it opens doors for a large number of ICT industry players to develop platforms which can help in providing government services and information to all citizens of the country. To enable this, data management and security solutions will have to be accounted for in the deployment plan. Thus, the role and scope of the technology and communications industry becomes critical at every stage of the Digital India Programme - project development, execution and management.

Government of India has proposed a PPP model to roll out this programme. Global and domestic companies can therefore hope to win contracts related to the Programme to develop the infrastructure which has a proposed outlay of USD 17 billion.

Open access to broadband highways across India will give a big push to trade across the country. This will result in amongst other benefits, a new surge in e-commerce.

Digital India Programme also provides an impetus to Indian manufacturing by opening up a massive demand for internet-related equipment - routers, switches and devices (most importantly affordable smartphones) - that will facilitate last mile connectivity. Manufacturing clusters for electronic goods have already been approved to be set up in Jharkhand, Maharashtra and Madhya Pradesh for products such as

mobile handsets, microchip and chip-less designs and set-top boxes. The government is working towards establishing the first manufacturing cluster by March next year. This will create jobs and will give a tremendous boost in the country's efforts in developing an eco-system of local manufacturing and R&D in India.

Recent Developments

The Digital India Programme has already generated huge interest nationally and internationally. The private sector is showing its keenness to partner with the government in achieving the Digital India vision.

- Microsoft has already applied to roll out a pilot project to use "whitespace", the unused spectrum between two analogue TV channels, to provide free internet access. If successful, this can provide a fillip to the Digital India initiative.
- In September 2014, Google India announced the roll out of various initiatives to support the Digital India programme, making it one of the first companies to endorse the programme. The initiatives include running a number of campaigns as part of the programme.
- Facebook CEO Mark Zuckerberg, during his first trip to India met with the Prime Minister of India, Narendra Modi, and the Union Minister of Communications and IT, Ravi Shankar Prasad where he expressed his willingness to join India's National Optical Fibre Network as a partner and deploy out of the box alternative technologies to roll out the Digital India programme.
- Several network equipment manufacturers have shown a great level of interest in accessing the benefits of cluster manufacturing.

Smart Cities Project

India is experiencing rapid urbanization and growth in cities. Boundaries of almost all the major Indian cities are expanding, bringing larger population within the ambit of Urban India. In 2001, about 286 million persons were living in urban areas of India and it was the second largest urban population in the world. As per the Census of India 2011, the urban population has increased to 377 million thereby registering a growth of around 32%. According to recent estimates, by the year 2030, nearly 590 million people will live in Indian cities, which is nearly twice the population of the United States today. To accommodate this massive urbanization, India needs to find smarter ways to manage complexities, reduce expenses, increase efficiency and improve the quality of life.

To meet the above challenges, the Government of India allocated INR 70.6 billion (USD 1.2 billion) for Smart Cities in the Budget 2014-15. India plans 100 new smart cities and will develop modern satellite towns around existing cities under the smart city programme.

To encourage development of "Smart Cities", which will also provide habitation for the neo-middle class, requirement of the built up area and capital conditions for FDI is being reduced from 50,000 sq. mts. to 20,000 sq. mts. and from USD 10 million to USD 5 million respectively. To further encourage this, projects which commit at least 30% of the total project cost for low cost affordable housing will be exempted from minimum built up area and capitalisation requirements.

A National Industrial Corridor Authority, with its headquarters in Pune is being set up to coordinate the development of Industrial Corridors with emphasis on Smart Cities linked to transport connectivity to spur growth in manufacturing and urbanization. Master Planning of Amritsar Kolkata Industrial Corridor will be completed expeditiously for the development of Industrial Smart Cities in seven states of the country. The seven states that will be covered in this project are Punjab, Haryana, Uttar Pradesh, Uttarakhand, Bihar, Jharkhand and West Bengal.

Master planning of three new smart cities in the Chennai-Bengaluru Industrial Corridor region, viz., Ponneri in Tamil Nadu, Krishnapatnam in Andhra Pradesh and Tumkur in Karnataka will also be completed. The Perspective Plan for the Bengaluru Mumbai Economic Corridor and Vizag-Chennai Corridor has been planned to be completed with provision for 20 new industrial clusters.

Investment Opportunities

Rapid urbanization combined with the potential to develop cities presents a significant opportunity to the diaspora of the Indian industry. Various state and local governments are focused on developing and upgrading their cities. In addition a massive agenda from the Central Government to develop 100 smart cities, redevelop heritage cities and renew around 500 cities have boosted industry sentiments.

For promoting economic activity in India, five new Industrial Corridors are being planned. These corridors include Delhi-Mumbai Industrial Corridor, Amritsar-Delhi-Kolkata Industrial Corridor, Bengaluru-Mumbai Economic Corridor, East Coast Industrial Corridor and Chennai-Bengaluru Industrial Corridor. Each Industrial Corridor will have several key nodes developed on Smart City principles.

The private sector has to play an important role in developing the industrial corridors (including the smart cities) announced by the Government. The Government would provide the vision, direction and the initial capital to kick start the development process. However, major investments would have to come from the private sector not only in the form of funds but also in terms of technology, skills and expertise.

Private sector players may take up projects in PPP mode or they may also work as contractors, consultants, O&M operators, equipment suppliers and rolling stock suppliers apart from financing across the value chain.

Selection Criteria for Smart Cities

The Government of India has indicated that they might consider the below mentioned criteria in finalising cities under the "100 Smart Cities" initiative:

Criteria for Shortlisting of Cities (Indicative List)

Criteria	Number of Cities
Economic Criterion	
Cities accounting for 54% of Incremental GDP till 2025 (Source: McKinsey Global Institute, "Understanding India's economic geography", October 2014)	69
Geographic Inclusivity	
All State Capitals (not included above)	12
Tourist/ Religious - Heritage (not included above)	8
Hill and Coastal Areas (not included above)	4
Mid-sized Cities (not included above)	7
Total	100

Some of the cities that have been chosen for being developed as smart cities are:

- | | |
|--------------------------------|-----------------------------------|
| 1. Delhi | 2. Ajmer (Rajasthan) |
| 3. Allahabad (Uttar Pradesh) | 4. Visakhapatnam (Andhra Pradesh) |
| 5. Gurgaon (Haryana) | 6. Bengaluru (Karnataka) |
| 7. Mumbai (Maharashtra) | 8. Pune (Maharashtra) |
| 9. Ludhiana (Punjab) | 10. Indore (Madhya Pradesh) |
| 11. Amaravati (Andhra Pradesh) | 12. Badami (Karnataka) |
| 13. Dwarka (Gujarat) | 14. Gaya (Bihar) |
| 15. Mathura (Uttar Pradesh) | 16. Puri (Odisha) |
| 17. Warangal (Telangana) | |

Key sectors to attract investment under the Smart Cities project

PHYSICAL INFRASTRUCTURE

Housing

- Housing - For all socio-economic classes

Transport

- Improvements in public transport - Metro Rail, BRT, LRT, Monorail, Trams etc.
- Improvements in transport infrastructure of other motor vehicles - ring roads, bypasses, underpasses, elevated roads, improvements in the existing road ways
- Improvements in infrastructure for walking, cycling and waterways

Water Supply

Smart cities will be designed with availability of 24x7 piped water supply that meet benchmarks of water quality, pressure, etc. across the city. The focus should be on recycling & conserving water and also adoption of new methods especially smart metering for reducing loss and energy consumption in water networks.

Sanitation

City wide sanitation plan will be implemented for all parts of the city based on the concept of Decentralized Sewerage System. There is need for encouraging technologies that result in 100% recycling in the sanitation system.

Solid Waste Management

Potential Areas:

- Segregation of recyclable and non-recyclable waste as well as wet and dry waste at the source so that there can be 100% recycling of solid waste

- Appropriate technology should be adopted for treatment of waste at decentralized locations
- Putting in place an effective collection and disposal system
- Encouraging use of products based on recycling of solid waste especially - power, compost, building material (based on cycling of debris & construction materials)

Storm Water Drainage

Smart cities to adopt a storm water management approach which would include preserving and maintaining the natural hydrological cycle, ground water recharge, natural drainage system, etc. For this purpose appropriate technologies will be adopted that improve the quality of water from storm water flows.

Electricity

Smart cities need to have universal access to electricity 24x7 which in India's case is difficult with the existing supply and distribution system. Cities will therefore require smart metering at the household level and establishment of smart grids and their integration with renewable sources such as solar and wind energy to meet the demand.

Internet & Telephone

A 100 Mbps internet backbone coupled with 100% coverage of the area by cell phone towers and a high level of telephone penetration will be essential in a Smart City as most services will have to be offered online.

Fibre Optic connectivity to each home, Wi-Fi in all public places and educational institutions would also be important features of a Smart City.

SOCIAL INFRASTRUCTURE

- Education - Quality educational facilities, both for schools and higher education in every neighbourhood will be required. This can be achieved with e-education and digital content.
- Healthcare - High quality healthcare facilities are important factors in making a city liveable and attractive for people and businesses. This would necessitate creation of Electronic Health Record for every resident and adoption of telemedicine in every neighbourhood.
- Entertainment- Theatres, concert halls, auditoriums, cultural centres, open spaces and plazas allow opportunities for recreation and are important for healthy and happy living.
- Good sports facilities - Children parks, stadiums, swimming pools, neighbourhood sports complexes, golf courses, etc. in cities will be required.

Skill India Programme

Skills and knowledge are the driving forces of economic growth and social development of a country. In rapidly growing economies like India with a vast and ever-increasing population, the problem is two-fold. On one hand, there is a severe paucity of highly-trained, quality labour, while on the other hand large sections of the population possess little or no job skills. As the Indian economy continues to transform and mature, large scale sectoral shifts in the working population are inevitable, particularly from agriculture to other sectors of the economy. These sectors, however, require significantly different and often specialist skill sets, which require training and skill development. This skill gap needs to be addressed through comprehensive efforts, at various levels and catering to different needs of the society and industry.

Against 12 million potential new entrants to the workforce every year, the existing vocational training capacity is merely 3 million seats, which implies that nearly 75% of the entrants cannot benefit from formal skill development. A concerted action is required on supply side to ensure that Indian youth (wage and self-employed) gets the opportunity to equip themselves with relevant and upgraded skills and knowledge, enabling them obtain access to proper employment. It is also important to empower workforce with globally acclaimed education and skills to make them globally competitive. Thus, a critical task at hand is to extensively focus on skilling of workforce, in terms of both quantity and quality.

Transforming the skill development ecosystem and making it responsive to needs of both industry and citizens requires a scalable, efficient and comprehensive vocational training ecosystem to meet the future requirements. The skill development efforts need to be managed in a focused and coordinated manner. Currently, skill development efforts are spread across approximately 20 separate ministries, 35 State Governments and Union Territories and the private sector.

The government has listed Skill Development as one of its priorities and is committed to address the issue in a holistic manner. It not only aims to enhance participation from youth but also seeks greater inclusion of women, disabled and other disadvantaged sections into the workforce. The government proposes to work along with various sectors and improve the capability of the present system, making it flexible to adapt to technological changes and demands emanating from the labour market.

With these objectives in mind, a new Ministry of Skills development, Entrepreneurship, Youth and Sports has been created. The newly created Department of Skills Development and Entrepreneurship has been entrusted with coordination of all stakeholders for evolving an appropriate skills development framework, removal of disconnect between demand and supply of skilled manpower, skills upgradation, building new skills, innovative thinking and talents not only for the existing jobs but also the jobs that are to be created.

The new department under the skills ministry is also responsible for: mapping and certification of skills, expansion of youth entrepreneurship education and capacity building, market research, industry–institute linkages, building public-private partnership, making broad policies for all other ministries/departments with regard to market requirements and skills development, and bringing in academic equivalence of skill sets, and work related to Industrial Training Institutes (ITIs), National Skills Development Corporation (NSDC), National Skills Development Agency (NSDA) and the National Skills Development Trust.

The new government is planning to launch a special mission on Skill Development, called 'Skill India' in 2015. It is envisaged as a multi-skill development programme for nationwide job creation and entrepreneurship. It would skill the youth with an emphasis on employability and entrepreneur skills. It will also provide training and support for traditional professions like welders, carpenters, cobblers, masons, blacksmiths, weavers etc. Convergence of various schemes to attain this objective is also proposed.

Skill Development Eco-System			
Key Bodies	Enablers	Implementing Bodies	Beneficiaries
<ul style="list-style-type: none"> Ministry of Skill Development & Entrepreneurship MHRD MORD Other Central Ministries 	<ul style="list-style-type: none"> SSDM NSDC NSDA SSCs NCVT SCVT Labour Laws Minimum Wages Act Financial Institutions Apprenticeships Act 	<ul style="list-style-type: none"> ITIs Training Providers Captive Training by Employers Schools Universities Assessment Companies 	<ul style="list-style-type: none"> Marginalized Societies Unemployed youth Low income Group School & College Students

Existing Skill Development Schemes

The Modular Employable Skills (MES) by Ministry of Labour and Employment

The Ministry of Labour and Employment undertook the development of a new strategic framework, namely the MES, for skill development for early school leavers and existing workers, especially in the unorganised sector in close consultation with industry, micro enterprises in the unorganised sector, State Governments, experts and

academia. The main objective of the scheme is to provide employable skills to school leavers, existing workers, ITI/ITC graduates, etc.

Integrated Skill Development Scheme by Ministry of Textiles

Ministry of Textiles to address the trained manpower needs of textiles and related segments (including Handicrafts, Handlooms, Sericulture, Jute, Technical Textiles etc.) has introduced this scheme for developing a cohesive and integrated framework of training based on the industry needs.

Entrepreneurial Skill Development Programme by Ministry of Small Scale & Medium Enterprises

Comprehensive training programmes are organized to upgrade skills of prospective entrepreneurs, existing workforce and also develop skills of new workers and technicians of MSMEs by organising various technical cum skill development training programmes. Specific tailor made programmes are also organized for the skill development of socially disadvantaged groups (OBC, ST, ST, Minorities and women) in various regions of the states, including the less developed areas. This programme covers training across 60 disciplines.

Aajeevika Skills by Ministry of Rural Development

Aajeevika- National Rural Livelihood Mission (NRLM) is an initiative launched by Ministry of Rural Development (MoRD), Government of India in June 2011. It has evolved out of the need to cater to the occupational aspirations of the rural youth who are poor and to diversify incomes of the rural poor. ASDP gives young people from poor communities an opportunity to upgrade their skills and enter the skilled work force in growing sectors of the economy. Training and placement schemes are run in partnership with public, private, non-government and community organizations.

Skill Development by Ministry of Social Justice and Empowerment

Department of Social Justice and Empowerment is participating effectively in the implementation of the skill development programme and enabling action at the grass root level with the help of the three Finance Corporations which are promoting economic empowerment of the target groups. These Corporations finance self-employment oriented income generating schemes for their target groups and are basically 'not for profit' Companies. They are also implementing the Skill Development Programmes as per the targets assigned to them. These include:

- i. National Scheduled Castes Finance and Development Corporation (NSFDC)
- ii. National Safai Karmacharis Finance and Development Corporation (NSKFDC)
- iii. National Backward Classes Finance and Development Corporation (NBCFDC)

Skill Development by Ministry of Road Transport and Highways

For construction workers in the road sector, there is huge demand for trades like surveyor, excavator operator, grader operator, stone crusher operator, laboratory technician, road roller operator, skilled, semi-skilled and unskilled workers. The Government of Andhra Pradesh took the initiative of setting up National Academy of Construction in Hyderabad for training of construction workers a few years back. This is a joint effort of the state government and contractors associations. This is an excellent example for being replicated in several regions of the country with due focus on road sector demands.

Skill Development by Ministry of Agriculture

Through this programme, the government is focusing on Training in use of Agricultural Implements & machinery, Soil Conservation Training, Cooperative Education and Training. There is one Central Agricultural University, thirty one State Agricultural Universities (SAUs) and four National Institutes of Indian Council of Agricultural Research having the status of Deemed University. ICAR also arranges need based training programmes in any of State Agricultural University or ICAR Institutes in new and emerging areas.

Skill Development by Ministry of Food Processing

Skill Development initiative taken by the Ministry of Food Processing in consultation with National Skill Development Council has identified 7 sectors (Bakery, Dairy, Grain Processing, Poultry, Refrigeration, Packaging, Quality Control) with the help of reputed industry partners to train 10,000 persons. The Ministry has incorporated Indian Institute of Crop Processing Technology and National Institute of Food Technology Entrepreneurship and Management (NIFTEM) institutes which are imparting specialized training in Food Processing Skills.

Skill Development by Ministry of Health and Family Welfare

The Ministry of Health and Family Welfare is engaged in Basic Training of multipurpose health workers (Female & Male). Skill upgradation of all categories of health care professionals and para-professionals is envisaged for improving the quality of screening and management of persons with complications, including referral as and when required. The Ministry is offering short term courses for the semiskilled and unskilled work force at Hospital chains and mobile ambulances.

Skill Development by Ministry of Heavy Industries and Public Enterprises

The Ministry is focused on Counselling, Retraining and Redeployment of Rationalized Workers of Central Public Service Enterprises and skill development for sectors like Power equipment, Process Plant Machinery, Textiles Machinery, Machine Tools, Tool & Die Making, Engineering Goods and Plastic Machinery

Skill Development by Ministry of Human Resource Development

Ministry of Human Resource Development is taking forward the skill development agenda through following programmes:

- Vocationalisation of Secondary Education covering (6800 schools covered)
- Polytechnics (1244) + Institutions for diploma in pharmacy (415), hotel management (63), architecture(25)
- Community Polytechnic Scheme (675 CPs)
- Jan Shikshan Sansthan (157 Vocational Training Centres run by NGOs offering more than 250 courses)
- National Institute of Open Schooling- Distance Vocational Education Programmes offering [Practical training through Accredited Vocational Institutes (AVIs)]

Skill Development by Ministry of Information Technology

The Ministry of Information technology has visualized creating skill development facilities in deprived areas through strengthening of National Institute of Electronics and Information Technology (NIELIT). Under this scheme, capacity building in the areas of Electronic Product Design and Production Technology has been initiated for development of human resource at various levels including Certificate, Diploma, Post Graduate and Research Professionals with adequate competence levels. The programme targets training of 11,515 candidates in five years. The project further aims at upgrading the competence of working professional in Indian industries and knowledge/ skills of faculty of technical institutions.

Skill Development by Ministry of Tourism

Under the Scheme of "Capacity Building for Service Providers", the Ministry of Tourism has decided to provide assistance to sponsored institutes to conduct Skill Development Programmes called "HUNAR SE ROZGAAR". The Programme would offer short but quality training courses covering (i) Food & Beverage Service and (ii) Food Production. The programme would target persons with minimal means and in need to acquire skills for basic employment.

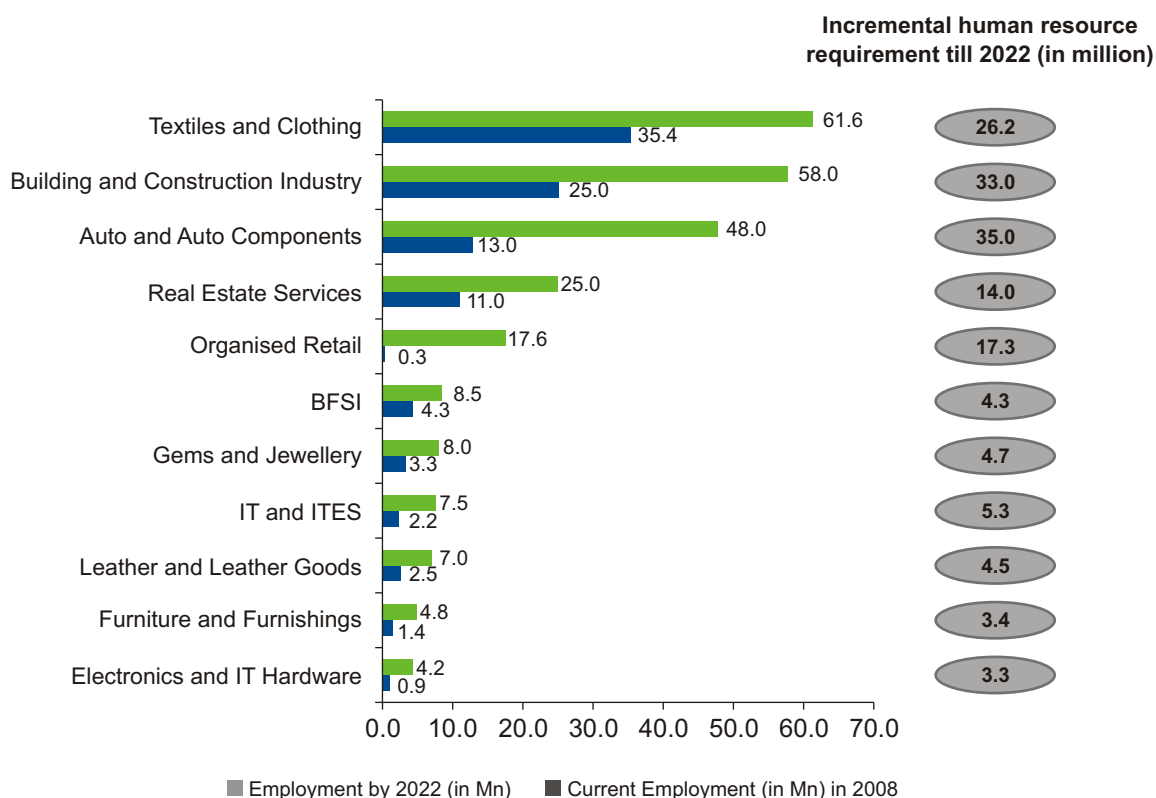
Skill Development by Ministry of Housing & Urban Poverty Alleviation

The Ministry of Housing & Urban Poverty Alleviation (MHUPA) has announced to undertake necessary skill development programmes for urban poor under 'Deen Dayal Antyodaya Yojana (DAY)'. Under DAY, the Ministry of HUPA intends to undertake skill development of five lakh urban poor per year based on identified market needs. This scheme will help in reducing poverty and vulnerability of the urban poor households by enabling them to access gainful self-employment and skilled wage employment opportunities, resulting in an appreciable improvement in their livelihoods on a sustainable basis, through building strong grassroots level institutions for the poor.

FICCI Initiatives

FICCI in its own way has been encouraging industry participation through promoting industry lead sector skill councils. As on date, 6 such councils for Capital Goods, Food Processing, Media & Entertainment, Agriculture, Sports, and Chemical have been set up with support of FICCI.

Opportunities in Skill Development



Note: The below chart depicts the Skill shortage in few high performance sectors as identified by NSDC in 2010.

Swachh Bharat Abhiyan

With an overarching aim to make India a clean country, Honourable Prime Minister of India Shri Narendra Modi launched one of the most important flagship programmes of the government - the Clean India Mission or the Swachh Bharat Abhiyan. The announcement was made on October 2, 2014 on the occasion of the birth anniversary of Mahatma Gandhi, as the government plans to fulfil Babu's vision of Clean India by his 150th birth anniversary in 2019.

Cleanliness is an important prerequisite for developing a healthy and strong nation. A clean country can only ensure that its citizens remain healthy, and only healthy citizens can contribute positively towards the growth of an economy. However, the scenario in India with respect to cleanliness is not very encouraging. At present, about 600 million people in India defecate in open every day due to lack of availability of toilets. This is 60% of the total open defecation in the world and also the highest. According to Census 2011, only 32.7% people in rural areas had access to toilet facilities. In fact, in rural India the percentage of households having access to television and telephones exceeds the percentage of households with access to toilet facilities.

Moreover, as fallout of economic development, we are today generating a large amount of non-biodegradable waste products, which has a direct bearing on our health. Unless an efficient waste management system is put in place, it will continue to have negative impact on our lives. Lack of cleanliness and hygiene has also adversely affected the growth of tourism in the country. It is important to project and present India as a clean country to the rest of the world. As per a WHO report, about INR 6500 per person gets lost on an average in India due to lack of cleanliness and hygiene. It is thus imperative to allocate some serious time and investments in assuring a clean environment. This would have a positive externality in terms of public health and also in terms of the overall impact on national productivity.

In the past, cleanliness drives have taken various forms in India; however the government's attempt to convert Swachh Bharat Abhiyan into a mass movement is a laudable attempt. To achieve the tall task of cleaning a large and thickly populated country like India, it is important that each citizen of the country participates in this initiative and contribute towards this goal to the best of their capacity. Basic cleanliness is a fundamental right as well as duty of all citizens. The campaign is thus something which was most desirable.

Cleanliness Pledge

- I take this pledge that I will remain committed towards cleanliness and devote time for this.
- I will devote 100 hours per year that is two hours per week, to voluntarily work for cleanliness.
- I will neither litter nor let others litter.
- I will initiate the quest for cleanliness with myself, my family, my locality, my village and my work place.
- I believe that the countries of the world that appear clean are so because their citizens don't indulge in littering nor do they allow it to happen.
- With this firm belief, I will propagate the message of Swachh Bharat Mission in villages and towns.
- I will encourage 100 other persons to take this pledge which I am taking today.
- I will endeavour to make them devote their 100 hours for cleanliness.
- I am confident that every step I take towards cleanliness will help in making my country clean.

The Clean Indian Mission intends to extend assistance to all 4041 statutory towns/cities as per the 2011 census. In addition, the cantonment boards in these towns and the towns that subsequently acquire statutory status will also be eligible for assistance under this mission.

Objectives of Clean India Mission

In light of mission to move towards cleaner India, the key objectives of the Swachh Bharat Abhiyan are –

- (i) Eliminate open defecation.
- (ii) Conversion of insanitary toilets to pour flush toilets
- (iii) Eradication of manual scavenging.
- (iv) 100% collection and scientific processing/disposal/reuse/recycle of Municipal Solid Waste.
- (v) To bring about a behavioural change in people regarding healthy sanitation practices.
- (vi) Generate awareness among the citizens about sanitation and its linkages with public health.
- (vii) Strengthening of urban local bodies to design, execute and operate systems.
- (viii) To create enabling environment for private sector participation in Capital expenditure and Operation and Maintenance expenditure (O&M).

Project Cost - Urban

The total cost of the Swachh Bharat Abhiyan is estimated at INR 62,009 crore. The share of Government of India amounts to INR 14,623 crore and INR 4874 crore shall be contributed by the States as the State/Urban Local Body (ULB) share.

The funding of the projects/incentives shall be shared in the ratio of 75:25 between the Central government and the State/ULBs and the funding pattern will be as indicated in the table below-

Component	Central Government (75% of the incentive/VGF/Grant)	State Government (25% of the incentive/VGF/ Grant)
Provision of Household Toilets*	INR 4,000 per household	INR 1,340 per household
Community Toilets	40% VGF	
Public Toilets	100% Private Funding.	
Municipal Solid Waste Management	20% VGF	
IEC & Public Awareness	15%	
A & O.E and Capacity Building	5%	

VGF: Viability Gap Funding; IEC: Information Education and Communication, A&OE: Administration & Office Expenses
*includes conversion of Insanitary toilets and Pit latrines(those requiring conversion) to sanitary toilets.

The gap in financing in components for household toilets, community toilets, public toilets and solid waste management projects could be met by the beneficiary contribution, private funding, funds with private companies under Corporate Social Responsibility (CSR) and the 'Swachh Bharat Kosh' of the Ministry of Finance.

Levy of user charges, finding innovative streams of resource generation including of leveraging of land by ULBs could be used for augmentation of resources/implementation of projects.

The Mission would be implemented with the following classifications of funding to states:

- (i) Project Fund based on Normative Criteria-60%
- (ii) Performance Fund based on Performance Matrix-20%
- (iii) Public Awareness & IEC Activities-15%
- (iv) Capacity building & A&OE(States)-3%
- (v) Research, Capacity building & A&OE (MoUD)-2%

Investment Opportunities

Attaining the objective of a cleaner India over the next five years would entail a well-planned and a cohesive approach. The mission requires huge investments towards creation of key assets - household toilets/community toilets/public toilets/solid waste management facilities - to attain the goal of eliminating open defecation. Also, spreading public awareness through information-education-communication campaigns will be one of the most important components.

The interest expressed by companies (both public and private) towards the mission has been very encouraging. Some companies have already pledged good amounts of money towards constructing toilets, cleaning slums or spreading awareness about hygiene and sanitation. These companies are undertaking this expenditure over and above their mandatory corporate social responsibility obligation.

For instance, Hindustan Unilever is in talks to take a piece of land on lease in Mumbai and has proposed to construct a Hygiene Centre for a slum. The centre would have toilets, bathrooms, laundry facility and water recycling facilities. Though the centre would be using company products, this is an excellent example of creating shared value and sustainable gains for both the company and the customers.

There are plenty of other examples as well. Oil & Natural Gas Company has volunteered to adopt some historical monuments and keep them clean. Bharti Foundation has pledged an amount of INR 100 crore for constructing girls' toilets in Ludhiana in the next three years. Reckitt Benckiser in association with NDTV and Facebook has come forward to spread awareness about sanitation and hygiene.

However, at present we are just at the tip of the iceberg and this campaign requires continuous support both in terms of investments and action to transform it into a sustainable movement with visible results.

Clean Ganga Mission

The Ganges or river Ganga holds immense significance for the people of India. The river has its origin in the Western Himalayan Ranges and is the longest river in India having a length of 2,510 km. River Ganga is worshipped as the goddess Ganga in Hinduism and is regarded as the most sacred of all rivers present in India. Therefore, it plays an important role in religious ceremonies and rituals of Hindus. People have great faith in the healing powers of the river, both physical as well as spiritual. Usually, the followers of Hindu religion take bath in the holy river at least once during their life time.

Besides religious significance, Ganga has social and economic importance as well. The Ganga Basin is the largest river basin in India in terms of catchment area, constituting 26% of the country's land mass (8,61,404 Sq. km) and supporting about 43% of its population (448.3 million as per 2001 census) spread across 11 states - Uttarakhand, Uttar Pradesh, Madhya Pradesh, Rajasthan, Haryana, Himachal Pradesh, Chhattisgarh, Jharkhand, Bihar, West Bengal and Delhi. The Ganga Basin is one of the most fertile regions for agriculture and has played an instrumental role towards the growth of the agriculture sector in the country. Some of the crops that are grown in the region include rice, sugarcane, lentils, oil seeds, potatoes, and wheat. The river also provides business opportunities like fishing to many and promotes tourism owing to pilgrimages and festivities that are organised near the banks of the river. Moreover, holy towns of Haridwar, Allahabad and Varansi also attract foreign tourists in large numbers.

However, substantial growth in population in the cities situated in the Ganga Basin coupled with rapid industrialisation in these areas has taken a toll on the state of the river. The quality of Ganga water has deteriorated substantially over the years due to dumping of industrial and domestic wastes into the river, posing problems for the people dependent on the river for their livelihood and basic needs. Given this scenario, the National Ganga River Basin Authority (constituted in the year 2009) has decided to initiate 'Mission Clean Ganga' to bring back the old glory of the National River of India - Ganga.

Ganga Rejuvenation has been indicated to be one of the top priorities by the Government and several announcements to this end have already been made. The aim is to rejuvenate Ganga over the next three years.

Vision and Objective of Clean Ganga Mission

Vision:

The vision for Ganga Rejuvenation constitutes restoring the wholesomeness of the river defined in terms of ensuring “AviralDhara” (Continuous Flow), “NirmalDhara” (“Unpolluted Flow”), Geologic and ecological integrity

Objective:

- To ensure effective abatement of pollution and rejuvenation of the River Ganga by adopting a river basin approach to promote inter-sectoral co-ordination for comprehensive planning and management.
- To maintain minimum ecological flows in River Ganga with the aim of ensuring water quality and environmentally sustainable development.

Projects Sanctioned under National Ganga River Basin Authority

National Ganga River Basin Authority (NGRBA) has so far sanctioned a total 72 projects in 47 towns in Ganga States costing INR 4607.82 crore under NGRBA Program including Externally Aided Projects (EAP) component with the assistance of Japan International Agency (JICA) and the World Bank of INR 2626.64 crore.

These include projects of INR 1914.36 crore in Uttar Pradesh, of INR 1160.38 crore in Bihar, of INR 99.36 crore in Jharkhand, of INR 934.21 crore in West Bengal and of INR 251.21 crore in Uttarakhand for laying of sewage networks, treatment plants, development of river fronts, etc.

These sanctioned projects also include three Centre Pollution Control Board (CPCB) projects worth INR 198.48 crore on Pollution Inventorization, Assessment and Surveillance (PIAS) on river Ganga Strengthening of Environmental Regulator (SER)-CPCB and a project of setting up the Ganga Knowledge Centre (GKC) in NMCG (INR 48.54 crore) and Educating Schools and Communities for conserving habitat of Ganga River Dolphin of (INR 1.28 crore). An amount of INR 838.76 crore (as on 31st March 2014) has been released by both Centre and the States for implementation of the sanctioned projects.

Funding Mechanism

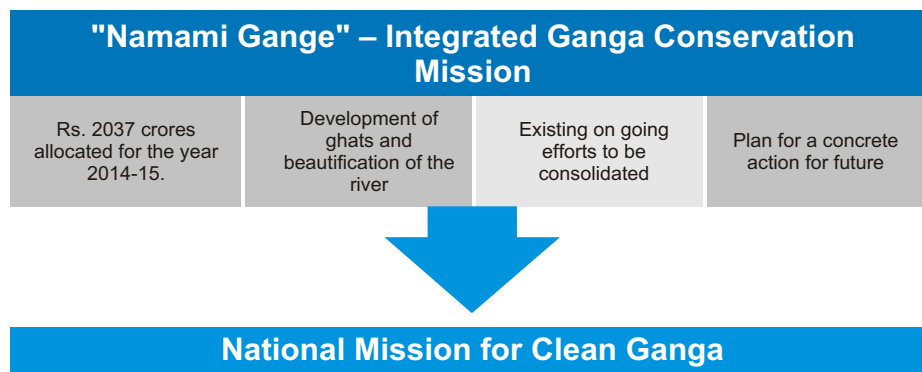
The investments required to create the necessary treatment and sewerage infrastructure would be shared between Centre and State Governments on 70:30 basis. The State Governments would be required to motivate Urban Local Bodies (ULBs) for resource recovery and revenue generation. Also, the cost of Operations and Maintenance (O&M) for the initial five years in NGRBA projects would be shared between Centre and States in the ratio of 70:30 with a periodical review.

Government has also set up Clean Ganga Fund under Mission Ganga Rejuvenation which is open for contribution from Indian citizens as well as Non-resident Indians (NRI) & Person of Indian Origin (PIOs).

Namami Gange Programme

In the Union budget 2014-15, an Integrated Ganga Conservation Mission called "Namami Gange" has been proposed and a sum of INR 2,037 crores was allocated for the same. In addition, a corpus of INR 100 crore was announced for development of Ghats and beautification of River fronts at Kedarnath, Haridwar, Kanpur, Varanasi, Allahabad, Patna and Delhi.

The Namami Gange project aims to take cognizance of the existing programmes for Ganga rejuvenation and integrate it into a new comprehensive plan for the future.



Given the broad arena of the project, an action plan is already being worked in consultation with various ministries. In fact a Group of Secretaries was formed to work out a plan and involved ministries such as water resources, environment, forests and climate change, shipping, tourism, urban development, drinking water and sanitation and rural development. The Group of Secretaries submitted their final report in August 2014. Also, the long term vision of the project will be based on the Ganga River Basin Management Plan being prepared by the Consortium of 7 IITs, first version of which is likely to be available by the end of this year.

In addition, National Mission on Clean Ganga has been working in parallel on a draft strategy taking into account all these developments.

To set the path towards achievement of the long term vision, some medium term recommendations are proposed under the project Namami Gange, these include-

1. Nirmal Dhara- ensuring sustainable municipal sewage management

- Project prioritization in coordination with Ministry of Urban Development (MoUD).
- Incentive for states to take up projects on Ganga Main-stem by providing an additional share of central grants for sewerage infrastructure.

- Uniform standards for both MoUD scheme and Namami Gange programme, 10 years mandatory O&M by the same service provider at par with NGRBA programme and PPP, Mandatory reuse of treated water.
- Expanding coverage of sewerage infrastructure in 118 urban habitations on banks of Ganga- estimated cost by MoUD is INR 51000 Crores.

2. Nirmal Dhara- managing sewage from Rural Areas

- Ministry of Drinking Water Supply scheme for all Ganga bank Gram Panchayats (1632) free from open defecation by 2022, at a cost of INR 1700 Crores as central share.

3. Nirmal Dhara- managing industrial discharge

- Making Zero Liquid Discharge mandatory
- Rationalized water tariff to encourage reuse
- Real time water quality monitoring

4. Aviral Dhara

- Enforcing River Regulatory Zones on Ganga Banks
- Rational agricultural practices, efficient irrigation methods
- Restoration and conservation of wetlands

5. Ensuring ecological rejuvenation by conservation of aquatic life and biodiversity

6. Promotion of Tourism and Shipping in a rational and sustainable manner

7. Knowledge Management on Ganga through Ganga Knowledge Centre

In addition, the Group of Secretaries identified the following activities for the short term to arrest spreading of pollution and keeping it at manageable levels.

1. Scheme for rehabilitation and up-gradation of existing sewage treatment plants (STPs) along Ganga.
2. Ensuring 100% sewerage infrastructure in identified town alongside Ganga depending upon the previous investment etc.
3. In situ sewage treatment in open drains.
4. Support for preparation of detailed project report (DPRs) to keep a shelf of projects ready.
5. River front management for Ghat's development in selected cities and towns.
6. Industrial pollution abatement in Kanpur and other cities.
7. Action plan for Char Dham Yatra – Public amenities, waste disposal and sanitation.
8. Action Plan for Ganga Sagar.

9. Capacity building of urban local bodies.
10. Afforestation – Conservation of flora
11. Conservation of Aquatic life – special attention on Dolphin, Turtles Gharyals
12. Safe disposal of flowers and other puja material
13. Ganga task force (such as, through ex-servicemen, volunteers etc.)
14. GIS data and spatial Analysis for Ganga basin
15. Study of communities depending on Ganga for their traditional livelihood
16. Ganga monitoring centre
17. Guidelines for sand mining in Ganga
18. Feasibility study and diversion of a stream from suitable upstream location of Bhagirathi
19. Assessment of special properties of Ganga Water
20. Communication and public outreach activities etc.

Investment Opportunities

Ganga Rejuvenation is one of the most challenging projects. In the Ganga basin approximately 12,000 million litres per day (mld) sewage is generated, for which presently there is a treatment capacity of only around 4,000 mld. Approximately 3000 mld of sewage is discharged into the main stream of the river Ganga from the Class I & II towns located along the banks, against which treatment capacity of about 1000 mld has been created till date. The contribution of industrial pollution, volume-wise, is about 20 per cent but due to its toxic and non- biodegradable nature, this has much greater significance.

It is apparent that cleaning the river would entail setting up of latest water and solid waste management facilities in these cities. Also, the small and medium sized manufacturing units will have to be sensitized and those without effluent treatment facilities will have to be encouraged to install these facilities. This calls for huge investments in technology as well infrastructure. Given the enormous investments required the government is largely looking at PPP mode. Already several countries –including Germany, Japan, Australia, Israel, Denmark - have expressed interest in sharing their expertise in water management and recycling and conducting impact studies. A consortium of Danish companies is already conducting a pilot project for water management in Rajkot, Gujarat. Also, a dozen of Israeli desalination plants have come up in Tamil Nadu and Hyderabad.

The project represents massive opportunity for companies involved in sectors such as infrastructure, clean technology, solid waste management, waste water management, sanitation and urban planning.



Industry's Voice for Policy Change

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