Eleventh
Pravasi Bharatiya Divas

7-9 January, 2013
Kochi, Kerala

‘Engaging Diaspora: The Indian Growth Story’

FICCI

THEME PAPER

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The Indian Economy – An Overview

Two Decades of Steady Growth

India is one of the fastest growing economies in the world and has emerged as a key destination for foreign investors in recent years. Economic reforms initiated in 1991 have grown in scope and scale and yielded increasingly salutary dividends. Our compounded annual growth rate (CAGR) during the 1990s was about 5.5 %, which grew to 7.3 % during 2000-2010. The government has set a target of 8 % during the current Five Year Plan (2012-2017), based on the demonstrated ability to sustain national economic growth despite the global financial crisis, Euro zone woes and the resultant slack external demand in recent years..

The building blocks of our growth are the high and rising savings and investment rates, large and steadily expanding domestic market, enabling policy framework across sectors, and the entrepreneurial zeal of our workforce. A review of the industrial landscape in recent years demonstrates the growing confidence of Indian entrepreneurs to excel in specialised sectors, such as aerospace, speciality materials, high-end pharmaceuticals, organic dyes and polymers, and corresponding sophistication in service delivery in these sectors.

Further, whether it is pharmaceuticals or chemicals, textiles or food processing, information technology or biotechnology, automobile or heavy engineering, Indian companies have taken a lead to produce globally competitive products and services. Based on their growing strength in the domestic market, their financial muscle, and their ability to turnaround operations, many of our companies are now expanding their overseas operations. This is reflected in Indian companies making significant cross-border mergers and acquisitions, contributing to the economic well-being of both the host country as well as of India. Thus, the Tata Group led the Indian foray into the United Kingdom by acquiring the famed Tetley brand in 2000, and subsequently the iconic Jaguar Land Rover at USD 2.3 billion and Corus at USD 12 billion. Similarly, in the United States, Bharat Forge acquired Federal Forge, while the Mahindra Group has acquired vCustomer Corp, a successful BPO firm for USD 27 million. Farther afield, the Adani Group bought coal blocks in Australia worth AUD 500 million, while the Aditya Birla Group has acquired Novelis as well as Terrace Bay Pulp Mill, both in Canada.

Growing Competitiveness

The global community has responded with growing confidence, investing over USD 160 billion in India since 2005. More heartening are the findings of a Boston Consultancy Group study that over 90% of foreign companies operating in India were earning handsome profits, 60% of whom also report that their India operations are the most profitable of all their global activities. Thus, as per a study conducted by AT Kearney in 2011, India is top-ranked on the Global Services Location Index, while in the latest report by Deloitte on the manufacturing competitiveness index, India is ranked 4th, behind only China, Germany and the United States.[i]

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[i] *Deloitte, Global Manufacturing Competitive Index 2013*

The corporate sector is already leveraging the world's third largest pool of scientists and skilled manpower, low-cost environment for manufacturing and service sectors, respect for law and business-friendly government policies. New investors are looking at a country of over 1.2 billion people, with an average age of 25 years, where 300 million more will join the burgeoning middle class by 2030 that will further stimulate demand. This growth is anchored by a strong financial system and a vibrant stock market. It is projected that India will contribute about 12% to the world's economic growth by 2020.

In 2011, India completed 20 years of economic restructuring and liberalisation, with the major political parties agreed on continuing reforms, although differences do exist regarding the scope, scale and pace of such reforms. Furthermore, given India's unique political milieu - longest list of enlisted voters (about 700 million), fiercely independent judiciary, feisty press, and one of the world's largest media networks - the government is equally committed to ensuring political stability. This drives the public discourse on more equitable distribution of prosperity, including bringing the marginalised populace into the economic mainstream.

This challenge of ensuring a more balanced and inclusive growth model is manifested in various major initiatives of the past decade. Thus, the government's attempts at enhancing food security and promoting rural employment, undergirded by MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act), will provide at least 100 days of employment to a person from a family of four, and ensure this person receives the stipulated minimum wages. This scheme has been extended to cover all districts of India.

This is one of the world's largest public welfare programs, and the government has initiated a direct cash transfer scheme to ensure that funds are electronically transferred directly into the bank account of the worker, thereby minimizing delays and scope for "leakage" in funds reaching the targeted beneficiary. At the same time, when this disbursement is added to the funds being spent under the JNURM (Jawaharlal Nehru Urban Revival Mission), their sheer size means they capture a large chunk of the planned expenditure in the overall federal budget.

The challenge for the government is to balance the twin obligations of allotting adequate funds for these major initiatives, along with a host of smaller schemes, while also keeping its fiscal deficit under check. Currently, a high fiscal deficit, along with food-related inflationary pressures, has constrained the hands of the Reserve Bank of India in easing money supply and reducing the cost of borrowing finance. The resulting high interest rates discourage the Indian businesses, particularly in the manufacturing sector, from scaling up their plant size, or importing capital and expensive equipment, which is borne out by the relative slowdown in the manufacturing output over the past two years.

It should be noted, however, that these challenges are not confined to India, but faced by almost all countries experiencing growth and rapid transformation. Besides, some offsetting factors continue to give long-term advantage to India, including the relatively cheaper wages of skilled and semi-skilled manpower, and frugal innovation, among others.

Frugal Engineering to power Knowledge-Intensive Growth

India is also increasingly recognised for its "frugal engineering", i.e., low-cost, innovative, engineering solutions to create a range of customised products and services for a value-conscious Indian market. Nano, Tata's $2,600 car, is a recent example, which inspired GE's low-cost, high mileage MAC 400 ECG, also being developed in India.

India has been able to set new quality benchmarks across all spheres of the economy. Indian manufacturing companies have won 12 Deming Prizes and 201 TPM awards, making them the largest winners after Japan. India is home to the world's largest constellation of FDI approved pharmaceutical manufacturing facilities outside the USA. Over 80% of the world's CMM Level-5 companies are Indian. Over 75% of Fortune 500 companies source their software from India, and over 200,000 engineers and scientists work at 750 MNC-owned R&D centres across India, producing world-class products.[ii]

The world's automobile majors export cars from their Indian facilities to over 92 countries. Similarly, India is the world's largest producer of milk and milk products, and the second-largest destination for medical tourists.

Continuing the Reforms Process

These impressive outcomes have only strengthened the resolve of the Indian political leadership for further growth. During 2012, the Government of India has undertaken a series of steps to further liberalise the entry of foreign capital and technology into India. This is expected to take the growth trajectory to higher levels.

FDI in retail: The government has allowed 51% FDI in multi-brand retail and 100% FDI in single brand retail, paving the way for international retailers to benefit from the untapped Indian market. The foreign companies will have to source 30% of their content from Indian SMEs, and invest a large amount of funds into creating warehouses, cold chains and other installations that will improve the menu of choices for Indian consumers as well as enhance food safety standards. According to the Indian Staff Federation (ISF), these steps will help the Indian retail sector create 10 million jobs in the next 10 years. The decision will also ensure strong backend infrastructure coupled with technology infusion into agriculture.

FDI in broadcasting: As per the new policy, direct-to-home (DTH), cable network and teleports and mobile TV are now entitled for 74% FDI, up from 49%. As per a government release, "Enhanced access to foreign investment is expected to expand the reach of broadcasting services, thereby improving accessibility of these services, and bring in international best practices".

FDI in civil aviation: The new policy allows 49% FDI in civil aviation which will certainly improve the scope of new joint ventures and will provide a better customer service with lower tariffs.

FDI in pension and insurance: In October 2012, the Cabinet approved an FDI limit of 26% in the pension sector, and raised the FDI cap in the insurance sector from 26% to 49%. While these bills await formal Parliamentary approval, on 23rd December, the Parliament passed the Banking Laws (Amendment) Bill, 2011, which paves the way for issue of new bank licenses.

Cabinet Committee on Investments (CCI): the Cabinet Committee on Investments to be chaired by the Prime Minister was approved by the Cabinet early this December. The committee will review and provide clearances for projects worth over INR 1,000 crores. This will greatly expedite the conversion of pending proposals into actual projects on the ground.

In a related attempt to facilitate investments, in December 2009, the Department of Industrial Policy and Promotion, Ministry of Commerce & Industry (DIPP/MoC&I) set up an agency called Invest India as a joint venture with FICCI. This agency provides investment-related information to the global investors and helps

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[ii] *Various reports by NASSCOM and IBEF*

in expediting regulatory approvals in select cases. It is also enhancing its collaborative engagement with the State Governments, various Central government ministries and departments, with Indian missions abroad, and with the IPAs (investment promotion agencies) of countries with whom India has substantial trade and investment relations.

The above steps have been taken to not only improve the ease of doing business in India but also to open the economy to greater participation by foreign companies as well as investors. These steps have led to rising FDI and FII flows into India. The NRI and PIO community has responded through greater investments into India and played an important role in shaping positive image of India in their country of residence. Thus, according to the latest report by the World Bank, the top recipient of officially recorded remittances for 2012 is India (USD 70 billion).

The Way Forward

All the above steps provide an important brief insight into the growing competitiveness of the Indian economy, the adoption of "best practices", and the ability to produce an increasing array of products and services at internationally competitive prices. The government has also undertaken a series of measures to improve e-governance (including the e-Biz project), with an aim to improve efficiency of services while reducing the scope for delays and sub-optimal customer interface. It is also committed to introducing the GST (Goods and Services Tax), modification of the General Anti Avoidance Rules (GAAR), the use of the Aadhar cards (unique identification document) for the delivery of government payments, and a slew of related reforms to improve the practical impact of these measures for all concerned.

As the government of India sets its target for the country to reach the middle-income status, it is equally committed to promoting "socially and regionally inclusive growth", as Dr. Manmohan Singh stated on December 15, 2012, at the 85th AGM of FICCI. The public sector increasingly looks to the private sector as a partner and stake-holder in accomplishing these tasks. Thus, the government has set a target of$1 trillion during the current Five Year Plan (2012-2017) for the infrastructure sector alone, where the share of the private sector will be USD 500 billion. During the previous Five Year Plan, the target of raising USD 500 billion had been met and exceeded, and the government hopes that the private sector will again rise up to this challenge.

Indian Diaspora in the Gulf Cooperation Council (GCC)

Introduction to the Indian Diaspora

The Indian Diaspora, second largest in the world after China, has an increasingly visible global footprint. Estimated at over 25 million, this eclectic and heterogeneous group is spread across more than 200 countries, with relatively higher concentration in the Middle East, USA, Malaysia, South Africa, Australia and Western Europe. The professional and economic profile of the Indian Diaspora varies significantly across regions, with predominantly blue collar and contract workers in the Gulf versus a preponderance of white collar and technically skilled workforce in the United States and Europe.

With its growing economic prowess, the Diaspora has increasingly stated its desire to contribute more to India's growth, and to become an integral part of the country's comprehensive economic and social development.

Current Level of Engagement with India of the Indian Diaspora in the GCC

For decades,the Indian Diaspora inthe Gulf Cooperation Council (GCC) has been a dependable source of repatriated funds to their families in India. While maintaining the remittances to their families,now the Diaspora wants to deepen and widen its engagement with India – through trade and investment, knowledge exchange, and philanthropic contribution. In pursuit of these laudable goals, this expatriate community, estimated at over fivemillion, is looking for practical assistance and guidance to channel their contribution to more productive uses across India.

On its part, the Ministry of Overseas Indian Affairs (MOIA), under the aegisof the Government of India(GOI),has taken several initiatives in recent years to establish a robust institutional framework to ensure safety and welfare of its overseas population in the Gulf.The allied aim of these networks would be to make it easier for the Diaspora to access and benefit from the many opportunities that India offers.

Figure 1: Estimated Number of Overseas Indians in Select Gulf Countries

Country	Overseas Indians Living Abroad	NRI	PIO
UAE	17,02,911	17,00,000	2,911
Saudi Arabia	17,89,000	17,89,000	NA
Kuwait	5,79,390	5,79,058	332
Oman	5,57,713	5,56,000	1,713
Bahrain	3,50,000	3,50,000	NA
Qatar	5,00,000	5,00,000	NA

Source: Ministry of Overseas Indian Affairs (MOIA) website (http://moia.gov.in/writereaddata/pdf/nrispios-data.pdf)

The Diaspora in the GCC channels its contributions to India primarily through investments and remittances. A major part of the investments from this group flows into the real estate. As far as remittances are concerned, India receives considerable investments from its Diaspora, not surprising given the sheer size and now the growing economic clout of this community. According to the results of a survey conducted by the Reserve Bank of India (RBI) in 2011, India received USD63.7 billion as remittances, marginally higher than the remittances China received from its very large Diaspora. In 2012, according to RBI estimates, India again topped the global list with total remittances of USD 70 billion, outpacing China which received remittances of USD 66 billion. The Gulf region currently accounts for about 27 per cent of the total remittance inflows to India, with the major source countries being UAE and Saudi Arabia[1].

Besides this, the Diaspora has been actively engaged in knowledge exchange and philanthropic activities. For several years, they have participated in multiple short-term exchange programmes and partnered in researches and studies. As suggested at the Pravasi Bharatiya Divas (PBD) programmes in the recent years, Ministry of Overseas Indian Affairs (MOIA) has established the ***Global Indian Network of Knowledge (Global INK)***[2] in 2011 to facilitate exchanges.

Another dimension of the Diaspora's philanthropic contributions to India has been witnessed lately through their growing donations to non-profit and non-government organisations, and via sponsorships to educational institutions.

The Government of India (GoI) too recognises the consistent support and contribution of its Diaspora, and has committed additional resources to attend to it. For instance in 2011, it facilitated the return of about 1.2 lakh people to India who had suffered in the aftermath of the Arab uprising.

Strengthening the Institutional Framework for Enhanced Engagement

In order to enable the Indian Diaspora to better engage with India - economically, socially, politically and culturally - Ministry of Overseas Indian Affairs (MOIA) has created a robust institutional framework.

To ensure better protection and welfare of Indian migrants, the Government of India has signed seven bilateral ***Memoranda of Understanding on Labour*** with the GCC countries, and Malaysia.

In addition, an **Indian Community Welfare Fund (ICWF)** has been established in all Indian Missions/Posts, which supports "on-site" welfare measures including food, shelter, repatriation assistance and emergency relief to overseas Indians in distress.

In order to further assist its Diaspora in the Gulf, an ***Overseas Workers Resource Center*** (OWRC) has been established in the UAE, with similar centres already functional in other Gulf countries. The OWRCs provide need-based information and assistance to emigrants in the Middle East through toll-free helplines and counselling, besides running shelter homes for Indian workers in distress[3]. In India, a ***Migrant Resource Centre*** (MRC)[4] has been established to work as a walk-in counselling centre and to provide

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[1]Source: RBI Study on Remittances from Overseas Indians; Modes of Transfer, Transaction Costs and Time Takenhttp://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/01ART120410.pdf

[2]Global INK is an online platform for knowledge exchange between Global Indians and their counterparts in India, in the areas of Environment, Healthcare, Science & Technology and Innovation. Visitwww.globalink.in for more details.

[3]More information is available at www.owrc.in

[4]Primary idea behind the establishment of MRC is to disseminate information on legal, organised and humane migration; risks involved in the illegal migration and diversify the emigration base by informing intending emigrants about the various opportunities available in the member states of the European Union and the entry requirements for the same.

telephonic helpline for information dissemination and grievance re-dressal of the Overseas Indian Workers. An Overseas Indian Centre (OIC) has also been set up in Abu Dhabi to specifically meet the needs of the Indian Diaspora in the Gulf region.

Another long standing Diaspora request - for **voting rights** - has now been addressed by enabling the **registration of Overseas Indians** (holding Indian passports) under the Representation of Peoples Act, 1950, and as a result they can now cast their franchise in Indian elections.

In addition, Ministry of Overseas Indian Affairs (MOIA) has established institutions such as the ***Overseas Indian Facilitation Centre (OIFC)***[5]***, Prime Minister's Global Advisory Council of Overseas Indians***[6]***, Indian Council of Migration (ICM)***[7]***, Global Indian Network of Knowledge*** (Global-INK), and a ***Pravasi Bharatiya Kendra*** (PBK)[8], which provide a strong, efficient and reliable institutional framework to facilitate and enhance the Diaspora's multi-faceted engagement with India.

Another aspect of Ministry of Overseas Indian Affairs (MOIA)'s initiatives is to look after the Diaspora's philanthropic contributions. Accordingly, it has set up the ***India Development Foundation*** (IDF)[9] to lead Overseas Indian philanthropic capital into India's social development efforts. The IDF is a not-for-profit trust serving as a credible single window to facilitate smooth flow of the Diaspora's philanthropy into India.

In another significant move to secure the well-being of the Diaspora and fulfil its resettlement needs, Ministry of Overseas Indian Affairs (MOIA) has introduced a Pension and Life Insurance Fund scheme called the ***Mahatma Gandhi Pravasi Suraksha Yojana*** (MGPSY) for the Overseas Indian workers who hold passports that have an ECR (Emigration Check Required) stamp[10]. This is a secure and well regulated scheme to keep the Diaspora's earnings safe.

Ministry of Overseas Indian Affairs (MOIA) also organises annual conferences and meetings with the Heads of Missions of the GCC countries, and annual consultations with the governments of States of India which send a large labour force overseas. These consultations enable regular review of the schemes and programmes for welfare and protection of overseas Indian workers and help in taking further steps to increase its outreach.

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[5] *OIFC was set up by Ministry of Overseas Indian Affairs (MOIA) in the year 2007 as a not-for-profit organisation in partnership with the Confederation of Indian Industries (CII). OIFC's objective is to facilitate overseas Indians expand their economic engagement with India. More information is available at www.oifc.in*

[6] *The Prime Minister's Global Advisory Council (PMGAC) serves as a high-level body to draw upon the talent of the best overseas Indian minds wherever they might reside.*

[7] *The Indian Council of Migration (ICM) formerly known as Indian Council of Overseas Employment (ICOE) is a 'not-for-profit' society established by the Ministry of Overseas Indian Affairs (MOIA) in July 2008 to serve as a think tank on all matters relating to 'International Migration'. ICOE undertakes empirical, analytical and policy related research, implements pilot projects to document good practices and assists in capacity building of stakeholders at the sub-national level.*

[8] *The Kendra will be a center for overseas Indians, serving as the focal point for activities for mutually rewarding economic, social and cultural engagement between India and its Diaspora. The Kendra will have facilities such as a library, a research center, meeting rooms, a cultural center, auditoriums and business centers.*

[9] *More information is available at www.idfoi.org*

[10] *The objective of MGPSY is to encourage and enable the overseas Indian workers by giving government contribution tosave for their Return and Resettlement (R&R), save for their old age and obtain a life insurance cover against natural death during the period of coverage.*

The Way Ahead

India is closely coordinating with the Gulf to expand collaboration in various fields such as infrastructure development, services and trade. Indeed, India is seeking to conclude a Free Trade Agreement soon with the GCC, which supplemented by the strong political ties between the two sides, is expected to galvanise rapid growth in trade, setting up of businesses in each other's territories, and greater investment flows.

India places great value in a sustainable and symbiotic relationship with its overseas population. It recognises the contributions made by its overseas population to the economy and progress of the host nations, and seeks to develop an inclusive agenda on migration and for two-way engagement between India and overseas Indians. While a number of initiatives have been taken up to facilitate this engagement, as discussed earlier, the annual PravasiBharatiya Divas - the world's largest Diaspora congregation - still remains the most potent symbol and platform for India and its expatriate community to articulate their close ties, and to explore means to nurture and further solidify their mutual bonds.

Skill Sector: Current Status, Trends, Acts & Regulations

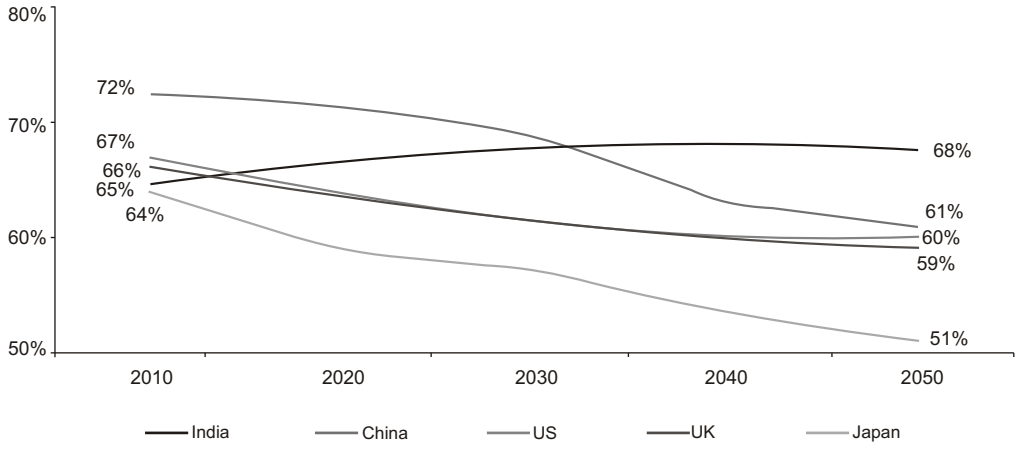
I. Current Status and Trends

The Indian economy has been growing despite the global economic downturn and is seen as an economy full of opportunities. The challenge is to fulfill the demand for skilled manpower across sectors. According to NSDC estimates, about 500 million people require skilling and up skilling by 2022.

The 1.21 billion Indian population is rapidly integrating into the global economy. India's population is the 'youngest' in the world, with a large proportion of the work force within the age group of 15-59 years. Therefore, India has a great opportunity to meet the future demands of the world, and can become the worldwide sourcing hub for skilled workforce. India's demographic dividend can be leveraged to meet the skill needs in other countries and jurisdictions primarily because of the following advantages:

Low median age: India has one of the youngest populations in the world with a median age of 25 in 2010 as compared to 34 for China, 45 for Japan and 27 for the US.

Figure1: Working age (15-64 years) population (% of total population)



Source: United Nation Population Division

Largest population in the working age group: Over the next 20–30 years, India is estimated to have one of the largest populations in the working age group (15–64 years). While most of countries, particularly developed ones, are likely to witness a decline in the working age population, India will see an increase, with approximately 1 billion people in the working age group by 2050.

Large English-speaking population: India has a large pool of educated English-speaking population, which can be capitalized to become a major sourceof human resources to other countries.

II. Existing Skills Framework in India

The Government of India has formulated the **National Skill Development Policy, 2009** which envisages the expansion of current capacity for skill development in the country to achieve the target of skilling 500 million people by 2022. It envisions establishment of a National Skill Development Initiative with the following mission:

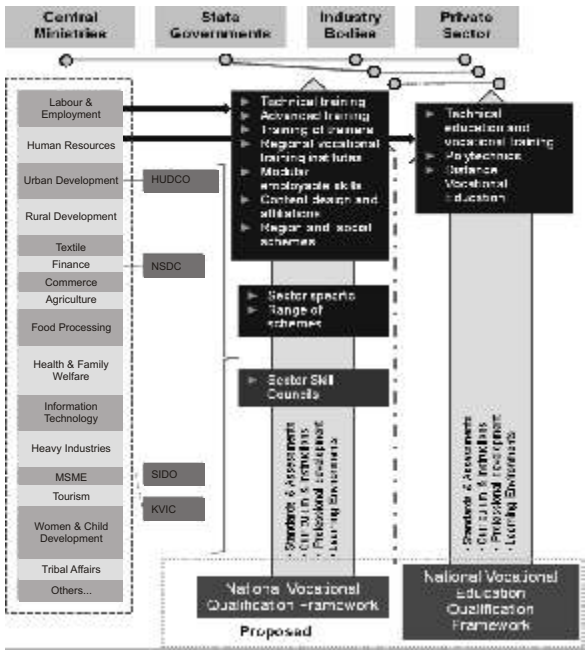
"National Skill Development Initiative will empower all individuals through improved skills, knowledge, nationally and internationally recognized qualifications to gain access to decent employment and ensure India's competitiveness in the global market."

Table 1: Proposed Structure for Skill Development

The salient features of the policy include setting up of a system, which:

- is driven by demand from the labour market
- focuses on new and emerging occupations and promotes excellence
- delivers 'competencies' in line with nationally and internationally recognized standards
- lays emphasis on research and planning, and
- provides adequate participation opportunities to women, disabled persons and economically backward sections of the society.

A three layer structure has been created for developing skill scenario in India:



A. Prime Minister's National Council on Skill Development:

Prime Minister's National Council on Skill Development under the Chairmanship of Hon'ble Prime Minister has been set up as an apex institution for policy direction and review. The Ministers for Human Resource Development, Finance, Industries, Rural Development, Housing and Urban Poverty Alleviation, Labour and Employment and Micro Small & Medium Enterprises are members. Principal Secretary to the Prime Minister is the Member Secretary to the Council.

B. National Skill Development Co-ordination Board (NSDCB):

A National Skill Development Co-ordination Board has been set up under the chairmanship of Deputy Chairman, Planning Commission. Secretaries of Ministries of Human Resource Development, Labour and Employment, Rural Development, Housing and Urban Poverty Alleviation and Finance are members.

Functions of NSDCB would be:

(i) Enumerate Strategies to implement the decisions of the Prime Minister's National Council on Skill Development

(ii) Develop appropriate and practical solutions and strategies to address Regional & social Imbalances, quality of vocational education & training, evolve robust regulatory structure, private participation strategies and evolve sectoral action plans.

(iii) Encourage the State Governments to put their activities in such structures that may be modeled along similar lines or in any other way as deemed suitable by the State Governments.

(iv) Monitor, Evaluate and analyze the outcomes of the various schemes and programmes and apprise the Apex Committee on the same.

C. National Skill Development Corporation (NSDC)

National Skill Development Corporation (NSDC) is a not-for-profit company formed in 2008-09. The NSDC is a first-of-its-kind Public-Private Partnership (PPP) initiative in India that facilitates skill development. A large part of its skill development efforts are directed at unorganised sectors.

NSDC acts as a catalyst in skill development by providing Viability Gap Funding to Enterprises, Companies and Organisations that provide skill training. It will also develop appropriate PPP models to enhance, support and coordinate private sector initiatives.

The differentiated focus for the 21 sectors under NSDC's purview and its understanding of their viability will make every sector attractive to private investment.

III. Key Scheme and Initiatives

a) Government of India:

Ministry of Labor & Employment

A large part of the present infrastructure for vocational training such as the Government and Private ITIs falls under the MoL&E. The MoL&E has in place various schemes linked to quality of training, employment linkages and up gradation of infrastructure for skill development.

- Craftsmen Training Scheme
- Upgradation of 1396 ITIs through PPP
- Apprenticeship scheme
- Centre of Excellence (CoE) scheme
- Modular Employable Skills (MES) scheme
- Other schemes

Ministry of Human Resource Development

Technical education and vocational training (TVET) leads to human resource development through the means of creation of skilled manpower, enhancing industrial productivity and improving the quality of life. Ministry of Human Resource Development functions through its following two departments:

- Department of School Education and Literacy –for enabling TVET programmes in the senior secondary schools
- Department of Higher Education –for technical education

The Ministry of Human Resource Development has multiple schemes for facilitating skilled manpower creation:

Table 2: Schemes for Skilling by Ministry of Human Resource Development

Schemes/ Programmes	Duration	Target Group	Details
Vocationalisation of Secondary Education (6800 schools covered)	2 years	Students who have passed 10th class	● Vocational education is provided in 9,619 schools with 21,000 sections covering about 1 million students. ● The scheme is proposed to expand vocational education to 20,000 schools and the intake capacity to 2.5 million by the year 2011-12
Polytechnics (1244) + Institutions for diploma in pharmacy (415), hotel management (63), architecture (25)	3 years diploma	Students who have passed 10th class	● Offers diploma courses in Civil, Electrical, Mechanical Engineering, Electronics, Computer Science, Medical Lab technology, Hospital Engineering, Architectural Assistantship etc.
Community Polytechnic Scheme (675 CPs) the rural sector	3 to 6 months	Poor sections of society in both rural and urban areas	● CPs act as focal points to promote the transfer of Science and Technology to
Jan Shikshan Sansthan (JSS) (157 Vocational Training Centers run by NGOs offering more than 250 courses)	Need based (1- 4 weeks)	Disadvantaged groups of adults. Priority to adult neo-literates/ semi literates, SC and ST, women/girls, oppressed, migrants, slum/ pavement dwellers and working children	● Acted as a district level resource to organize vocational training and skill development programs.
Support for Distance Education & Web based Learning (NPTEL)	Designing course material - time bound project	Engineering and physical sciences under-graduate/ post-graduate, all teachers/ faculties in Science and Engineering field	● Launched in 2003, the support is meant to enhance quality engineering education in the country by developing curriculum based video courses (at least 100) and web based e-courses (at least 115) to be prepared by 7 IITs at Delhi, Bombay, Madras, Kanpur, Kharagpur, Guwahati, Roorkee and IISc
NIOS - Distance Vocational Education Programmes	6 months to 2 years	5th, 7th and 8th and 10th pass	● Has a network of 11 Regional Centers and about 2067 study centers .There are about 1063 accredited vocational institutes. ● The cumulative enrolment in VET during the last five years is 93,000.
Apprenticeship Training for students of +2 Vocational stream	One year	Students passing out of +2 Vocational Stream	● Vocational courses are covered in different areas of the Apprentices Act 1961
National Programme on Earthquake Engineering Education (NPEEE)	Faculty development through short-term crash programmes	Recognized engineering colleges/ polytechnics and schools of architecture having related academic degree of diploma programme	● NPEEE was made with the objective of training the teachers of engineering colleges, polytechnics and schools of architecture, and to develop suitable curriculum.

Ministry of Rural Development

The Ministry of Rural Development (MoRD) is laying emphasis on ensuring inclusive growth and is working towards the mandate of benefitting young people from the poorest and most vulnerable sections of the society by imparting skills and providing gainful employment. Key schemes launched in this direction include:

- Special Projects for Placement Linked Skill Development of Rural BPL Youth under Swarnjayanti Gram Swarozgar Yojana (SGSY- SP)
- Rural Development and Self-Employment Training Institutes (RUDSETI)

Other Ministries and Departments

Various other ministries under the Government are engaged in large number of skill development activities for their sectors. Some of the key initiatives taken by these ministries are listed below:

Table 3: List of Government Initiatives in Skill Development

Ministry/ Department	Vocational Education and Training programs

Agriculture	• Training in agricultural extension (21 training centres)
	• Training in use of agricultural implements and machinery
	• Soil conservation training center
	• Cooperative education and training
	• Educational institutions:
	  ❖ One Central Agricultural University
	  ❖ 31 State Agricultural Universities (SAUs)
	  ❖ 4 National Institutes of Indian Council of Agricultural Research

Food processing	• Established more than 300 food processing and training centers • Training institutions: • Central Food Technology Research Institute • Paddy Processing Research Centre (PHTC) • Council of Entrepreneurial Development Programme • Entrepreneurship Development Programme for development of human resources

Health and family welfare	• Promotional training of female health assistants in 42 training centers
	• Basic training to health workers through:
	  ❖ 478 Multipurpose Health Worker Training Schools (MPW) for women
	  ❖ 28 Health and Family Welfare Training Centers (HFWTC) and 30 MPW for men

Ministry/ Department	Vocational Education and Training programs
Heavy industries and public enterprises	● Counseling, retraining and redeployment of workers of Central Public Sector Enterprises (CPSEs)
Information Technology	● DOEACC - O level ● CEDTI conducts courses in the field of electronics, telecommunications, IT, process control and instrumentation
MSME (Small Industries Development Organization (SIDO))	● Entrepreneurship Development Programme ● Skill Development Programme (SDP) ● Management Development Programme
Khadi & Village Industries Commission under Ministry of MSME	● 51 training centers run 35 types of programs
Social justice and empowerment	● National Institute of Mentally Handicapped ● National Institute for the Orthopaedically Handicapped ● Institute for Physically Handicapped ● National Institute for the Hearing Handicapped ● National Handicapped Finance and Development Corporation ● National Scheme of Liberation and Rehabilitation of Scavengers and their Dependents
Textiles	● The Integrated Skill Development Scheme (ISDC) for the textile and apparel sector with the launch of ATDC-SMART (Skill for Manufacturing Apparels through Research and Training) ● Decentralized training program with 24 weavers service centers,13 power loom centers and many other boards and councils
Tourism	● 15 Food Craft Institutes under state governments
Tribal affairs	● Vocational training centers (VTC) in tribal areas
Urban development and poverty alleviation	● Urban Self Employment Programme under Swarna Jayanti Shahari Rozgar Yojana (SJSRY)
HUDCO and others in construction sector under Ministry of Urban Development & Planning Commission	● Construction Industry Development Council (CIDC)
Women and child development	● Support to Training and Employment Programme for Women (STEP) ● Women Empowerment Programme in collaboration with IGNOU (Training programme on "Empowering women through SHG")

Private sector initiatives for vocational training

Though the primary responsibility of fostering vocational education and training in the education system rests with the government and academia, India's corporate and non-government sector has also realized the need to actively participate in providing training to current and potential employees.

Initiatives by companies

In order to bridge the industry-academia disconnect and meet the shortage of higher education infrastructure in the country, organizations have realized the need to establish in-house training facilities. Through these facilities, they not only make potential employees job-ready even before they enter the organization, but also provide them with the right skill-set molded according to practical industry requirements.

Such training practices are prevalent across both the manufacturing and services sector. Some of the key examples are listed below:

Table 4: Training Practices in Manufacturing Sector

Manufacturing sector[1]		
Sector	**Company name**	**Training initiative**
Construction	Larsen & Toubro	• L&T has established Construction Skills Training Institute (CSTI) in Chennai, Panvel, Ahmadabad, Bangalore, Hyderabad, Delhi and Kolkata to impart construction vocational training.
Textile	Vardhman Group	• The Group has established Vardhman Training and Development Centre (VTDC) at Ludhiana to enhance employee skills across all functions.
Electronic goods	Godrej Industries	• Godrej has recently tied up with The George Telegraph Training Institute (the pioneer of vocational training in Eastern India), to launch specialized courses in refrigeration, air-conditioning and washing machine. Upon completion of the course, deserving students will be offered employment with Godrej.
Automotive	Maruti Suzuki India Ltd. (MSIL)	• MSIL has tied-up with 17 ITIs (November 2010) and has placed nearly 400 students in their service network. It plans to ramp up its network to 53 ITIs and absorb 500-600 more ITI students in the coming months. • It has also tied up with other institutes such as BGS Institute of Science & Management and ABT Technical Institute to conduct Maruti-certified courses. • MSIL has also set up a Technical Training Centre (TTC) to cater to the training needs of the employees working in the manufacturing domain and equip them with the latest technologies.

[1] *"Where Are India's Skilled Workers?," Bloomberg Businessweek website, http://www.businessweek.com/magazine/content/11_03/b4211008095156.htm, accessed 19 July 2011*
"Careers," Vardhman Group website, http://www.vardhman.com/careers_overview.asp, accessed 30 July 2011

Table 5: Training Practices in Services Sector

Services sector[2]		
Sector	**Company name**	**Training initiative**
Telecom	Bharti Enterprises	• Centum Learning, a Bharti Associate Company, provides end-to-end learning and skill-building solutions to enhance employability and bridge the talent gap. • It currently works with Bharti Airtel and other Bharti Group companies such as Bharti AXA Life Insurance, Bharti Walmart and Bharti Retail. • It has set up more than 170 centers in 150 cities across India.
Retail	ITC	• ITC Wills Lifestyle has tied up with professional courses provider NIS Sparta, part of the Reliance ADA Group, to provide training in retail management.
Hospitality	Grand Hyatt	• Hyatt Hotels Corporation has its in-house training initiative, School of Hospitality at Grand Hyatt Mumbai. • It also has three more schools of learning: School of Leadership, School of Management Studies and School of General Studies.
Information technology	Infosys	• Infosys's global training center in Mysore is one of the largest corporate training establishments in the world, which can accommodate 15,000 people.
Financial services	ICICI Bank	• In association with Manipal Education, ICICI has formed ICICI Manipal Academy (IMA) to train the bank's new recruits in banking and finance. • The institute intakes 250-300 students every three months.
Aviation	Pawan Hans Helicopters Limited (PHHL)	• PHHL training institute provides Aircraft Maintenance Engineering(AME) courses to impart knowledge of helicopter and its systems to students.

India can achieve this dream through building partnerships and convergence models. Government is actively engaging in strategizing, planning and funding various programs and initiatives at the national level. The Industry and the corporate houses have also come up with their own initiatives to accelerate the whole process. The private sector has been taking several initiatives on its own and in collaboration with the government and international entities to upgrade in-house training facilities and also provide training to potential employees to impart them the skills necessary for jobs. Many large corporations have established training facilities that offer world class training programs, thereby creating an environment of e-learning and innovation.

New destinations such as Australia, Singapore and New Zealand have also become popular for skilled Indian professionals.

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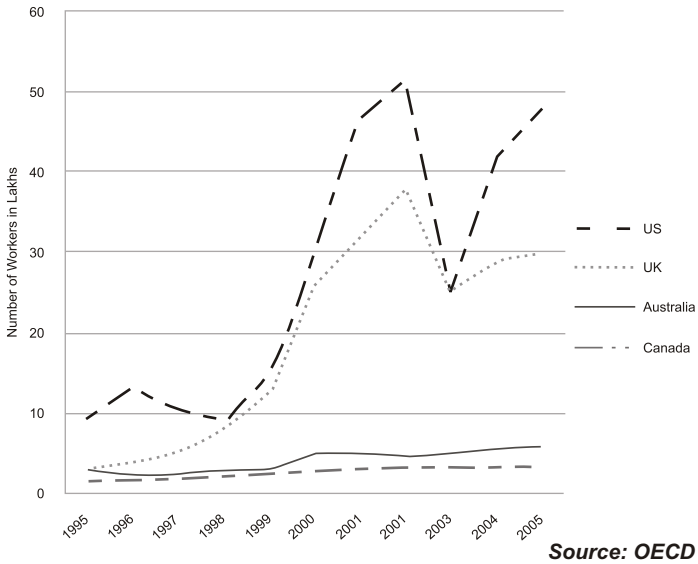
[2] *"Case for Setting up Sector Skill Councils in India," Technopak, 21 April 2009, pg.10*
"NIS Sparta in deal with ITC Wills Lifestyle," Business Line website, http://www.thehindubusinessline.com/todays-paper/tp-marketing/article1658942.ece , accessed 18 July 2011
"Grand Hyatt Mumbai launches School of Hospitality," Hospitality biz India website, http://www.hospitalitybizindia.com/detailNews.aspx?aid=5709&sid=37, accessed 19 July 2011

"Australia has opened its doors to skilled workers from India to handle the shortage of skilled workers. We have made some changes to our Skilled Migration Policy to get more skilled talent from India…India figures among the top three countries in providing manpower to us"

- David Holly, Australian Consul-General for South India (June 2011)

Figure 2: Outflow of skilled Indian workers to principal, Destination countries



Source: OECD

Engaging the Diaspora - A 3i approach

Infrastructure

As per the approach paper to the 12th Five Year Plan, vocational education at the school level and vocational training through Industrial Training Institutes (ITIs) and Industrial Training Centers (ITCs) need significant expansion and overhaul.

Investments for Skills

One of the key outcomes envisaged of the National Skills Policy is to generate “adequate participation of women, disabled persons and disadvantaged groups including economically backward & minorities in skills development. This is to be achieved by enhancing their access to training, improving employability and increasing employment opportunities for them”. While there is a lot of effort towards inclusive skills development, the need for investments to make skills accessible to the learner is a must.

Innovation to localise best practices

Skills qualifications are the backbone to deliver trained, certified employees which in turn facilitates productive businesses and strong economic growth. There is a growing need to bridge the academic and vocational training systems. An integrated system enables acquisition of qualifications and certifications in a flexible and non hierarchical pathway.

The Diaspora involvement in a discussion on the various challenges towards learner mobilization, use of technology, e-learning, and other dimensions of innovation through discussion on best practices and case studies from around the world shall support India's vision for training 500 million people over 10 years.

Skills Development: The Way Ahead

The competitive world today demands not only skilled resources but also trained and certified manpower to address challenges impeding growth and converting them into future opportunities. India is the centre of youngest English speaking population and the objective of training such a pool of talent requires large scale investment. The government is proactive on its part and has designed flexible policies to attract the investment in skill development.

The opening up of Sector Skills Council shall focus more on skills development by improving the sector related skilling requirements country as a whole by improving the sector related skilling requirements. The introduction of the World Skills Competition is also expected to popularize vocational courses among youths as a career by choice and not by chance.

A comprehensive strategy is thus needed to enhance the nation's employable skills. It must begin by preparing a catalogue of the entire range of vocational skills needed to support the development of the country. The network of vocational training institutes and the range of vocational skills taught needs to be expanded substantially to impart those skills for which institutional training is most suitable. The private sector, which promoted the rapid proliferation of computer training institutes throughout the country, should be encouraged to recognize the commercial potential of vocational training in many other fields.

a) Improve quality

- Quality training of faculty with industry participation
  - Adopt flexible teaching methodology facilitating movement of faculty to industry and industry personnel to institutions.
  - Design fellowship programs for faculty
  - Upgrade the faculty with the current and upcoming trades and technologies
- **Development of curriculum with focus on IT**
  - Increase the usage of computer-aided programs in the curriculum
  - Lay more focus on imparting practical on-the-job training
  - Link the urriculum to practical industry experience
  - Prototype equipments and delivery structures may be promoted
- **Promote PPP model for infrastructure development**
  - Promote profit making corporate model in the system to attract investments
  - Ease regulatory hurdles an provide single window clearance to private players
  - Outsource short-term courses to the organizations
- **Robust certification and standard setting mechanism**
  - Nationally recognized qualifications framework to be set up to create a credible system of certificaton to ensure that skills are portable and recognized across sectors, industries, enterprises and educational institutions
  - Industry to collaborate with the government to establish an appropriate certification mechanism

b) Build a brand and spread awareness

- **Mass awareness and promotional campaigns of vocational education & training system**
  - Establish information centers where all information about vocational education & training is provided
  - Launch advertising and publicity campaigns to build a brand and change people's mindset toward vocational education & training

- **Skill development centers to be set up in universities**
  - Set up skill development centers in universities to revive the brand and increase visibility.

c) Enhance accessibility

- **Adopt a flexible system**
  - Provide option to shift from vocational training to higher education and vice versa.
  - Allow credit for the number of years spent by an ITI student in training while seeking admission to a university.
- **Integration of vocational education at the school level**
  - Basic technical skills should be imparted at the school level
  - Special reorientation classes to be conducted for school drop-outs through professional career counselling
- **Target disadvantaged groups and backward regions**
  - Special courses to be designed for people in remote areas and economically backward classes.

d) Increase affordability

- **Short duration courses at affordable fees structure**
  - Short-term informal training to be undertaken at nominal fees
- **Incentives to private training providers**
  - Incentives such as tax breaks should be given to private players to keep the cost of training low
- **Availability of easy loans**
  - Easy banks loans at low interest rates to be made available for self employment
  - Loans with income-contingent repayment clause to be extended

The inputs for this paper are based on FICCI E&Y Knowledge Paper on Strategic and Implementation Framework for Skills in India

Heritage and the Diaspora

Introduction

The central role of heritage has a broader consequence of intermingling globalism, where different diasporic nationalities come into direct contact, and yet remain highly distinct. This is true of the role that Diaspora plays in amalgamating cultures and adding layers, while retaining the core values. The Indian Diaspora has been showcasing the juxtaposition of different lifestyles & traditions of our country with the culture of the host countries.

Evolution of the concept of heritage in India

Not only do culture & civilization influence each other, but in India, from times immemorial, culture and civilization have complimented one another. The nationalist construction of cultural heritage from the 18th century onwards, took the form of introducing modern values into our ancient and medieval past. In fact, it would not be incorrect to say that Indian cultural identity was forged in the struggle for freedom and social justice. The early independent India found significant expression of social consciousness with a sense of pride for its heritage in literature, theatre, film and such art forms that gained enormous popularity, acceptance and empathy from its countrymen.

Tangible heritage of India: The legal situation

The first legislation with regard to preservation of historical buildings came during the British rule, with the enactment of what came to be known as the Bengal Regulation XIX of 1810. Later, the Madras government also enacted the Madras Regulation VII of 1817. Legislation Act XX of 1863 empowered the government to preserve buildings, remarkable for their antiquity or for their historical or architectural value.[1]

The Archaeological Survey of India was established in 1861 to look into the archaeological remains and excavations in the country. Later, a number of Acts were promulgated, which collectively led to the Ancient Monuments Preservation Act, 1904 (Act No. VII of 1904)[2] that provided effective preservation, and authority over monuments, both under public and private ownerships. After Independence, the Ancient and Historical Monuments and Archaeological Sites and Remains (Declaration of National Importance) Act, 1951 (No LXXI of 1951) was enacted. This was later repealed by the Ancient Monuments and Archaeological Sites and Remains Act 1958 (No. 24 of 1958)[3], which gave effective powers to the government to preserve the historical and architectural wealth of the country in a systematic way.[4] The Antiquities and Art Treasures Act 1972 (No. 52 of 1972)[5] is the latest Act enacted on 9 September, 1972, for effective control over the moveable cultural property consisting of antiquities and art treasures.[6]

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[1] *See also, Indian Treasure Trove Act, 1878 (Act No. VI of 1878), available at http://asi.nic.in/pdf_data/9.pdf.*

[2] *The Ancient Monuments Preservation Act, 1904, as modified up to the 1st September, 1954.*

[3] *See also, The Ancient Monuments and Archaeological Sites and Remains Act 1958, Act no. 24 of 1958, available at http://asi.nic.in/pdf_data/6.pdf*

[4] *For rules regarding the site preservation see "Ancient Monuments and Archaeological Sites Rules 1959", as reprinted in The Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii), New Delhi: Government of India Press, 1959.*

[5] *For details, see "The Antiquities and Art Treasures Act, 1972 (Act No. 52 of 1972), available at http://asi.nic.in/pdf_data/8.pdf.*

[6] *For rules of the 1972 Act, see The Gazette of India, Extraordinary, Part II, Section 3, Sub-section I, New Delhi: Government of India Press, 1973.*

The Act regulated export trade in antiquities and art treasures, and prevented smuggling of, and fraudulent dealings in, artefacts and antiquities. It also empowered the government to compulsorily acquire antiquities and art treasures for preservation in public places. This Act was later supplemented with the Antiquities and Art Treasure Rules 1973. A number of states in India have also enacted legislation to preserve antiquarian treasures, and stop smuggling of historical artefacts outside of India[7].

Presently, the Government of India has launched the National Mission on Monuments and Antiquities for a period of five years. The government has also amended the 1958 Act to establish a National Monuments Authority to effectively perform repair and renovation of protected monuments.[8]

Tangible heritage of India: The beginning of research

The tangible heritage of India constitutes of architectural heritage, town planning and landscape design. This list runs from the ancient times to modern day constructions. India has a rich heritage of architecture, right from the early civilisation of Harappa & Mohenjodaro to the Hindu, Jain & Buddhist temples of South India, to the landscape gardens & mausoleums of the Sultanate and Mughal periods, right down to the intermingling of Victorian finesse & Indian eloquence in buildings of the colonial era. There is a lot to preserve and to pass on to our future generations.

Sir William Jones, of the East India Company, pioneered archaeological and historical researches in India and brought together a group of antiquarians to form the Asiatic Society of Calcutta in 1784. However, before Jones there were other enthusiasts like Tavernier, Finch and Bernier, who carried out surveys of monuments in various parts of the country. Jones' efforts culminated in the publication of a journal called the Asiatick Researches (1788), which brought to light the antiquarian wealth of India through researches and surveys.

Alexander Cunningham was the first person to conceptualise Indian Archaeological Survey in 1848. The Archeological Survey of India is presently the nodal agency to carry out survey and preservation of the tangible heritage of India.

Intangible Heritage of India

Indian scholarship:

Our ancient texts have a lot to teach us about our proud heritage. India possesses a rich heritage of scholarship that remains elusive to the world. The history of the subcontinent is full of inventions as well as scientific and technological discoveries. In ancient India, architecture, astronomy, cartography, metallurgy, logic, mathematics, metrology and mineralogy among others were studied extensively. Bhaskara I elucidated on the concept of the infinite, while Aryabhatta gave several theories regarding planetary orbits and eclipses. The Chakravala method, a cyclic algorithm to solve indeterminate quadratic equations, is commonly attributed to Bhāskara II, (1114–1185 AD). Indians were the first to use Zero as a symbol and apply it to arithmetic operations. Madhava of Sangamagrama and his successors at the Kerala School of Astronomy and Mathematics used geometric methods to derive large sum approximations for sine, cosine, and arctangent. They found a number of special cases of series, later derived by the Brook Taylor series. They also found the second-order Taylor approximations for these functions as well as the third-order Taylor approximation for sine.

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[7]For a details description of the evolution of laws to protect monuments, visit http://asi.nic.in/asi_legislations.asp.

[8]Recently, the Government of India has made rules for the preservation of historical monuments and archaeological sites, see Ancient Monuments and Archaeological Sites and Remains (Framing of Heritage Bye-laws and Other Functions of the Competent Authority) Rules, 2011, The Gazette of India, Extraordinary, Part II, Section 3, Sun-section (i), New Delhi: Government of Indian Press, 2011.

With the growth of scientific knowledge and technology, scientific temper and rational thought became a part of our evolving cultural heritage. Consequently, India emerged as a leader in scholarly heritage. India transferred knowledge and scholarship to other countries, and contributed to the cultural advancement of other civilizations. The first expression of scientific advancement was the systematization of Sanskrit grammar in 4th century BC, by Panini. By the 3rd century BC, mathematics, astronomy and medicine began to develop as separate studies. There were important developments in algebra and geometry; Aryabhatta (5th century AD) and Varamihira (6th century AD) contributed to the knowledge of lunar and solar eclipses. Charaka (2nd Century AD) laid the foundations for Indian medicine. Ayurveda, a system of indigenous medicine, was developed in the ancient period. The medieval period also saw great advance in textile technology such as weaving, dyeing and printing.

Music and Dance:

In India, music is a way of life. Music is integral to expressions of different moods and seasons; varied cultural, religious and folk orientations; every festival and occasion; and is a form of pure entertainment. The music of India includes religious, folk, popular, pop and classical forms. The oldest preserved examples of Indian music are the melodies of the Samaveda that are still sung in certain Vedic Śrautas. India's classical music tradition is deeply entrenched in spiritualism. In Indian music, the musical sound is called 'nada', which is considered as 'Divine Reality' itself. It includes two distinct styles: Carnatic and Hindustani music, both noted for the use of several Ragas.

India also has a very rich tradition of folk music. The extreme cultural diversity creates endless varieties of folk styles. Each region has its own particular style. Folk music is rustic, and represents the larger Indian society. It is often learnt and imbibed over generations.

The history of Dance in India dates back to at least 5000 years. A dancing girl figurine was found in the ruins of Mohenjodaro, and is dated approximately 4th century BC. The popularity of dance in ancient India is evident in the exquisite rock paintings and sculptures found in heritage structures across the country such as Bhimbetka, Sanchi, Ajanta and Ellora, and Khajuraho amongst others. Through the centuries, dance has been a vehicle of worship and expression in India. Its thematic contents are based on the rich mythological lore of the country. The dance techniques are based on a few ancient treatises, like the Natya Shastra of Sage Bharata, which were written nearly two millennia ago. Indian dances consist of three distinct types — 'Nritta' is pure and simple dance with movements of body and limbs; 'Nritya' is linked with facial expressions, hand gestures and symbolic body poses; and 'Natya' has the elements of drama which is, introduced through the use of spoken words. All the types involve the use of 'mudras', which are well-developed gestures or actions.

Classical and folk dance forms also emerged from Indian traditions, epics and mythology. The major Indian classical dances include Bharata Natyam, Kathakali, Kathak and Manipuri, Kuchipudi, Odissi and Mohini Attam. Each of these dance forms may be traced to different parts of the country. In addition, there are innumerable folk and tribal dances spread all over the country.

Music and Dance have been the building blocks of our heritage. These performing art forms have been instrumental in passing down significant elements of our culture through generations. The Indian Diaspora that is spread far and wide, across every nook and corner of the globe, has not only exposed the world to our tradition of dance & music but also plays an important role in the preservation of Indian art forms.

Ayurveda:

Ayurveda means 'knowledge of longevity'. The history of Ayurveda asserts to around 1500 BC, when ayurvedic fundamental and applied principles got organised and articulated. The historical construction of Ayurveda is traced back to its origins from the Vedas, in particular the Atharvaveda.

Modernisation and Globalisation of Ayurveda

Indigenous Indian medicine survived mainly due to its patronage from patients and community at large.[9] Patronages from the State led to education and practice of devolving the knowledge at family level. During the struggle for independence, Ayurveda assumed an important role as an icon of national identity.

After independence, the Government of India adopted the traditional systems of Indian medicine, including Ayurveda, Islamic Unani medicine, Yoga as well as the south Indian Siddha tradition, and provided a State-sponsored structure of education and practice on the model of Western medicine.

At the start of the third millennium, a process of globalisation occurred, and Ayurveda has not been untouched by it. In the Diaspora, Ayurveda is changing and adapting, as it moves from its pre-modern role in India to a new position as a part of the portfolio of alternative and complementary therapies offered alongside modern bio-medicine.[10]

Ayurveda as medium of Diaspora convergence

There is tremendous potential to revive several traditions of Ayurveda and rebuild our ancient ties through cultural exchanges, joint ventures, and new business opportunities. The Chinese have already built bridges with the countries where the ancient Chinese medicine system, or Kampo, is practiced. Indian Diaspora could similarly join in intensive Ayurveda research, set up joint ventures, and establish ayurvedic spas around the world.

Conclusion: Diaspora and the rich heritage of India

Diaspora could play a vital role by contributing more and more to the semantic load of heritage, both tangible and intangible. The Indian Diaspora can connect with the rich heritage of India through various programmes of the Government of India, and join hands with the private sector. The GOI programmes aim at disseminating knowledge of our heritage across the world.

Indian Diaspora is a ready reference to the evolution of a heightened sense of globalism where the East and West penetrate into one another in numerous ways. Our Diaspora is a symbolic representation of India on the move and with the touch of heritage, such symbolism can give a unique identity to the evolving cultural, social and economic paradigms.

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[9] *http://science.jrank.org/pages/10150/Medicine-in-India-Modernization-Globalization.html.*

[10] *http://www.academia.edu/1466097/Medicine_India_in_the_New_Dictionary_of_the_History_of_Ideas*

Pure Science

Pure Science, also referred as fundamental or basic science, constitutes the pursuit for finding discrete objects and forces of nature as well as the relationships and laws governing them. Traditionally, Pure Science has been associated with physical and natural sciences, however, some research in social and behavioural sciences can also be deemed as pure science, for example, cognitive neuroscience, personality etc.

Science and Technology (S&T) in India

Government of India has given special attention to Science and Technology since independence, with an objective ***"to foster, promote and sustain the cultivation of sciences and scientific research in the country and to secure for the people all the benefits that can accrue from the acquisition and application of scientific knowledge"***. To achieve this objective, several departments like Atomic Energy, Science and Technology, Space, Biotechnology and Scientific & Industrial Research have been set up. India's infrastructure today, in this regard, encompasses S&T organisations under central and state governments as well as public and private sectors working in areas as diverse as agriculture, healthcare, nuclear and space research etc.

India's Science Sector Post-2003: The Science Policy Period

India has been hailed proficient in many areas of Science & Technology. We have achieved world-class excellence in a number of science-intensive sectors such as nuclear power, space technology, satellite communications and defence. Nearly half of the Research and Development spending is incurred in these sectors. A host of new opportunities is emerging across a wide range of scientific and technological disciplines and sub-disciplines, from the development of the latest computers to satellite launch vehicles, drugs and pharmaceuticals.

Last few years have witnessed a rapid growth in the IT sector, with relatively successful performance in other sectors such as biotechnology, drugs and pharmaceuticals. There is continued policy thrust to make the country a key player in the emerging global `knowledge' economy. India, along with the newly industrialising countries of South East Asia, Scandinavia as well as China, is making a fast transition from **imitator to innovator**.

Outlays of central scientific ministries/departments/agencies, since independence till the Eleventh Five Year Plan, are shown in **Table 1**. The data reflects continued commitment of the Government of India towards the need to foster scientific and technological development.

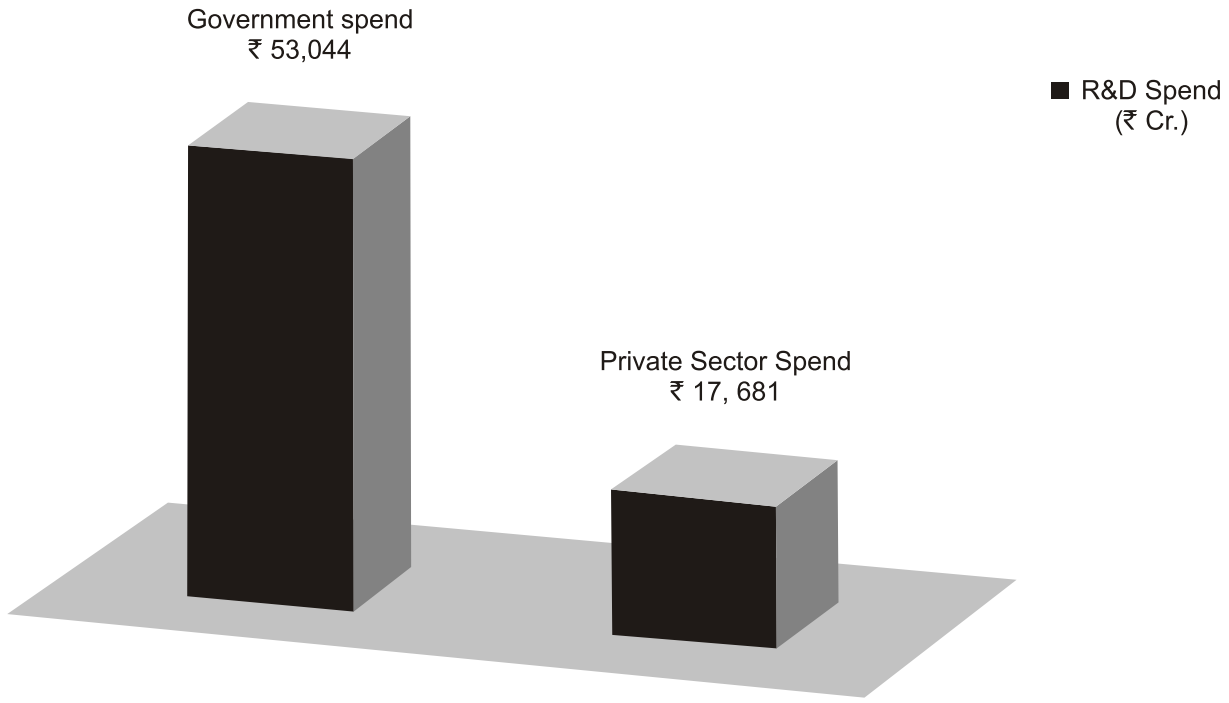
Table 1 Outlays of Central Scientific Ministries/Departments/Agencies in Five Year Plans
(Figures in INR crores)

S&T Deptt./ Agencies	1st Plan (1951-56)	2nd Plan (1956-61)	3rd Plan (1961-66)	4th Plan (1969-74)	5th Plan (1974-79)	6th Plan (1980-85)	7th Plan (1985-90)	8th Plan (1992-97)	9th Plan (1997-2002)	10th Plan (2002-0)	11th Plan (2007-12)
Deptt. of Atomic Energy (R&D Sector)		27.00	33.10	67.48	167.13	248.98	315.00	600.00	1500.00	3501.35	11000.00
Ministry of Earth Sciences/ Deptt. of Ocean Development	0.00	0.00	0.00	0.00	0.00	0.00	110.00	130.00	510.62	1125.00	7004.00
Deptt. of Science & Technology	0.00	0.00	0.00	0.00	58.96	134.87	301.78	640.00	1497.35	3400.00	11028.00
Deptt. of Biotechnology	0.00	0.00	0.00	0.00	0.00	0.00	132.00	265.00	675.00	1450.00	6389.00
Deptt. of Scientific & Industrial Research including CSIR	4.61	14.68	33.04	50.00	81.77	170.00	370.00	655.00	1327.48	2575.00	9000.00
Deptt. of Space	0.00	0.00	0.00	0.00	128.27	245.80	793.96	1804.00	6511.72	13250.00	30883.00

Source: Planning Commission: Data and Statistics

According to the Twelfth Five Year Plan, the total R&D expenditure in India is estimated at about 0.9% of the GDP of INR 78,58,035 crores. Of this, three-fourth of the funding was done through public sector (INR 53,044 crores) and the rest was from private sector (INR 17,681 crores). In 2009, R&D spending of the big 100 Indian companies was about INR 11,500 crores.

Figure 1 : R&D Spending Structure in India



Source: - FICCI-Batelle-ISB Knowledge Paper on Industry Academia Linkages in R&D

Some of India's achievements & strengths in science are highlighted below:

- India's most prized resource is the workforce of over 4 million technical workers, and educational institutions over 1,832 in number.
- India is undertaking world's most economical lunar exploration programme that would soon be upgraded into a manned mission.
- The Indian Space Research Organisation (ISRO) is producing the world's highest-resolution satellite imagery, and has helped over 168,000 villages discover ground water resources.
- Over 380 biotech companies have placed India among the top-twelve biotech destinations in the world. The turnover of Indian Biotechnology Industry stands at over US$ 4 billion.
- India has launched a unique programme to make drugs affordable and available to all, including other developing countries. The 'Open Source Drug Discovery' programme, launched by the Council of Scientific and Industrial Research (CSIR), aims to build a consortium of global researchers, and to bypass the patent regime to make drugs affordable.

Role of Academia and Industry

Academia and industry play a very significant role in Applied Research and Development. There is, however, a need to strengthen linkages between the two so that there is no gap between the research done by the universities and the solutions sought by the industry. Industries could thus benefit by collaborating with universities as they get access to laboratories/ equipment as well as scientists/ technologists, who are involved in state-of-the-art research in specific areas. Another important advantage for industry to work with universities would be to get alternate and fresh perspectives for specific technical problems, besides the skilled manpower to hire from. Universities would also benefit from this linkage in terms of placement of their students along with better prospects of commercialising their researches.

Research and Development in India is conducted at various levels by entities such as academic institutes, public R&D institutes, corporate R&D, multinational companies (MNC) and entrepreneurs. There is an inadequate understanding with respect to the apt utilisation of available technological resources in India due to lack of Intellectual Property (IP) awareness. Both technology management and Intellectual Property management are essential for growth of the R&D sector. Academic institutions all over India have identified this gap in knowledge, and are currently offering various courses to address this issue. Some of the leading institutes offering technology management and related courses in India are shown in **Table 2**.

Table 2 Institutes Offering Technology Management and Related Course in India

S. No.	Colleges	Department	Courses
1	IIT Bombay	SJMSOM	Master of Management withTechnology management elective
2	NMIMS	Mukesh Patel School of Technology Management & Engineering	Dual degree B. Tech and MBA (Tech)
3	NMIMS	Institute of Intellectual Property Studies (Weekend Program)	PG Diploma in IPR Management/ Certificate Course in IP/ Diploma in Patent Law& Practice
4	BITS, Dubai	Management	
5	IIT Delhi	Department Of Management Studies	3 year part time program on technology management
6	Karnataka State Open University, Mysore	Distance Education Course	PG Diploma in Intellectual Property Rights & Innovation Mgt.
7	Anna University	Distance Education Course	MBA in Technology Mgt.
8	IIT KGP	Rajiv Gandhi School of IPL	LLB- 3 years
9	NLSIU	Distance Education Course	PG Diploma in IP Law
10	ABMSP's Yashwantrao Chavan Law College	Not Mentioned	Diploma in Intellectual Property Rights
11	PES Modern Law College	Not Mentioned	Diploma in Intellectual Property Rights
12	NALSAR	Distance Education Course	PG Diploma in Patents Law

Source: FICCI-Batelle-ISB Knowledge Paper on Industry Academia Linkages in R&D

Indian Institute of Science (IISc), Bangalore is a leading institution in India, focusing on high quality research and emphasising on the need for greater industry interaction. It has formed a Society for Innovation and Development (SID) at the IISc campus, which conducts research projects in close collaboration with the industry. IISc has several Research and Development programs with a large number of organisations such as Nokia, General Motors, and Honeywell.

Indian Institute of Science (IISc), Bangalore has the distinction of becoming the first Indian institute to be ranked in Global Employability List 2012. **The 130 years old research institute was ranked 134th in 2011, and has now climbed to 35th position this year**. IISc figures amongst names like Cambridge, Yale Harvard, Stanford, Oxford, MIT, Princeton, Columbia, Goethe University, Frankfurt and Imperial College of London in this list. Indian institutes like the IISC seek diverse students, including Diaspora youth.

As part of the government initiative, Department of Biotechnology (DBT) has constituted Biotechnology Industry Partnership Program (BIPP), a public-private partnership with the focus on IP generation in areas of agriculture, health, bio-energy and green manufacturing. Various funding options by Ministry of Science and Technology are listed in **Table 3**.

Table 3 : Funding Options by Ministry of Science and Technology

Organisation	Scheme	Funding Amount	Target	Purpose
Department of Biotechnology (DBT)	Small Business Innovation Business Research Initiative (SBIRI) Phase 1	Upto Rs.1 Crore, upto Rs.50 lakh as grant and rest as soft loan	Biotech Companies/ Entrepreneurs	Early Stage Funding for high risk, innovative ideas/products for commercialisation
Department of Biotechnology (DBT)	Small Business Innovation Business Research Initiative (SBIRI) Phase 2	Soft loan up to Rs.10 Crores	Biotech Companies/ Entrepreneurs	Early Stage Funding for high risk, innovative ideas/products for commercialisation
Department of Biotechnology (DBT)	Biotechnology Industry Partnership Program (BIPP)	In Rs.Crores, mainly for larger projetcs. Grant, Cost sharing and soft loans depending on partnership modes	Small , Medium and Large companies involoved in R&D	Scheme caters to high risk, transformational technology/ process development
Department of Scientific &Industrial Research (DSIR)	Technology Development and Demonstartion Program (TDDP)	Grants/ Loans, subject to maximum of Rs 250 Lakhs	Start ups possessing protected /licensed IP	Funds for accelerated product development in 9-12 months for faster market entry.
Council of Scientific & Industrial Research (CSIR)	New Millennium India Technology Leadership Initiative (NMITLI)	Grants for Public Institutions and Soft Loan for Private Sector Companies. Few crores for 2 years	Small, Medium and Large companies involved in R&D and Public Institutions	Funds for scientific projects where markets and technology risks are high.

Source: - FICCI- Batelle-ISB Knowledge Paper on Industry Academia Linkages in R&D

Science and Technology Park (S&T Park)

S&T Park is an excellent example of a technology park located at the University of Pune. The key functions of the Park are to manage intellectual property, transfer technologies, build database of emerging technologies, provide training in innovation management, and promote industrial partnership with academia for collaborative research, contract research and joint technological development. It has commercialised over 70 technologies so far, while operating with a lean workforce of 6-10 full-time employees.

According to Vision 2025, it is expected to have 15 lakh graduate scientists, 3 lakh post-graduate scientists and 30,000 PhDs per year. This large Science and Technology manpower, will not only support the national S&T base, but also contribute towards global research and development.

Currently India's advantage lies in the cost-effectiveness of its research. Roughly, India spends only 0.5% of what the world is spending, but we produce 2-2.5% of global scientific literature as listed in **Table 4.**

Table 4 : Some S&T indicators for select countries

Country	Total no. of publications (2006), (change over 1997)	High -impact publications % (change)	GDP $ (2003)	Investment R&D, % GDP	Investment R&D,$B
USA	451028(+18%)	63%(-4%)	10.9	2.68%	292.0
UK	~122000	12.8%(+25%)	1.79	1.89%	33.8
China	78671(+358%)	0.99%(+125%)	1.42	1.31%	18.6
SouthKorea	(+290%)	0.78%(+178%)	0.61	2.64%	16.1
India	26963(+60%)	0.54%(+69%)	0.60	0.77%	4.6

Source: India as a Global Leader in Science; Ministry of Science and Technology -2010

Recent achievements of Indian science and technology

Some of the recent achievements of Indian S&T are shared below:

- Approving and executing mega science projects: These projects are multi- institutional/agency collaborative programs, multi-institutional teams, including international collaboration
- Knowledge Initiative in Agriculture: A programme hailed as second Green Revolution is aimed at promoting collaboration in agriculture and transfer of proprietary knowledge in the sector.
- The Protection and Utilization of Public Funded Intellectual Property Bill, 2008, also known as the Public Funded IP Bill was introduced, which is in-line with the Bayh-Dole Act of the United States, to encourage commercialization of research by universities.
- Setting-up of a transparent and evidence-based regulatory system to make productive use of the biotechnological tools and techniques.
- Creation of R&D centres by over 100 global companies, affirming intellectual capital of scientific and engineering community of the country.
- Women-in-science is a conscious developmental paradigm under a Government of India special task-force, engaged in ensuring that more and more innovation leaders emerge from among our women.
- S&T for Rural Industrialisation, Development & Employment (STRIDE) brings together DST and the Ministry of Rural Development for generating 1 lakh jobs through S&T-based rural enterprises covering 100 districts.
- Special Project Vehicle (SPV) Program is a multi-disciplinary program, which involves multiple stakeholders, such as artisans, small farmers, agricultural labour, local traders etc.; besides NGOs, DRDAs, panchayats, and S&T institutions including local polytechnics. The program is proposed to set up about 500 enterprises, covering around 100 districts.
- Creation of five Rural Technology Delivery Centres operated by S&T voluntary organisations, with technology back-up and support from technology institutions and R&D laboratories.

Case Study: Science and Technology in Kerala

Kerala government has rolled out many innovative programs in the field of Science and Technology. Noteworthy are the creation of a technology facilitation and transfer centre, a biotech and life science park, centre for scientific validation of Ayurvedic practices, a coordination unit for science and technology-based skill upgradation in the traditional industries, and the Srinivasa Ramanujan Institute for capacity building in basic sciences.

An agro biotech park, aimed at promoting Kerala as a prominent research base, is to be developed as an integrated research and development cluster, focused on undertaking R&D in agriculture and agro-driven biotechnology segments, besides providing platforms for commercialisation of research findings. This project will house innovation zone, industry zone and common equipment labs. It has been proposed to set up this project on PPP model.

As part of the project, an R&D zone, centers of excellence, pilot plant facilities for select segments, services zone segments, services zone and a support zone are to be at the park, over an area of 50 acres. **The Science City** will have an environment zone, an energy zone, a space zone and a future zone. These themes would present to the visitors, various ways that the field of science and technology impacts the human life.

Science and the Indian Diaspora- The Synergy

It is imperative to acknowledge the pivotal role played by the Indian Diaspora, in projecting to the world, the standing of Indians in scientific community. Dr Chandrashekhar and Dr Hargobind Khurana are well known examples of the first generation Indian emigrants to have won the Nobel Prize in Science.

Emigration of Indians evolved through the nineteenth century resulting in highly qualified Indian/Asian immigrants from mid-twentieth century onwards. Indian emigrants increasingly consist of highly qualified scientists, engineers and other professionals. The opening-up of the Indian economy in early 90s, coupled with America's IT-led economic boom in the same period, led to huge "flight of Indian IT talent out of India". Today, Indian IT professionals have made a visible, high profile and widely recognised contribution to the industry world-wide.

Scientists of Indian origin abroad are keen to contribute to their country of origin. It is, therefore, important to evolve effective mechanism to deepen linkages with the Indian Diaspora. It's equally important to find new avenues and institutional frameworks to network with S&T professionals of Indian origin abroad, and for accelerating pace of India's progress in science and technology.

Science and Technology professionals of Indian Diaspora have together formed a group called Scientists & Technologists of Indian Origin, also known as STIO, represented by those pursuing jobs in industries, research laboratories, universities and scientific departments located in various countries as well as those successfully performing as entrepreneurs in technology-intensive business and venture capitalists. This group has become an integral part of the overall Indian Diaspora initiative of the Government of India.

Interactions of STIO with home country peers and their S&T initiatives have been mutually beneficial, and could greatly enhance India's excellence in global scientific research.

Way ahead

Keeping in view the Vision 2025, and the existing resources and capabilities of the Indian R&D, there is a need to ensure a sustainable pipeline of talented youth in careers pertaining to scientific research and thus at school level, schemes for early attraction of talent to science is a must. To gain global competence, international collaborations should be initiated to sustain research links with neighbouring countries.

Finally, institutional concepts that were initiated in earlier Five Year Plans like the Inter University Centers and Inter-Institutional Centers for enhancing research and educational linkages for universities, should be expanded further to cover many other inter-disciplinary research areas such as earth-system science, life sciences, computational science, cognitive science, GIS etc., to bring about functional connectivity across universities and domain institutions.

Our Diaspora is well positioned to connect with India's endeavor to push forward the frontier of science and technology.

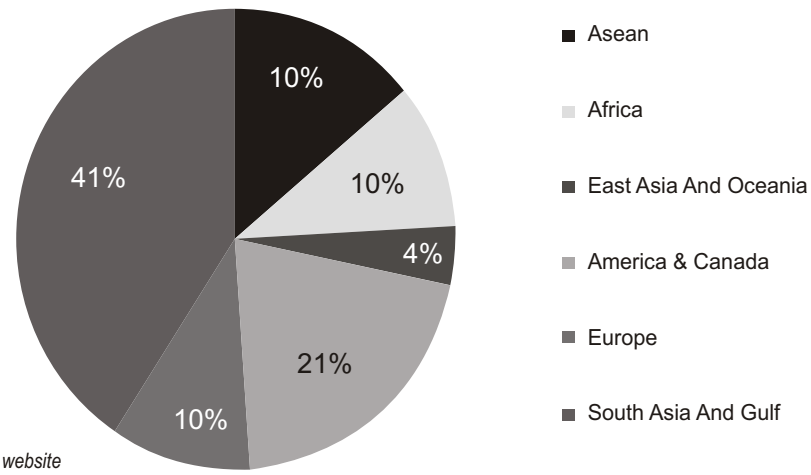
Overseas Indian: Safe Environment

The Indian Diaspora

The Indian Diaspora is estimated to be second largest in the world and has a diversified global presence. The Diaspora, estimated at over 25 million, is spread across more than 200 countries with a high concentration in regions such as the Middle East, the United States of America, Malaysia, South Africa ,Australia and Western Europe (Fig 1).

The Government of India (GOI) places great value on a sustainable and symbiotic relationship with its overseas population.

Figure 1: Spread of Indian Diaspora (Region-wise)



Source: Ministry of Overseas Indian Affairs website

The Indian Diaspora has not only increased in numbers but has been gaining universal recognition for the unique contributions to its host countries, be it skilled and semi-skilled work force in the Gulf region or technocrats and educated professionals of Indian origin.

Members of the Indian Diaspora do play a significant role in mobilizing political support for in their country of residence on issues of vital concerns to India.

The issue of safety of Indians abroad

There have been several reports regarding attacks on Indians abroad,mostly on individual basis . The shocking shootout at Oak Creek Gurudwara, Wisconsin, USA, by an unidentified gunman, has shocked the world; and calls for a mechanism to confront such challenges. The nature of problems faced by our Diaspora in developed nations is different from the ones encountered in Middle East and Gulf countries. In countries like UK, Canada and Australia, the victims are largely reported to be students and young professionals. Indian Diaspora in the Middle-East and Gulf region, however, encounters contractual disputes with the employers like holding back of passports, non payment of salaries and work under stifling conditions.

Steps Taken

On a bilateral basis for the protection and welfare of Indian workers abroad, India has signed Memorandums of Understanding (MOUs) on manpower with UAE, Kuwait, Qatar, Oman, Bahrain, Jordan and Malaysia. The Government has also set up Indian Community Welfare Funds at Indian Missions to provide on site relief and assistance to Indian workers in distress. **India has signed bilateral Social Security Agreements (SSA)** with Belgium, France, Germany, Switzerland, Luxembourg, Netherlands, Denmark, South Korea, Hungary, the Czech Republic, Norway, Finland, Canada, Japan and Sweden. These agreements provide exemption from double payment of social security, export of benefits and totalisation of periods to Indian detached workers in these countries on reciprocal basis, thus facilitating their mobility.

Wherever circumstances so demand, Indian government vigorously takes up the issue of protections of its citizens abroad with the countries concerned.

For instance, in the case of attacks on Indian students in Australia, India had asked the Australian authorities to amend their existing laws pertaining to universities, so that there could be an institutionalized mechanism to ensure the safety of foreign students.

Likewise, in the Gurdwara shooting incident, India was quick to take up the issue with the American government to ensure the safety and security of the Indian nationals. The US administration handled the situation in a manner that instilled a sense of confidence and security amongst the Sikhs settled in USA.

Besides systemic intervention at bilateral level ,India is also pursuing a proactive policy to transform the emigration system .It has notified the Emigration (Amendment) Rules 2009 on 9th July, 2009, revising the eligibility criteria of Recruiting Agents (RAs), enhancing their recruiting capacity and increasing the security amount and service charges. MOIA also takes stringent action against RAs for any malpractices committed by them.

MOIA is implementing the **e-Migrate** project that will provide end-to-end computerized solutions for all processes in the emigration system. The system will link all key stakeholders on a common platform, which will be used by workers, offices of the Protector of Emigrants, Recruitment Agents, immigration officials, employers and the Indian Missions abroad.

National awareness cum publicity campaigns are carried out regularly to create wider awareness among the general public, and particularly among the potential migrants, on the risks of illegal migration and to safeguard against illegal practices by unauthorized intermediaries and fraudulent recruiting agencies.

An Overseas Workers Resource Centre (OWRC)[1], with a 24X7 helpline supported by eight regional languages, assists emigrants intending to go abroad for employment to 17 notified Emigration Clearance Required (ECR) countries.

Indian Community Welfare Funds in Indian Missions provides on-site welfare services to emigrants in distress.

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[1] *www.owrc.in.*
TOLL FREE NUMBER : 1800-11-3090 (For MTNL/BSNL) ;HOTLINE NO : +91-11-40503090

These interventions are explained in detail below.

1. Indian Community Welfare Fund (ICWF)

The 'Indian Community Welfare Fund' (ICWF) provides contingency expenditure incurred by the Indian Missions for carrying out welfare activities for overseas Indian citizens in distress. The ICWF scheme has the following objectives:

- Boarding and lodging for distressed Overseas Indian workers in household/ domestic sectors as well as unskilled labourers
- Extending emergency medical care to the Overseas Indians in need
- Providing air passage to stranded Overseas Indians in need
- Providing initial legal assistance to the Overseas Indians in deserving cases
- Expenditure on incidentals and for airlifting the mortal remains to India or local cremation/burial of the deceased Overseas Indians; in such cases where the sponsor is unable or unwilling to do so as per the contract, and the family is unable to meet the cost
- Providing the payment of penalties of Indian nationals for illegal stay in the host country, where prima facie the worker is not at fault
- Providing the payment of small fines/penalties for the release of Indian nationals in jail/detention centre
- Providing support to local Overseas Indian Associations to establish Overseas Indian Community Centres in countries that have population of Overseas Indians exceeding 1,00,000.
- Providing support to start and run Overseas Indian Community-based student welfare centres in countries that have more than 20,000 Indian students' presence.

According to the Ministry of Overseas Indian Affairs, up to June 2012, around INR 36 crores has been spent to benefit over 27,000 Overseas Indians in distress.

2. Mahatma Gandhi Pravasi Suraksha Yojana (MGPSY)

The Government of India launched the Mahatma Gandhi Pravasi Suraksha Yojana (MGPSY) in May, 2012, on a pilot basis. The objective of MGPSY is to encourage and enable overseas Indian workers, having Emigration Check Required (ECR) passports issued by GOI to ECR countries, to (i) save for their return and resettlement; and (ii) save for their pension. They are also provided Life Insurance cover against natural death, during the period of coverage, without any additional payment by them.

The GOI shall also contribute, for a period of five years or till the return of workers to India, whichever is earlier, as under:

- Rs.1,000 per subscriber, who saves between Rs.1,000 and Rs.12,000 per annum in his/her National Pension Scheme(NPS)-Lite account.
- An additional contribution of Rs.1,000 per annum for overseas Indian women workers, who save between Rs.1,000 and Rs.12,000 per annum in National Pension Scheme(NPS)-Lite account.
- An annual contribution of Rs.900 per annum per subscriber, who saves at least Rs. 4000 per annum towards Return and Resettlement Fund.

- Rs.100/- for life insurance cover of Rs.30,000 per year against natural death, and Rs.75,000 against death by accident, through the Janshree Bima Yojana of Life Insurance Corporation of India (LIC).

There is an integrated enrollment process for the subscribers who will be issued a unique MGPSY account number. On their return to India, the subscriber can withdraw the Return and Resettlement savings as a lump sum.

3. Pravasi Bharatiya Bima Yojana (PBBY)

The Pravasi Bharatiya Bima Yojana is a compulsory insurance scheme for overseas Indian workers having Emigration Check Required (ECR) on the passport.

Scheme for legal/financial assistance to Indian women, deserted/ divorced by their NRI husbands

The scheme provides legal/financial assistance to Indian woman who have been deserted by their overseas Indian/ foreigner husbands, or are facing divorce proceedings in a foreign country.

This assistance will be limited to US$ 3000 per case for developed countries, and US$ 2000 per case for developing countries; and will be released to the empanelled legal counsel of the applicant or Indian Community Association/ Women's organization/ NGO concerned, enabling them to take steps to assist the woman in documentation and preparatory work for filing the case.

According to the Ministry of Overseas Indian Affairs, so far, 27 NGOs have been empanelled by the Indian Missions/ Posts abroad, a sum of nearly INR 50 lakhs has been disbursed by Indian Missions to empanelled NGOs, and 84 Indian women have been helped under the scheme.

Way Forward

While a grievance system has been put in place to ensure the safety of Indians abroad, the Indian government continues to safeguard the interests of overseas Indians through diplomatic channels and by streamlining recruitment process through E-migrate project, and by taking up host of reforms, all of which require a continuous vigil on the part of the Government to ensure welfare and protection of overseas population.

Sources: (Pls refer to Ministry of Overseas Indian Affairs website, http://moia.gov.in/ for various policy initiatives)

[2] *Please see MOIA Annual Report to describe benefits under PBBY.*

Tourism Sector: Current status and trends, policy status, acts and regulations

In 2011, the travel & tourism sector's total contribution to GDP was INR 5,651.0 billion (6.4 per cent of GDP). This is expected to rise by seven per cent in 2012 and by 7.8 per cent per annum to INR 12,891.2 billion by 2022.

The total contribution of travel and tourism sector in 2011 to employment, including jobs indirectly supported by the industry, was 7.8 per cent of total employment (39,352,000 jobs). This is expected to grow by 2.8 per cent in 2012 to 40,450,000 jobs and rise by 1.7 per cent per annum to 47,911,000 jobs in 2022 (eight per cent of the total).[1]

During 2010-2011, 9,869 service providers were certified under Government's 'Capacity Building for Service Providers' scheme surpassing the target of 5,500. Youths trained in 2010-2011 under this programme were 6,981 against the set target of 5,500. Given the high success rate and wide acceptability of this programme, the Ministry of Tourism has expanded the scheme to cover courses such as Housekeeping & Utility, Travel Agents, Bakery, etc. and 100 per cent utilisation of allocated fund (INR 350 crore) was achieved under these schemes in the first four years of the 11th Plan period.

Hunar Se Rozgar (HSR) has emerged as one of the flagship schemes of the Ministry of Tourism, contributing significantly in meeting the skill development challenges of the industry. The Ministry will further expand the scope of the scheme to cover niche products like, Rural Tourism, Adventure Tourism, Wellness Tourism, Eco-Tourism, Caravan Tourism, Golf Tourism, etc. It has proposed to provide training in new sectors such as, travel and tour facilitators, home stay owners/workers, valet parking assistants, spa therapists, beauticians, bell-boys, golf caddies and security personnel for hotels.

Tourism is known for its linkage effects with diverse sectors of the economy; be it creating opportunities in public-private partnership (PPP) in tourism, or issuing norms for responsible tourism.

According to the GoI's assessment, **tourism sector can help alleviate poverty and generate employment opportunities**. In the 12th Five Year Plan special focus has been given to tourism sector.

The Ministry has set up a comprehensive strategy to ensure cleanliness in tourist destinations under the initiative 'Campaign Clean India'. The campaign strives for a balance amongst persuasion, education, sensitisation, training, demonstration and regulation for achieving this goal.

Recent Indian Tourism Statistics

- India's Foreign Tourist arrivals grew by 8.9 per cent to 6.29 million in 2011.
- Foreign Exchange Earnings (FEE) in rupee terms during 2011 was INR 77,591 crore with a growth of 19.6 per cent as compared to the FEE of INR 64,889 crore with a growth rate of 18.1 per cent in 2009- 2010.

[1] *Compiled from various tourism magazines and eNews on tourism*

- Visa-on-Arrival grew by 21.9 per cent during January-April 2012. The facility expanded to 13 countries with the addition of France, Germany and Russia to the list.
- The number of domestic tourist visits (DTVs) to States/Union Territories in 2011 was 851 million as compared to 748 million in 2010, an increase of 13.8 per cent over 2010 as compared to 11.8 per cent in 2010.[2]

Despite slowdown and recessionary trends in the economies of Europe and the USA, **Foreign Tourist Arrivals in India** grew by approximately nine per cent in 2011. India welcomed 6.29 million tourists in 2011 compared to 5.74 million in 2010. The number of foreign tourist arrivals and foreign tourist visits by the end of the 12th Plan is estimated to be 11.24 million and 35.96 million, respectively.

This facility is likely to be extended to nationals from six more countries including Spain and Malta. Between January-September 2012, a total number of 10,816 VoAs were issued as compared to 8,505 VoAs during the corresponding period of 2011, registering a growth of 27.2per cent.

Domestic tourism offers stability during the challenging times of global economic downturn. It has given a support structure to the Indian tourism industry. Besides, the huge potential of domestic tourism, it also leads to national integration, cultural exchange and growth in the domestic consumption. During 2011, the number of domestic tourist visits to States/UTs registered an increase of 13.8 per cent over 2010, as compared to an increase of 11.8 per cent in 2009.[3]

Future Opportunities

The emerging new dimensions of tourism include Golf Tourism, Education Tourism, Domestic Tourism, Luxury Trains, Wedding, Eco-Tourism and Tea Tourism. The average growth of global tourism industry is expected to be four per cent during the next 10 years, but the increase is not dispersed equally. Emerging markets, primarily India, contributes a lion's share of the expansion with an increase of eight per cent.

Smaller cities are expected to lead air-traffic growth in the country; the Government is planning to build nearly **200 low-cost airports in the next 20 years in Tier II and III cities.** This additional aviation infrastructure is likely to be developed through public-private partnership (PPP) model, paving the way for new business opportunities for infrastructure developers. The first phase of growth in the aviation sector was led by low-cost airlines, and the next phase would be driven by low-cost airports.

The market size of the **Indian medical tourism sector** is likely to be more than double and reach USD 2.4 billion by 2015 from USD 1 billion at present. The inflow of medical tourists in India is also expected to cross 32 lakh by 2015 from the current number of 8.5 lakh. Medical travel, health and wellness tourism in India are projected as some of the most important avenues to improve tourism economy. The health-travel industry is increasingly grounded in tourism. Currently, Indian healthcare market is growing at a rate of more than 30 per cent every year. India's share in the global medical tourism industry is expected to climb to around 2.4 per cent by the end of 2012.

India's competitive edge in Healthcare Tourism is globally recognised with only one-fifth cost as compared to the West, far less or no waiting lines, super specialty hospitals and renowned medical practitioners. The top-notch healthcare facilities like cardiology, joint replacement, orthopaedic surgery, transplants and urology are some of the key factors which make India a preferred destination in terms of medical tourism. The states like Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Maharashtra and Delhi are fast emerging as India's best medical centres with several hospitals and specialty clinics.

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[2] *Compiled from various tourism magazines and eNews on tourism*

[3] *Compiled from various tourism magazines and eNews on tourism*

India is also offering other medical services such as yoga, meditation and ayurveda, which are increasingly becoming popular as alternate, non-surgical treatments for various ailments. Large numbers of medical tourists visit India from the Middle East, USA, and Europe and also from neighbouring countries like Bangladesh, Pakistan and Afghanistan to avail high quality and low cost medical facilities.

According to a WTTC (World Travel & Tourism Council) report, India's travel and tourism industry will require capital investments worth INR 5,183 billion (USD 94.5 billion) by 2019. To overcome the hurdle associated with high land costs, the Government is in the process of identifying sites, which could be given on long-term lease for hotel projects.

Business Opportunities

Several hospitality majors are planning to invest in Indian tourism. Among these are IHG (InterContinental Hotels Group), Marriot, Accor, Starwood, Premier Inn and Carlson Rezidor. It is estimated that approximately USD 309 million worth of investment would soon find its way to India. The sustained interest of foreign players in the hospitality market of India reinstates its potential as a strong economic growth driver.[4]

Capital investment and manpower are two other critical aspects. As the travel industry in the country is rapidly growing, India is expected to have around 1,747 million travellers by 2021, which would require 1,88,500 additional hotel rooms. Also, additional investment in hospitality required in the country would be around INR 1, 27,600 crore by 2021. In the past decade, the country has witnessed a host of global brands entering the market, while the domestic brands have grown considerably. This shift reflects that the Indian hotel industry is maturing, and highlights the fact that the country is a prominent market.

With consumers becoming more demanding and price-conscious, the budget and mid-market segments are the possible growth areas. Therefore, budget and mid-market segments have emerged as the most preferred investment categories. Both occupancy rates and room revenues have shown a rise in India. According to hospitality consultancy firm HVS, the world's leading consulting and services organisation), hotel occupancy across Indian cities grew at an average of 1.7 per cent during 2010-11, despite a huge addition of rooms, even as occupancy in Europe declined. The growing demand for hotels in India, even when other markets are saturated, has brought the country in the spotlight. This has led Asian brands from Singapore, Hong Kong and Thailand to look closer home for opportunities to grow. Besides, there is the lucrative weddings market, spa segment, which is luring the Asian hotel chains to India.

As the economy grows and tourism infrastructure improves, an increasing number of travellers will move and upscale to luxury tourism. Relaxation in visa rules and processes will further stimulate international arrivals, compared to other countries.

Way Forward: Future Projections for the Sector

- India's topmost cities will see an addition of around 50,000 new rooms in the next 5-6 years.
- About 14,800 new hotel rooms are expected to add by the end of 2012, of which 2,000 rooms have already entered the market.
- The demand has been strong from both foreign as well as domestic tourists.

- With a total supply of 17,500 rooms in the next five years, the national capital region is expected to see the highest hotel room supply. Mumbai with 10,200 rooms and Bangalore with 9,400 rooms will significantly add to the existing inventory.[5]
- The addition of new inventory will largely be in the potential growth areas around airports, commercial growth corridors, industrial corridors and special economic zones.
- In order to facilitate clearances acquired by hotel projects in a time-bound manner and also provide policy advice for development of the hospitality sector, the Government has approved constitution of a 'Hospitality Development Promotion Basic' (HDPB).
- Hotel and tourism related industries have been declared as high priority, and Foreign Direct Investment up to 100 per cent under the automatic route is permitted in 'Hotels & Tourism Sector', subject to applicable laws/regulations, security and other conditional ties.
- Ministry of Tourism (MOT) has incorporated various measures/requirements of the differently-able persons in the Guidelines for Approval and Classification of hotels under various categories. MOT will ensure that these measures are followed at the time of construction/ implementation of the hotel projects.

India has immense tourism potential with its variety of flora, fauna and monuments, new international and domestic campaigns have also projected India in the right perspective to the global traveller be it individuals, groups or business travellers. Today, India is emerging as a 365-day travel destination in international markets catering to diverse requirements of those who seek to visit the most diverse cultures in the world. The domestic tourism too offers enormous opportunities and growth prospects to the Diaspora to engage with India.

[5] *Compiled from various tourism magazines and eNews on tourism*

Technology and Innovation

I Overview:

Since Independence, India has endeavoured to bring economic and social change through science, technology and innovation. The effort has been both on upgrading traditional skills to make them relevant and competitive and developing advanced capabilities in frontier areas of Science and Technology (S&T). The visionaries who led the growth of S&T in India were convinced that S&T could play an important role in transforming India in to a modern and industrialised society. Experience and results show that this confidence was well placed.

Government of India has declared 2010-2020 as the **'Decade of Innovation'**, which rightly emphasises the importance of innovation in our country. Innovations are the key to re-define and re-shape everything – from products and services, to governance, organisations, processes, people, economy, institutions, business and technology. Innovation fulfils needs which cannot be met by conventional products, processes and institutional forms and can have a significant impact in terms of social and economic value. Innovation is all about change and related opportunities to improve access, affordability, sustainability, efficiency, productivity and competitiveness. In essence, **"Innovation is the catalyst for growth"**. Innovations are a key to do things better, faster and cheaper leading to higher productivity and efficiency.

India has unique experience in innovation, that of innovations which are frugal; cheaper and faster, highly adaptable and inclusive in nature. Rather than reinventing the wheel or splurging on expensive R&D projects, they develop new solutions by building upon existing infrastructure and assets, as well as by recombining existing solutions. Over the years, with increase in the education level owing to the setting up of high- quality educational institutions such as the IITs, IIMs, NITs the process of innovation has become much more sophisticated, systematic and modernised in the recent times.

Today, both – large and small firms recognise the significance of innovation to survive and grow in an ever evolving and highly competitive environment. A report published by the **National Knowledge Commission in 2007**, reveals that 42% of large firms and 17% of SMEs have introduced 'new to the world' innovations. 17% of the large firms rank Innovation as the top strategic priority and 75% rank it among the top 3 priorities. All the large firms in the sample agreed (of which 81% strongly agreed) that innovation has gained importance as being critical to growth and competitiveness since the start of economic liberalisation in India. Further, according to a recent study on 'Innovation and Manufacturing in India', a staggering 89% of the respondents said that the importance of Innovation has increased significantly over the last 10 years and 39% felt that Innovation has become 'critical to their operations.' This fact can be very well reiterated by the fact that five Indian companies viz. Larsen & Toubro, Hindustan Unilever, Infosys, Tata Consultancy and Sun Pharma — have made it to the list of 100 most innovative firms in the world prepared by the leading magazine Forbes.

Today, a number of foreign investors/ Multi-National Companies have started investing in India with focus on research and development. A number of MNCs have set up R&D centres in the field of life sciences (biotechnology and pharmaceuticals), engineering, telecom-related areas such as VLSI and embedded technologies. The rich talent pool of scientists in the biotechnology industry, has led India to become one of the most favoured destinations for collaborative R&D, bioinformatics, contract research and manufacturing and clinical research.

India is emerging as a global hub of Innovation-low cost as well as high value products and services. Recent acquisitions by Indian companies in the global market also signify an increasing trend by Indian companies to leverage the various possibilities of Innovation that the global market offers. In addition, there has been recent commentary on India's 'inherent reasons' for innovative activity such as the existence of an open society, a technology base, democracy, diversity, an environment that allows experimentation, a vibrant capital market, availability of young populations necessary as human capital to fully reap the demographic dividend, full and free competition in the private sector, opportunities for technological leapfrogging as well as the availability of necessary infrastructure.

Figure1: Key players in the Indian technology and innovation ecosystem

Key players in the Indian Technology and Innovation Ecosystem:

According to innovation system theory, innovation and technology development are results of a complex set of relationships among actors in the system, which includes enterprises, universities and government research institutes. India, as a nation, is making best efforts to create an ecosystem to foster innovation. Both, the public and private sector, are investing resources (financial as well as intellectual) towards innovating new products and processes to attain and consequently sustain a competitive position in the ever evolving world economy. The key players in the Indian technology and innovation ecosystem are:

II. Current Trends:

A. Technology Commercialisation

Commercialisation is the process of bringing new inventions to market—that is, the market based scaling up of production from pilot to mass market that transforms new knowledge to wealth. Products are typically monetised either by licensing or selling the intellectual property or by marketing and selling the product. The Government of India has initiated several programs to commercialise Indian innovations in the global marketplace:

1) **Establishing of National Research Development Corporation (NRDC):** NRDC was established in 1953 as a Govt. of India enterprise and is presently working under the Department of Scientific and Industrial Research, Ministry of Science & Technology with the objective to develop, promote and transfer of technologies emanating from various national R&D institutions. The Corporation has been offering the services in improving the manufacturing base in India with innovative technologies and acting as an effective catalyst translating innovative research into marketable industrial products. The Corporation is now recognised as a large repository of wide range of technologies spread over almost all areas of

industries, viz. Chemicals including Pesticides, Drugs and Pharmaceuticals, Bio-Technology, Metallurgy, Electrical & Electronics, Instrumentation, Building Materials, Mechanical, Agriculture and Food, etc. The Corporation has been exporting proven technologies and services to entrepreneurs / industries both in the developed as well as the developing countries. It has so far exported technologies to several countries like USA, Germany, Malaysia, Burma, Nepal, Senegal, Indonesia, Madagascar, Philippine, Vietnam, Sri Lanka, Kenya, Brazil and Bangladesh.

2) **India Innovation Growth Programme (IIGP):** The IIGP was launched in March 2007 by FICCI jointly with the Lockheed Martin Corporation and the IC2 Institute at the University of Texas at Austin with an aim of accelerating innovative Indian technologies into the global markets and bridge the existing gap between mind and the market. The programme received a qualitative boost with Department of Science and Technology (Government of India) and Indo-US S&T Forum coming on board to promote entrepreneurship in the country November 2008 onwards. So far, over 220 innovators have been supported under this initiative. The programme has helped participants and their companies generate revenues exceeding INR 1,500 crores (US$275 million) during 2010–2012, thereby contributing significantly to the country's economic growth.

3) **Accelerated Technology Assessment and Commercialisation (ATAC) Programme:** The DRDO - FICCI ATAC programme aims to create a commercial pathway to deliver technologies developed by DRDO for appropriate commercial markets for use in civilian products and services. This programme is first of its kind to be undertaken by DRDO in association with FICCI to actively spinout several of DRDO's technologies for appropriate commercial markets both nationally and internationally. In the very first year of operation of the programme as many as 26 DRDO labs across India are participating and over 200 technologies are being assessed under this programme by FICCI. The technologies that are currently assessed are from sectors as diverse as electronics, robotics, advanced computing and simulation, Avionics, optronics, precision engineering, special materials, engineering systems, instrumentation, acoustic technologies, life sciences, disaster management technologies, information systems, etc. The ATAC programme has resulted in revenue of approximately 4.5 million to DRDO since its inception in 2008.

B. Inclusive Growth:

Inclusive growth primarily targets the population at the Bottom of the Pyramid and brings them into the mainstream of the economic system as customers, employees, distributors and intermediaries. Companies engaging with inclusive business models identify a gap in society and then work to bridge the gap. By implementing inclusive business models, businesses stand to:

- Unearth new revenue-generating customer segments
- Launch new products
- Achieve new standards in customer satisfaction and customer relevance
- Create new scaling capabilities that can be adapted across sectors
- Derive new applications of existing technologies through greater synthesis
- Discover new sources of talent
- Ensure a strong brand recall

Significant Inclusive Growth Models:

1) **National Innovation Foundation:** The National Innovation Foundation (NIF) is a Department of Science, Govt of India, initiative towards benefitting grassroots innovators who have developed technological innovations in any field of human survival without any outside help. NIF helps them get due reward for their innovations and ensure that such innovations diffuse widely through commercial and non-commercial channels generating incentives for them and others involved in the value chain.

2) **Millennium Alliance:** The Millennium Alliance is a collaborative effort of Technology Development Board, Govt of India with the United States Agency for International Development (USAID) and the Federation of Indian Chambers of Commerce & Industry (FICCI) to identify and promote innovations that benefit the bottom of the pyramid population and in terms of providing them financial and non-financial resources.

3) Formation of **National Innovation Council** has been an important step taken by the Government of India to In order to bridge this gap between an idea and commercialisation of innovation, National Innovation Council has proposed **"India Inclusive Innovation Fund"** which will invest in innovative enterprises, engaged in providing solutions for bottom of the pyramid. Currently, this fund has Rs. 500 crores in its kitty. The innovations producing socially useful outcomes for poorer people will benefit from this.

4) **Project Shakti by Hindustan Unilever Limited:** Project Shakti is a rural distribution initiative of Hindustan Unilever Limited (HUL) that targets small villages populated by less than 5,000 individuals. It is a unique win-win initiative that catalyses rural affluence even as it benefits business. Hindustan Unilever's Shakti Entrepreneurial Programme helps women in rural India set up small businesses as direct-to-consumer retailers. The scheme equips women with business skills and a way out of poverty as well as creating a crucial new distribution channel for Unilever products in the large and fast-growing global market of low-spending consumers. By 2010 the Shakti network aims to have reached 600 million consumers.

5) **ITC e-Choupal:** A powerful illustration of corporate strategy linking business purpose to larger societal purpose, e-Choupal leverages the Internet to empower small and marginal farmers – who constitute a majority of the 75% of the population below the poverty line. By providing them with farming know-how and services, timely and relevant weather information, transparent price discovery and access to wider markets, e-Choupal enabled economic capacity to proliferate at the base of the rural economy. Today 4 million farmers use e-Choupal to advantage – bargaining as virtual buyers' co-operatives, adopting best practices, matching up to food safety norms. Being linked to futures markets is helping small farmers to better manage risk. e-Choupal has been specially cited in the Government of India's Economic Survey of 2006-07, for its transformational impact on rural lives. ITC's strategic intent is to develop e-Choupal as a significant two-way multidimensional delivery channel, efficiently carrying goods and services out of and into rural India. By progressively linking the digital infrastructure to a physical network of rural business hubs and agro-extension services, ITC is transforming the way farmers do business, and the way rural markets work. The network of 6,500 e-Choupal centres spread across 40,000 villages has emerged as the gateway of an expanding spectrum of commodities leaving farms – wheat, rice, pulses, soya, maize, spices, coffee, aqua-products. The reverse flow carries FMCG, durables, automotives and banking services back to villages.

C. Existing Government Schemes for supporting innovations in India

With a view to address the above challenges, the Government of India has developed a number of schemes under various Ministries and Departments to provide maximum support to the Indian innovators and to build an all-inclusive innovation ecosystem:

1. DEPARTMENT OF SCIENCE & TECHNOLOGY (DST)

Mission on Nano Science and Technology (Nano Mission)

Building upon the promotional activities carried out as part of the Nano Science and Technology Initiative (NSTI) in the highly promising and competitive area of Nano Science and Technology, the Government of India launched a Mission on Nano Science and Technology (Nano Mission) in May 2007. An allocation of Rs. 1000 crore for 5 years has been made. The Department of Science and Technology is the nodal agency for implementing the Nano Mission.

Innovation in Science Pursuit for Inspired Research (INSPIRE) Programme

Innovation of Science Pursuit for Inspire Research (INSPIRE)" is one such innovative programs proposed by the Department of Science & Technology for attraction of talent to science. The basic objective of INSPIRE would be to communicate to the youth population of the country the excitements of creative pursuit of science and attract talent to the study of science at an early stage and build the required critical human resource pool for strengthening and expanding the Science & Technology system and R&D base. INSPIRE Scheme has included three components. They are a) Scheme for Early Attraction of Talents for Science (SEATS), b) Scholarship for Higher Education (SHE) and c) Assured Opportunity for Research Careers (AORC).

National Science & Technology Entrepreneurship Development Board (NSTEDB)

The National Science & Technology Entrepreneurship Development Board (NSTEDB), established in 1982 by the Government of India under the aegis of Department of Science & Technology, is an institutional mechanism to help promote knowledge based and technology driven enterprises. The Board, having representations from socio-economic and scientific Departments and Institutions aims to convert "job-seekers" into "job-generators" through Science & Technology (S&T) interventions.

Technology Development Board (TDB)

The Government of India constituted the Technology Development Board (TDB) in September 1996, as per the provisions of the Technology Development Board Act, 1995. The Act enables creation of a Fund for Technology Development and Application to be administered by TDB. The Fund receives grants from the Government of India out of the Cess collected by the Government from the industrial concerns under the provisions of the Research and Development Cess Act, 1986, as amended in 1995. Any income from investment of the amount of the Fund and the recoveries made of the amounts granted from the Fund is also credited to the Fund. Donations are also received by the fund. The mandate of the TDB is to provide financial assistance to the industrial concerns and other agencies attempting development and commercial application of indigenous technology or adapting imported technology for wider domestic application. The financial assistance from TDB is available in the form of loan or equity and/or in exceptional cases, grant. The loan assistance is provided up to 50 percent of

the approved project cost and carries 5 percent simple rate of interest per annum. Royalty is also payable on sales of products under TDB's project during currency of loan. Alternatively, TDB may also subscribe by way of equity capital in a company, subject to maximum of 25 percent of the approved project cost. The financial assistance is provided during the commencement, start-up or growth stages of industrial concerns. TDB accepts applications for financial assistance from all sectors of economy throughout the year. An industrial concern desirous of seeking financial assistance from TDB applies in a prescribed format. TDB has also participated in Venture Capital Funds to wider its scheme for spreading support to technology oriented projects. Further, it also provides support to incubators through its Seed Support Scheme.

2. DEPARTMENT OF SCIENTIFIC & INDUSTRIAL RESEARCH (DSIR)

Technopreneur Promotion Programme (TePP)

TePP supports Individual innovators exploring innovative ideas. It is for micro budget innovations, to help convert ideas into demonstrable models. Selected projects are provided financial support as stipend to foray into unknown areas of Science & Technology. Support can also be used to explore new concepts through lab-scale demonstrations and computer simulations based on math models. Maximum support under this category is Rs. 75,000/- subject to 90% of approved project cost.

Technology Development and Demonstration Program (TDDP)

TDPP proposes to strengthen the interface between industry, R&D establishments and academic institutions and provide catalytic support for development and demonstration of innovative product and process technologies, traversing the journey from proof of concept or laboratory stage to pilot stage, rendering them fit for commercialisation. TDPP helps in development and demonstration of innovative need-based technologies for making industry competitive and strengthening the interface between industry, R&D establishments and academic institutions.

3. COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH (CSIR)

CSIR 800

CSIR 800 proposes product based and service oriented / solution based employment / entrepreneurship generation through S & T intervention. It envisages implementation of 10-100 projects; each with a minimum customer base of one million people. It focuses on seven priority areas, including - Value-added Agriculture, Waste to Wealth, Energy Efficiency, Low Cost Housing, Affordable Health, Potable Water, Sustainable Energy.

4. DEPARTMENT OF BIO-TECHNOLOGY (DBT)

Biotechnology Industry Research Assistance Program (BIRAP)

Biotechnology Industry Research Assistance Program has been set up as Department of Biotechnology's interface agency, which serves as a single window for the emerging biotech industries. BIRAC is guided by an Independent Board of Directors comprising senior professionals, academicians, policy makers and industrialists. It aims to stimulate, foster and enhance the strategic research and innovation capabilities of the Indian biotech industry particularly SME's, to make India globally competitive in biotech innovation and entrepreneurship, for creation of affordable products addressing the needs of the largest section of society.

5. Ministry Of Overseas Indian Affairs

Global-INK or Global India Network of Knowledge is an online secure platform managed by the Overseas Indian Facilitation Centre (OIFC) and endorsed by the Ministry of Overseas Indian Affairs (MOIA), Government of India.

The objective behind setting up Global-INK is to create a knowledge network by drawing on the knowledge and expertise of Global Indians, and of people with an affinity for India, who are outstanding in areas of Environment, Healthcare, Innovation and Science & Technology, without relocating them.

Being a member of the network gives an opportunity: to provide or seek advice, contacts, assistance and support in the focus sectors; to convert ideas, research outputs into actions; to find research collaborators; and; to shape the future of India's knowledge economy.

Membership of this network is by invitation only. Visit https://www.globalink.in/ and request for membership.

III. INNOVATION ECOSYSTEM IN INDIA: OPPORTUNITIES

"India is at a crossing point, either we will become one of the world's most influential nations, with the largest science and technology population, or we will have the largest population in the world of the uneducated middle–aged."

Dr. Samir Brahmachari, Director General, CSIR

Innovation holds the key to any country's future growth. In India, the post-liberalisation era saw increasing competition and greater exposure to the market forces. However, for many generations, the contribution made by India to the world of technological innovations had been limited due to constraints of capital, regulatory environment and access to information. This led to a situation where India lagged behind developed nations in home-grown products and technological innovations.

However, in the past two decades, the Indian economy has undergone various changes that promote innovations in technology. The business environment is changing, with various funds being set up by the Indian government and non-profit organisations (that support entrepreneurs) beginning to start technology and product companies.

Many foreign investors/ Multi-National Companies have started investing in India with focus on research and development. A number of MNCs have set up R&D centres in the field of life sciences (biotechnology and pharmaceuticals), engineering, telecom-related areas such as VLSI and embedded technologies. The rich talent pool of scientists in the biotechnology industry, has led India to become one of the most favoured destinations for collaborative R&D, bioinformatics, contract research and manufacturing and clinical research.

Today, the expenditure on Research and Development (R&D) as a percentage of Gross Domestic Product (GDP) in India is 0.88 %, which is higher as compared to most of the developing countries. This is primarily because the number of core researchers in India is much less as compared to China. Of the 0.88 % expenditure on R&D, approximately 80 % is by public sector while the private sector share is only 20%.

India is a rising economic power and an increasingly important centre of innovation. We have the available 'talent pool' at relatively low cost, favourable demographic profile, with a large proportion of working people

and offer cutting edge R&D facilities with high quality standards. Drawing on India's substantial knowledge base, Indian industry has rapidly become internationally competitive in many sectors, while U.S. high-technology firms increasingly find it attractive to conduct advanced research and development in India. Out of Fortune 500 companies, over 200 companies have set up R&D base in India.

It is unarguable that there is no dearth of innovative technologies in India. However, we need a mechanism to transform the existing innovative ideas into commercial products and processes. There is an urgent need for higher interaction between the academia, R&D labs and the industry to enable successful commercialisation of the technological innovations taking place in the country.

India is growing at an average annual growth rate of 7-8 per cent and is determined not only to maintain but also accelerate this rate. For this, we have to indulge in an ever-going process of research and development, which will in turn lead to inventions and innovations. The need of the hour is to develop ways and means to translate India's immense innovation potential into high value commercial products and services.

Way Ahead

Technological progress involves improvement in skills, better capital equipment and introduction of new products, processes and business methods. It requires investment in education and research and in technology extension. It is embedded in processes of human and material capital accumulation and cannot be dealt with separately from them. In a developing country like India, much of the know-how will come from what is known as enterprises catch up with what is already available. Even here, a certain technological capacity is necessary to adapt technologies to local conditions. Moreover, there are sectors like agriculture and health where established technologies may not be adequate for local needs and conditions. India is destination for one and all across the globe for these hundreds and thousands of ideas to be developed and commercialised. With the opening of economy to greater domestic and international competition, Indian industry has to move to frontiers of known technological options. At this point, continued technical progress can no longer be based on catching up with what is already available but will require a capacity to innovate and bring innovations to market. More generous funding, a stronger result orientation and better inter-connection between research institutions and corporate R & D will help, but will not be enough.

India and the Indian Diaspora are together bearers of the innovation movement, with the combined onus now on the Indian government, the academia, the industry and the innovators at large, to create an innovation eco-system not only for high tech products /service but also aim at improving quality of life for everybody.

India's Growing Soft Power

Introduction

Mature economies have understood that their long term interests can be promoted through soft power very effectively. Strong projection of soft power allows a nation to punch above its weight, subtly influencing populations and policies through politics, diplomacy, business, culture, sports and education. Co-optation is the name of the game, and many countries have taken bold strides to build their co-optive power.

The concept was pioneered by Joseph Samuel Nye, Jr., an American political scientist and former Dean of the John F. Kennedy School of Government at Harvard University[1]. According to Nye, co-optive power of a nation is a way to structure a situation so that other nations develop preferences or define their interests in ways consistent with its national interests. Such power emerges from soft power and immaterial sources such as cultural and ideological attraction as well as the rules and institutions of international regimes2. He argued that, "power is the ability to alter the behaviour of others to get what you want, and there are three ways to do that: coercion (sticks), payments (carrots) and attraction (soft power). If you are able to attract others, you can economise on the sticks and carrots[2]."

Figure 1: Joseph Nye's Sources of Power

Source: The Land of the Better Story: India and Soft Power, By Shashi Tharoor

Soft Power is an amalgamation of political idealogies, economic policies, cultural heritage and trade impact. It is, also, how a country is viewed by the rest of the world. In a connected world, where revolutions happen on social media, these immeasurable factors play an even more influential role. While some nations just have it, others cultivate and build such soft power.

Global Soft Power Rankings 2012 analyse 50 factors to assess a country's soft power and rank them accordingly. Such factors range from the number of cultural missions, Olympic medals and foreign students to the quality of a country's cuisine, architecture and businesses[3]. The survey found that each nation has certain unique traits, which contribute towards building for it a favourable global image or 'brand'. For instance:

- Germany is renowned for its 'business strength and academic prowess'
- Italy for its 'slow food' movement
- South Korea has built its reputation by exporting 'technology goods and K-Pop' to the world
- Japan is making its mark in fashion, retail and food, while the demand of its craftsmanship surges
- Brazil's multiculturalism and 'fun-loving' people are driving its economic surge

[1]http://en.wikipedia.org/wiki/Joseph_Nye

[2]The Land of the Better Story: India and Soft Power, by Shashi Tharoor

[3]Britain ousts the U.S. as world's most influential nation: Country tops rankings for 'soft power', 18 November 2012, Mail Online

World`s Soft Power Centers			
Rank	**Country**	**Rank**	**Country**
1	Great Britain	11	South Korea
2	United State Of America	12	Norway
3	Germany	13	Finland
4	France	14	Italy
5	Sweden	15	Holland
6	Japan	16	Spain
7	Denmark	17	Brazil
8	Switzerland	18	Austria
9	Australia	19	Belgium
10	Canada	20	Turkey

Source: Britain ousts the U.S. as world's most influential nation: Country tops rankings for 'soft power', 18 November 2012, Mail Online

While India did not figure amongst the top 20 countries, it has the potential to cultivate and develop its co-optive power on the back of its rich cultural heritage, an entrepreneurial spirit and a dynamic economy that operates within the framework of a secular ethos and a vibrant democracy.

Public Diplomacy Division: an initiative of the Ministry of External Affairs

The Public Diplomacy Division (PDD) seeks to create a better understanding of India and its foreign policy concerns. The division goes beyond governments, and interfaces primarily with non-governmental individuals and organisations with the ultimate objective of building a relationship of trust and credibility. Key initiatives of PDD are:

- Produce publications, documentary films and other material that showcases India's rich cultural heritage
- Publishes the India Perspective magazine in 17 languages and distributes it in 160 countries
- Publishes the India Perspective magazine online
- Commissions customised sets of popular and classical music that are sent to diplomatic missions for presentation to local dignitaries
- Screens popular Hindi feature films with subtitles in major international languages
- Commissions a range of documentary films (including The Path Breakers series) to showcase different facets of India
- Digital diplomacy through effective Web 2.0 strategies, and utilising a full range of social media tools to engage with diverse communities in India and overseas
- Has established presence on Twitter, Facebook and Youtube
- Run the 'Outreach Program' by partnering with major domestic and international universities, think tanks and research organisations to organise seminars and conferences on India's foreign policy

- Host delegations from various countries and organisations to provide them with a broad-based exposure to India
- 'India File', an innovative program, allows TV channels anywhere in the world to download, edit and use the text and video related to some of the topmost news stories from India, free of charge

Source: http://www.indiandiplomacy.in/AboutUs.aspx

The Indian Media and Entertainment (Indian M&E) industry has been consistently complimenting the Government's efforts to spread awareness about Indian art and culture among the international community. Indian musicians such as Ustad Ali Akbar Khan, Pandit Ravi Shankar, Dr Zakir Hussain, and A.R. Rahman, some of the names amongst many, are brand mascots of India's talent. The Indian film industry, which draws huge audiences in significant parts of the world, has been playing a pivotal role in refurbishing India's image, from the land of snake charmers to the land of super heroes such as Ra.One and Krrish. India's English-language novelists have also been recognised for their contribution to literature; while in sports Indian cricket team enjoys a worldwide fan following and plays an important role in strengthening cordial relationships with its neighbouring countries.

Indian Winners of the Man Booker Prize

- Salman Rushdie (Midnight's Children, 1981)
- Arundhati Roy (God of Small Things, 1997)
- Kiran Desai (The Inheritance of Loss, 2006)
- Aravind Adiga (The White Tiger, 2008)

Further, the vibrant Indian Media and Entertainment industry is playing a significant role in shaping India's image in the world arena, and adding to its co-optive power.

Indian Media and Entertainment (M&E) Industry:

An Overview

The Indian M&E industry has evolved greatly over the last decade, against the backdrop of shifting consumer preferences towards niche content and digital delivery platforms, evolving business models, changing regulations as well as hyper competition due to entry of local and global players. The digital ecosystem has begun to impact various segments. Films are enjoying benefits from digital distribution with wide releases and early capture of revenue; cable digitisation is underway; and the music industry is growing on the back of consumption of digital music.

The overall M&E market in India is expected to grow at a compounded annual growth rate of 15 per cent per annum over the next five years, to reach INR 1.4 trillion in 2016. The potential for increase in media penetration, growing importance of regional markets, increasing consumption in tier II and III cities, impact of regulatory changes, more focused consumer research, innovation in content, marketing and delivery platforms to serve different niches, increasing device penetration like mobiles, tablets, PCs etc., all point towards a very positive future for the industry.

Table 1: M&E Industry Size

Overall industry size (INR billion)

Overall Industry size (INR Billion) (For Calendar Years)	2007	2008	2009	2010	2011	Growth in 2011 over 2010	2012P	2013P	2014P	2015P	2016P	CAGR (2011-16)
TV	211.0	241.0	257.0	297.0	329.0	10.8%	380.0	435.0	514.0	618.0	735.0	17%
Print	160.0	172.0	175.2	192.9	208.8	8.3%	226.0	248.8	270.0	294.9	323.4	9%
Film	92.7	104.4	69.3	83.3	92.9	11.5%	100.0	109.7	121.1	134.5	150.3	10%
Radio	7.4	8.4	8.3	10.0	11.5	15.0%	13.0	16.0	20.0	24.0	29.5	21%
Music	7.4	7.4	7.8	8.6	9.0	4.7%	10.0	11.3	13.1	15.4	18.2	15%
OOH	14.0	16.1	13.7	16.5	17.8	7.6%	19.5	21.5	23.6	26.0	29.0	10%
Animation and VFX	14.0	17.5	20.1	23.6	31.0	31.2%	36.3	43.0	51.1	61.0	69.0	17%
Gaming	4.0	7.0	8.0	10.0	13.0	30.0%	16.0	23.0	29.0	37.0	46.0	29%
Digital Advertising	4.0	6.0	8.0	10.0	15.4	54.0%	19.9	25.8	33.5	43.7	57.0	30%
Total	514	580	587	652	728	11.7%	823	932	1076	1254	1457	14.9%

Source: Digital Dawn, FICCI-KPMG Media and Entertainment Industry Report 2012

Films

India is top in the radar of the global film and entertainment community. With over 3.5 billion tickets sold and 1000 movies produced annually[4], India is an attractive investment destination for financial and strategic investors. There is a steady rise in the dynamism and confidence in India's showbiz sector.

This is reflected by the growing popularity of Indian movies worldwide. Overseas theatricals currently account for around 7 per cent[5] of the overall film industry revenue and is expected to increase its share in the coming years. Strong marketing of films in the international market could further accelerate the growth of overseas theatrical revenue.

Rising overseas collections

Indian big budget films such as Ra.One and Bodyguard opened simultaneously in 50 countries with over 900 prints. Roughly 45 per cent of Punjabi blockbuster Jinhe Mera Dil Luteya's revenue was estimated to have come from the overseas market.

[4] *FICCI KPMG 2012 report*
[5] *FICCI KPMG 2012 report*

Table 2: Revenue earned by Indian Movies in overseas market

Highest-grossing Bollywood films Overseas				
Rank	**Movie**	**Year**	**Studio(s)**	**Overseas Gross (in USD million)**
1	3 Idiots	2009	Vinod Chopra Productions	25.00
2	My Name Is Khan	2010	Dharma Productions/Red Chillies Entertainment	23.00
3	Don 2	2011	Excel Entertainment	11.75
4	Jab Tak Hai Jaan	2012	Yash Raj Films	11.03
5	Kabhi Alvida Naa Kehna	2006	Dharma Productions	10.77
6	Om Shanti Om	2007	Red Chillies Entertainment	10.08
7	Ek Tha Tiger	2012	Yash Raj Films	10.00
8	Ra.One	2011	Red Chillies Entertainment	9.20
9	Dhoom 2	2006	Yash Raj Films	8.75
10	Rab Ne Bana Di Jodi	2008	Yash Raj Films	8.43

Source:IMDB

While the US, Canada, UK and Middle East continue to account for the bulk of overseas revenues; previously untapped territories in Latin America, Western Europe and Pakistan are also opening up. A strong “Go-East” phenomenon has been observed with Indian films that are also doing well in Taiwan, South Korea and China. Studios continue to seed new markets for Indian films as the industry believes that it is only a question of influencing consumption patterns through greater exposure, enabled by cultivating relationships with local partners.

To take an example, the 2009 film 'Three Idiots' had a 29 weeks theatrical run in Taiwan, collecting over INR 3 crores in 2011. Buoyed by the success of the film, it was released with subtitles in 230 screens in South Korea, and across 900 screens in China with dubbing in Mandarin. The film had over USD 1.5 million of print and advertising expense in the country, equivalent to that of a Hollywood release.

Some overseas markets also hold promise for the regional language cinema. While Punjabi continues to do well in pockets of US, UK and Canada; Bengali cinema is exploring territories and has had limited success in the markets of US and Canada. Some Bhojpuri films have been sold in Fiji and Mauritius. Malayalam films, on the other hand, continue to perform well in Middle East due to their strong Indian Diaspora. Telugu films also have strong traction in the US market. Besides their base in Japan, US, Canada and South East Asia, Tamil film producers are developing markets in France, Germany and Netherlands.

Despite the emergence of new territories, the total number of films released overseas continues to be small. Overseas theatrical releases are limited to a few high budget films, primarily based on star power and the ability to invest in marketing activities. Some production houses have also started monetising 'repeats', where old films are sold on a standalone or bundled basis in new territories.

Table3: Indian Theatrical Releases in Domestic and International markets

Average number of screens for theatrical release[13]	Big Budget		Medium Budget	
Market	2010	2011	2010	2011
Domestic	1200	2500-3000	600	1000+
International	250	400-500	100-120	100-120

The contribution of overseas revenue in the total revenue of the film has the potential to go up from its current levels of 10-15 per cent 40 per cent. In addition to big-budget star-driven films, small-budget quality films have also begun to tap overseas markets the in recent years, as awareness of the quality of Indian films improves. Along with identification of new markets, the industry believes that growth would also be driven by enhanced overseas marketing campaigns and increased penetration in existing areas.

Film festivals

Film festivals offer a ground to build and support the growing interest in the Indian entertainment industry. They help cultivate an audience for Indian films while supporting filmmakers. While some in the international film fraternity visit Indian festivals, the Indian film industry has been out in the festival circuit with increasing frequency and force over the years.

The Cannes film festival has invited India as a 'Guest Country' at its upcoming edition to celebrate hundred years of Indian Cinema. With this move, India becomes the third 'Guest Country' at Cannes film festival following Egypt in 2011 and Brazil in 2012[6].

International Film Festival of India (IFFI) was organised for the first time in Mumbai, in 1952. The IFFI aims to provide a common platform for the filmmakers of various countries to project their films, and at the same time to introduce Indian filmmakers to their counterparts in other countries. The 43rd International Film Festival of India was held in Goa between 20th and 30th November, 2012. In 2011, the festival had 8,000 delegates; the number is estimated to increase to 12,000 this year[7].

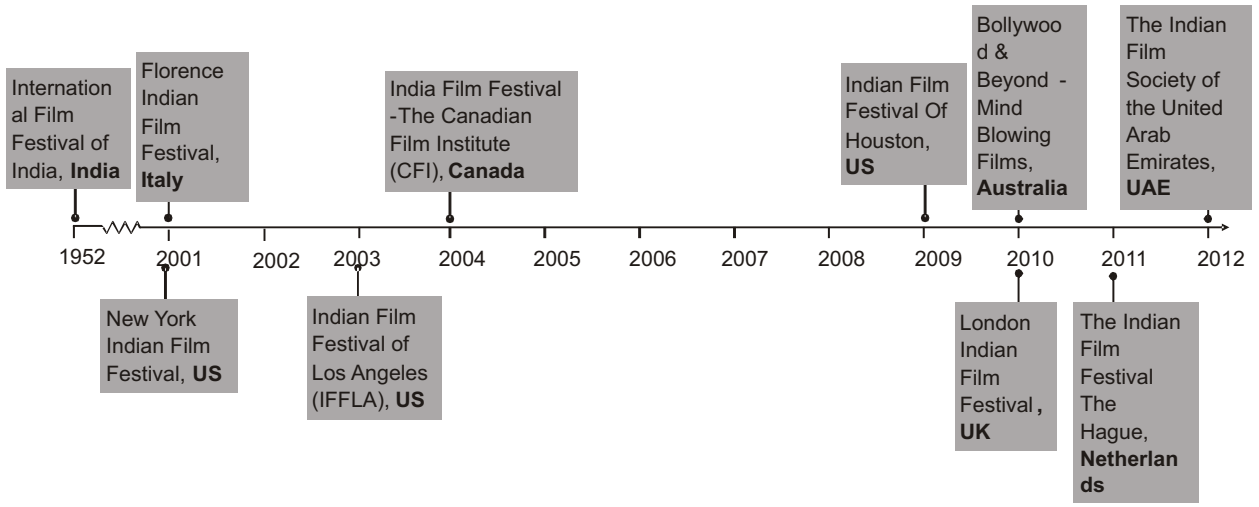
In addition to this, many other countries also host Indian film festivals, including London Indian Film Festival (LIFF)[8], Indian Film Festival of Los Angeles (IFFLA), New York Indian Film Festival (NYIFF), Indian Film Festival of Melbourne and others, hence promoting the diverse perspectives of the Indian Diaspora in the world.

[6]http://www.indiantelevision.com/aac/y2k12/aac1117.php

[7]http://www.navhindtimes.in/goa-news/12000-delegates-expected-43rd-iffi-wagh

[8]http://www.indiaincorporated.com/features/item/545-soft-power-beyond-the-mainstream-india-inc-interview.html

Figure 2: Major Indian film festivals (arranged by year of inception)



The festivals are a gateway for the Indian film industry to gain exposure beyond the Diaspora audience, and get access to mainstream distribution and television audiences around the world. This is an avenue that must be cultivated to enhance India's soft power through its films.

Brand Bollywood adds to India's soft power

While the Indian film Industry continues to spread its influence, Brand Bollywood – the films, the celebrities, the shows, the tweets – continues its march around the world. In addition to film and TV, social media is helping the Indian culture spread all over the world.

As the India market becomes more important for western companies and awareness builds about its rich landscape as well as creative & technical talent, India and Indians are finding a place in international productions and casts. Music composer A.R. Rahman had a successful stint with the music of "Lord of the Rings" and Sanjay Leela Bhansali directed the 1923 opera ballet "Padmavati" for the 'Du Chatelet' theatre in Paris. Whether it be Mallika Sherawat featuring in "Unveiled", Akshay Kumar in "Australian Bandstand", Salman Khan in "Marigold" or Aishwarya Rai in "Pink Panther", Bollywood stars are to be seen everywhere.

The industry has also begun to contribute to talent development in International markets. Anupam Kher launched the London branch of his film school 'Actor Prepares' in 2008, thereby giving Britain its first official Bollywood acting school. The second overseas chapter of his film school was launched in New York in 2010, providing a platform to Indian origin actors in North America. Subhash Ghai's 'Whistling Woods' has a Spanish campus as well.

Television

India continues to be the third largest TV market after USA and China with nearly 147 million television households[9]. Cable and Satellite (C&S) penetration of television households is close to 80 per cent[10], with DTH driving a significant part of the growth. With the impending digitisation of all analog cable subscribers imminent, penetration level of digital households is expected to increase significantly. This will have long-term benefits by transforming both the quality and quantity of television content and delivery across India.

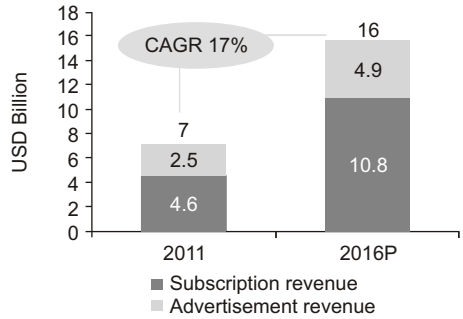
[9]http://articles.timesofindia.indiatimes.com/2012-05-01/india/31526090_1_cable-operators-carriage-fees-general-entertainment

[10]KPMG FICCI Report 2012

With a large Indian population residing overseas, Indian content is a very important tool for these communities to connect with their cultural roots. Due to this emotional involvement with Indian content, Indian channels become a 'must have' for most of these families. This makes for an attractive business opportunity for broadcasters to tap into this audience base.

It also provides a significant economic opportunity for the broadcasters, as many of these large Diaspora markets have a fairly attractive ARPU (average revenue per user) than that in the Indian subcontinent. The license fee per channel in international markets like UK, US, Middle East ranges from US$1 per sub to as high as US$ 7 per sub. On the other hand, in the domestic market, a consumer currently pays less than US$4 for 80-100 channels to the cable operator, and only a fraction of that gets passed on to the broadcasters[14].

Figure 3: Market size of Television Industry



Source: KPMG FICCI Report 2012

Country	South Asian population
US	3.2 million[11]
Canada	1.2 million[12]
Australia	0.4 million[13]

Major Indian broadcasters have already started tapping on to this opportunity and earn over INR 10 billion every year from subscription, advertisement revenues and content sales from the international markets[15], which is growing every year.

Zee Entertainment Enterprise Ltd. earns about 38 per cent[16] of its operating revenue from international markets. Reach of Zee channels has expanded to more than 650 million viewers in around 168 countries[17], and is consistently strengthening on global markets. During the last one year, 4 new channels (Zee Marathi, Zee Kannada, Zing and Zee Smile) were launched in the US and in new markets like Aruba, Curacao, Grenada. In Middle East, Zee Aflam reached a share of 12.8% (All Adults TG) and 17.7% (Local Females TG) in 2011. In the Asia Pacific region, Zee Cinema International was launched in Indonesia, Myanmar & Hong Kong with English sub-titles, while it received landing rights in China. Zee also successfully conducted Zee Nite in Durban and Mauritius, and Zee Reunion & Zee Bollywood Nite in Malaysia[18].

Viacom 18's channel 'Colors' is being distributed in around 50 countries[19]. Moreover, with the popularity of Indian media transcending language and cultural barriers, more audiences are sampling Indian content in their own languages. For example, Colors' content is syndicated in 20 foreign languages in over 100 countries. One of Colors' leading daily soaps is being produced locally in one of the African countries, for its local audiences.

[11] http://www.moneycontrol.com/news/business/rbnl-enters-us-marketbig-magic-international-channel_764605.html

[12] http://www.mediamughals.com/News/1/1/Article/10137/RBNL_enters_Canada_with_BIG_MAGIC_International.htm

[13] http://www.business-standard.com/india/news/rbnl-launches-big-magic-international-in-australia/194481/on

[14] http://www.indiantelevision.com/special/y2k12/Gaurav_Gandhi_yearender.htm

[15] http://www.indiantelevision.com/special/y2k12/Gaurav_Gandhi_yearender.htm

[16] ZEE 2011-12 Annual report

[17] ZEE 2011-12 Annual report

[18] ZEE 2011-12 Annual report

[19] http://www.indiaprwire.com/pressrelease/television/20120822128624.htm

Reliance Broadcast Network's (RBNL) hybrid channel, 'Big Magic International' – specifically created for the international market – has forayed into Canada, US and Australia[20]. The channel offers a mix of entertainment, infotainment and business news from India, catering to the South Asian Diaspora in these markets.

BIG CBS Networks, the 50:50 JV between RBNL and US' CBS Studios, has launched the three BIG CBS channels - BIG CBS Prime, BIG CBS Love and BIG CBS Spark- in Sri Lanka, and would soon expand into entire SAARC region comprising Nepal, Bangladesh, Bhutan, Maldives, Pakistan and Afghanistan[21].

Very recently, Reliance Broadcast Network Ltd (RBNL) has also forayed into television series production in the US, with the acquisition of a television studio, Georgeville Television[22].

Indian Broadcasting Foundation (IBF), India's premium organisation of television broadcasters, is increasingly contributing to promote Indian television globally. It is setting up 'Indian Television Fest' (ITF) – a platform dedicated to broadcasters. The event will provide a unique channel for the Indian and global broadcasting industry to network and exchange ideas through panel discussions and master classes.

Indian Animation, VFX and Post Production industry witnessed robust growth with estimated revenues of INR 31 billion in 2011. Growth was achieved on the back of increased contract work from animation and VFX globally, higher VFX content in movies, 2D/3D conversion projects that provided the impetus not anticipated before, demand for local animated TV serials, licensing and merchandising of popular characters, etc.

Table 4: Animation and VFX

Segment Revenue (INR Bn)	2008	2009	2010	2011	CAGR(2008-11)
Animation services	4.8	5.52	6.21	7.1	14%
Animation production	3.6	3.67	3.86	4.2	5%
VFX	2.3	3.15	4.47	6.2	39%
Post-production	6.8	7.76	9.08	13.5	26%
Total	17.5	20.1	23.62	31	21%

Source: FICCI-KPMG 2012 report 'The Digital Dawn'

Overseas production houses like Walt Disney, IMAX and Sony are increasingly outsourcing portions of animation and special effects to India. For the first time DreamWorks has relied on Indian animators to help produce a full-length feature film, Puss in Boots. The Bangalore-based animation studio that worked on the film has become an increasingly important piece of DreamWorks' production pipeline. Additionally, companies are sourcing animation from India for commercials and computer games.

[20] *http://www.business-standard.com/india/news/rbnl-launches-big-magic-international-in-australia/194481/on*

[21] *http://articles.economictimes.indiatimes.com/2012-02-05/news/31026998_1_big-cbs-prime-three-channels-rbnl*

[22] *http://www.indiantelevision.com/headlines/y2k12/nov/nov238.php*

Overseas production houses like Walt Disney, IMAX and Sony are increasingly outsourcing portions of animation and special effects to India. 'Puss in Boots' marks the first time DreamWorks have relied on Indian animators to help produce a full-length feature film. The Bangalore animation studio has become an increasingly important piece of DreamWorks' production pipeline. Additionally, companies are sourcing animation from India for commercials and computer games.

Table 5: List of animation movies outsourced to India

Work outsourced to India	Indian studio
Puss in Boots	Technicolor India
The Gummibear	Tata Elxsi
Jakers! The adventures of Piggley Winks	Crest Animation

Source: Respective company websites

From being a country that helps Hollywood studios make animated films, we are now witnessing several Indian production houses making such films.

Table 6: Indian animated movies released during the last two years

Movie name (Year of Release)
Koochie Koochie Hota Hain (2011)
Alibaba Aur 41 Chor (2011)
Delhi Safari (2012)
Hey Krishna (2012)
Arjun: The Warrior Prince (2012)
Chhota Bheem and the Curse of Damyaan (2012)
Sons of Ram - Heroes will Rise (2012)

'Hey Krishna' – hailed as India's first stereoscopic three-dimensional (3D) animation film – was released with the highest number of prints for any Indian animation film. Another 3D animated movie 'Delhi Safari' had hit the theatres in October and released across 120 theatres in the US in December 2012. Indian animation studios also benefit from low production costs. For instance, Delhi Safari was produced at an investment of about USD 7 million. Production cost of a similar 3D film would be more than USD 100 million, if produced in the US[23].

Both these movies have been shortlisted for consideration in the best animated feature film category for the 85th Academy Awards.

Additionally, popularity of locally produced serials such as Chhota Bheem and Krishna Balram, has proved that content development is not only here to stay but also the likely game changer in this highly competitive market.

[23] *http://www.business-standard.com/india/news/delhi-safari-betsus-market-for-commercial-success/191812/on*

Apart from animation, the potential of VFX is also being realized in India. Indian film directors are realising the enormous possibilities that VFX opens up, especially for science fiction, adventure, horror and mythological films. Indian producers too have started using more VFX shots in their movies; Ra.One is estimated to have more than 3,500 shots[24], a pointer to not only the levels of excellence achieved by the Indian VFX industry, but also to Indian cinema's increasing use of VFX technology.

Music

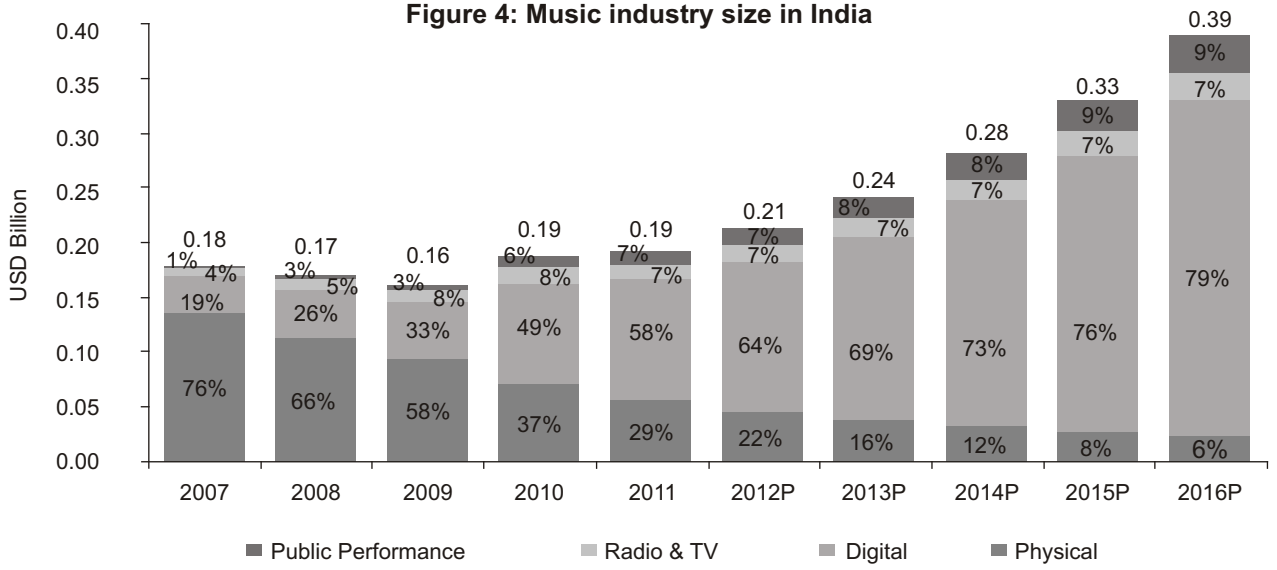
Music in India has always been rich and historically relevant. The range of musical phenomenon in India extends from folk and classical music to popular, pop and Indi-pop music.

The emergence of digital platforms and greater channels of music discovery, is further contributing to expand the reach of Indian music, both in India and abroad. The way 'Kolaveri Di' became a worldwide sensation, clearly reflects this phenomenon. The Tanglish (Tamil-English) song has over 64 million views on YouTube and initiated dance flash mobs in cities like Singapore, Sydney and Auckland[25].

Apart from Hindi music, which has a huge fan following both in India and overseas; Punjabi music has also garnered a rich consumer base internationally, particularly in markets such as the US, Canada and UK. Punjab's folk songs and folk music have travelled to as many as 80 world folk festivals[26] and international conferences in Europe, South Korea, Australia and many other countries. Following the great success in its past seasons, Zee TV's longest running singing reality show SaReGaMaPa, hosted the first season of its Punjabi edition in March 2012, with auditions being held in India, as well as in UK and US[27].

Music Industry Size (USD Billion)

Figure 4: Music industry size in India



Music channels are looking to tap opportunities in unconventional markets such as Middle East etc. The youth pop music channel, MTV India, has been recently launched in the Middle East & North African region, bringing its international footprint to 31 countries[28]. Entertainment Network India Limited's (ENIL) FM radio channel 'Radio Mirchi' has been launched in UAE, which is the first ever international association for ENIL[29].

[24] *FICCI KPMG 2012 report*

[25] *http://southasiandiaspora.org/why-the-success-of-why-this-kolaveri-di/*

[26] *http://www.hindustantimes.com/Punjab/Chandigarh/Punjab-goes-global/SP-Article1-927847.aspx*

[27] *http://zeenews.india.com/zeepunjabi/story.aspx?nid=123*

[28] *http://www.radioandmusic.com/content/editorial/news/mtv-india-expands-middle-east-north-africa*

[29] *http://www.radioandmusic.com/content/editorial/news/radio-mirchi-launches-uae*

Indian music also carved a niche for itself in the world of concert music, which is evident by an increasing number of Indian artists performing overseas.

Table 7: Some of the major concerts by Indian artists held in 2012

Concert	Artist	Country	Date	Description
One World Concert	A.R. Rahman	US	October, 2012	A.R. Rahman along with 20 other artists performed in front of a crowd of 27,000 people. Tickets were priced between $35 and $55.
Sonu Nigam Concert	Sonu Nigam	Guyana	April, 2012	About 20,000 people attended the show
Shreya Ghoshal Live in Bahrain	Shreya Ghoshal	Bahrain	October, 2012	The event took place in the grounds of the Indian School Bahrain (ISB). A 22-member team which includes dancers and magicians was part of the show
Ooh La La	Shreya Ghoshal	Muscat, Oman	October, 2012	This was the first concert by Shreya Ghoshal in Oman.
Salaam Dubai	Shreya Ghoshal	UAE	April, 2012	All the tickets for the event were sold out
Shreya Ghoshal Concert	Shreya Ghoshal	New York, Charlotte, Columbus, Orlando, Houston, Atlanta, Washington, Dallas, San Jose, US	September-October, 2012	The singer visited 9 cities in US
Kailash Kher Concert	Kailash Kher	California, US	Sept, 2012	Roughly 1,400 people attended the concert
The Classic Kailash Concert	Kailash Kher	Gauteng, South Africa	Sept, 2012	The event was organised by India Club (South Africa)
OzAsia Festival	Kailash Kher	Australia and New Zealand	Sept, 2012	OzAsia Festival plays host to 20 performances and 73 events featuring 300 artists and presenters from various counties
Kailash Kher Concert	Kailash Kher	Karachi, Pakistan	April, 2012	This was Kailash Kher's maiden concert in Pakistan

Concert	Artist	Country	Date	Description
Kailash Kher Concert	Kailash Kher	Boston, Hay Ward, Houston, Cary, Broken Arrow, New Jersey, Washington, Dc, Brampt, Chicago - US	April - May, 2012	The artist visited a number of cities in US
Kailash Kher Concert	Kailash Kher	Mississauga, Canada	June, 2012	Roughly 3,500 people attended the concert
Kailash Kher UK Tour	Kailash Kher	London, Birmingham, Liverpool, Leicester - UK	April, 2012	Kailash and his band covered 20 cities in total in their first ever World Tour. Tickets were priced between £25 and £75
Roop Kumar Rathod and Sunali Rathod	Roop Kumar Rathod and Sonali Rathod	Birmingham, Leicester, London - UK	September, 2012	The artists toured 3 cities in UK
Kumar Sanu and Alka Yagnik Concert	Kumar Sanu and Alka Yagnik	Karachi, Pakistan	June, 2012	The entry ticket was priced at INR 2,000
Honey Singh Concert	Honey Singh, Money Aujla, J-Star, Alfaaz and DJ Andy	Bahrain	July, 2012	Organisers charged BD15 to BD25 per ticket for the concert.
Honey Singh Concert	Honey Singh	Nairobi, Kenya	November, 2012	Honey Singh performed in Kenya for the first time at the Carnivore in Nairobi
Sunidhi Chauhan Concert	Sunidhi Chauhan	Bahrain	October, 2012	Tickets were priced between BD3 and Bd30 per person. Part of the proceeds from the event was given to Bahrain Mobility Centre
Sunidhi Chauhan Concert	Sunidhi Chauhan	New Zealand	June, 2012	Tickets were priced between $40 - $150
Shankar, Ehsaan and Loy Concert	Shankar, Ehsaan and Loy	Sydney, Melbourne - Australia	February, 2012	The renowned Indian musical trio performed in Australia for the first time
Shankar, Ehsaan and Loy Concert	Shankar, Ehsaan and Loy	Muscat, Oman	June, 2012	The event was organised at Oman International Exhibition Centre which recently opened doors for entertainment shows after 18 years
Shankar, Ehsaan and Loy Concert	Shankar, Ehsaan and Loy	London, UK	July, 2012	The concert was attended by roughly 1,000 people

Cricket

Cricket has proved to be a strong source for developing India's co-optive power, with cricket diplomacy having significant effects in reducing cross-country tensions, most notably Indo-Pakistan. During the 2011 World Cup semi-final in India, the meeting between Pakistani Prime Minister Yousuf Raza Gilani and the Indian Prime Minister Manmohan Singh closely followed the resumption of high-level diplomatic talks between the two countries after the 2008 Mumbai attacks.

On an international level, the Indian Premier League (IPL) for Twenty20 cricket championship created in 2008, has gained quick popularity in the global cricket village and has reinforced the narrative of India's rise. It has also witnessed continuous growth in the online viewership from across the globe. Last season of the IPL (Season Five) generated 113 million video views globally, a 55 per cent increase from 72 million video views in 2011[30] .

Conclusion

As we speak of leveraging our soft power through culture and media, we can proudly say that progress is being made. Whether it is the overseas popularity of Bollywood films, TV soaps, popular Indian music or cricket, all have made their own contribution to India's soft power. Media and Entertainment industry continues to strive to reach new markets and audiences. To increase its international influence through soft power, Indian content will have to find a way to reach mainstream audiences and government support for this effort is critical. This is where the Indian Diaspora could establish mutually beneficial partnerships, and be a part of India's growing soft power.

[30] *http://articles.timesofindia.indiatimes.com/2012-06-01/news/31958007_1_highest-single-day-viewership-online-viewership-ipl*

Notes

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