

Human Resource and Skill Requirements in the **IT- ITeS** Executive Summary



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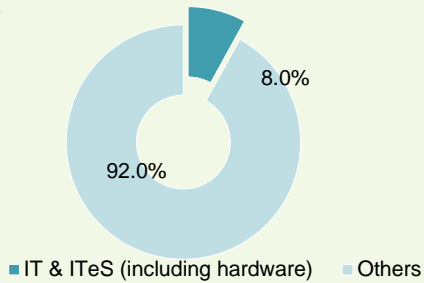
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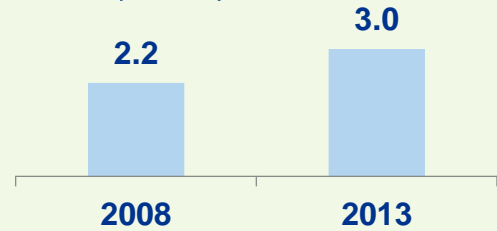
Industry Overview

IT and ITeS is contributing around 8% of the total GDP and provides direct employment to around 3 million people

Contribution of IT & ITeS to India's GDP (FY13)

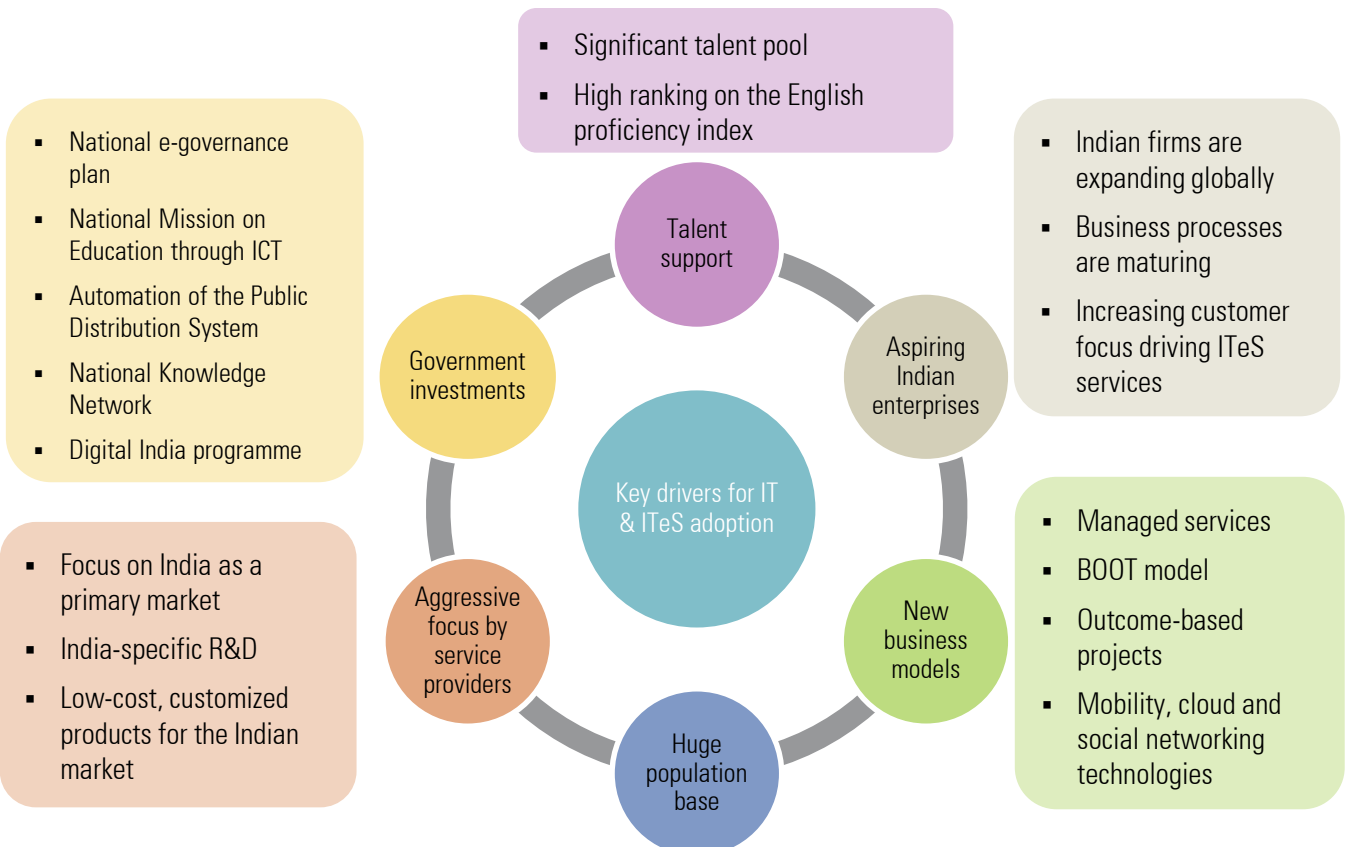


Direct employment generated by IT & ITeS* (million)



- The Indian IT & ITeS sector is pivotal for the Indian economy
- The sector's GDP contribution has increased from 1.2 percent in 1998 to 6.4 percent in 2008 to ~8.0 percent in 2013 driven by significant exports to western countries
- The sector has provided new job opportunities and at present employs about 3 million directly and 9.5 million indirectly
- The Cabinet in August 2014 has approved the ambitious 'Digital India' programme, which aims to connect all gram panchayats by broadband Internet, promote e-governance and transform India into a connected knowledge economy.

Key Drivers



Demographic characteristic of workforce

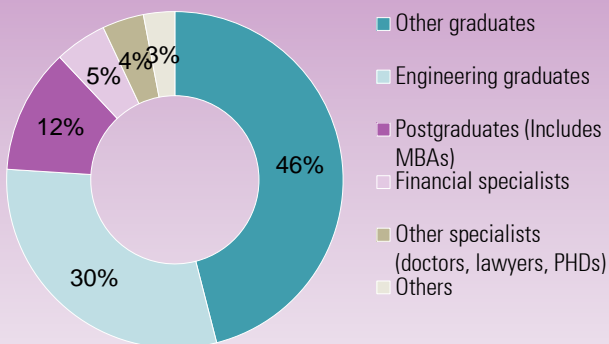
Increasing input costs in Tier 1 cities are pushing companies to Tier 2 and 3 cities

- The Indian IT & ITeS sector primarily operates through six major states, including Karnataka, Andhra Pradesh, Maharashtra, Tamil Nadu, Haryana and Uttar Pradesh — major centers of top IT & ITeS firms such as TCS, Infosys, HCL, Tech Mahindra, Cognizant and Capgemini are based in these states. Also, a majority of these centers are based in tier 1 cities of these states, such as Bengaluru, Chennai, Hyderabad, Gurgaon and Noida
- As infrastructure facilities in tier 1 cities saturate and input costs increase, IT & ITeS companies are shifting their focus towards tier 2 and 3 cities. Some of these cities include Ahmedabad, Jaipur, Nagpur, Bhubaneswar, Mangalore, Guwahati and Chandigarh
- To make the best use of this shift — by cashing in on the cost benefit of tier 2 and 3 regions — enterprises and state bodies should undertake the following initiatives:
 - Increase awareness on the sector through educational institutions at all levels to ensure skilled manpower for the sector
 - Develop an IT ecosystem for long-term sustainability of enterprises
 - Leverage IT & ITeS special economic zones (SEZ) to scale up businesses and receive tax benefits

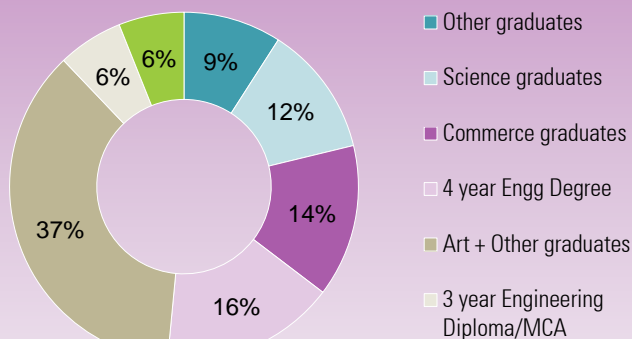
Geographic mapping of India IT & ITeS sector

IT Services	ITeS	ER&D	SPD
<ul style="list-style-type: none"> • Has a strong presence in South and West India, primarily at tier I locations including Bangalore, Mumbai etc. 	<ul style="list-style-type: none"> • North India with Gurgaon has the strongest hold in ITeS domain • Also, has a significant presence in tier 2 cities across India 	<ul style="list-style-type: none"> • Bangalore and Hyderabad has a strong hold in offering these services 	<ul style="list-style-type: none"> • Along with South and West India, East India, primarily Kolkata has a strong presence in this domain • Also, Noida has a significant presence

IT-BPO skill base, 2013E



Talent output, 2013E



Key takeaways

- The sector has a variety of skill sets to offer to a wide array of services across verticals
- About one-fourth of the available talent pool can be directly employed in the sector, which includes engineering graduates and MCA graduates

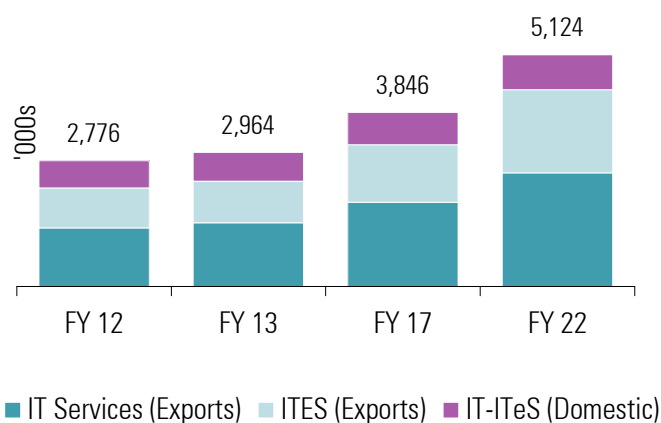
Incremental Human Resource Requirement (2013 – 22)

The sector is expected to provide employment to over 5 million people

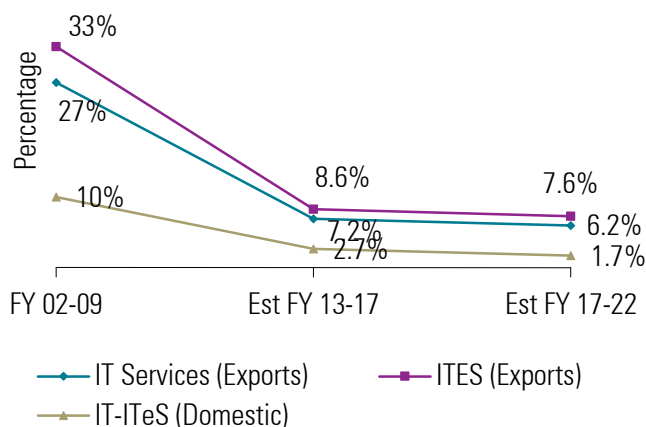
Employment in the IT & ITeS sector

- The Indian IT & ITeS industry employs about 3 million directly and 9 million indirectly
- A majority of employment is generated through the exports business
- Exports contribute about 78 percent of the total employment in the sector
- Employment growth was high during FY02–09 period, however, it started settling down with the increasing maturity of the sector and the evolution of non-linear business models
- The sector is expected to employ about 5.1 million professionals directly in FY22 and exports are likely to dominate

IT & ITeS industry employment forecast



IT & ITeS industry employment growth



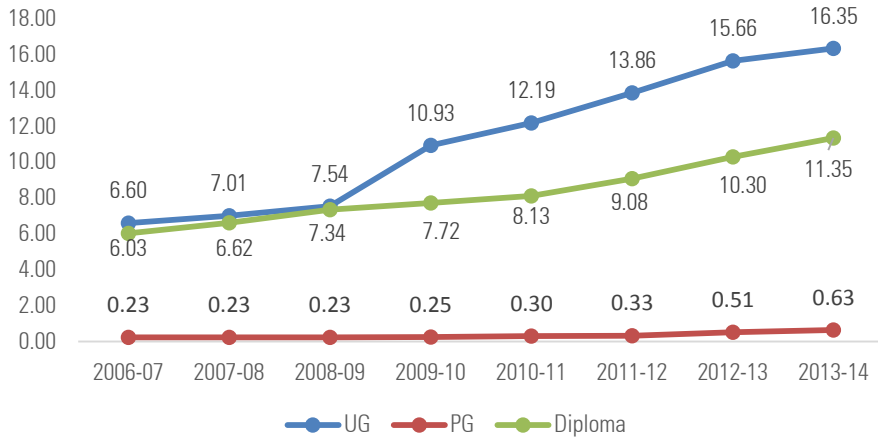
Top 20 job roles by sub-sector

Job roles/ occupation	Sub-Sector	Job roles/ occupation	Sub-Sector	Job roles/ occupation	Sub-Sector
Application development	ITS	Analytics	ITeS	Legal services	ITeS
Application deployment	ITS	Customer relationship management	ITeS	Supply chain management	ITeS
Data scientists	ITS	Finance and Accounting	ITeS	Engineering analysis	ER&D
Infrastructure management services (IMS)	ITS	Health Services	ITeS	Product engineering design	ER&D
Information security	ITS	Knowledge services — Research	ITeS	Product development and delivery	SPD
Project/ program management	SPD	Sales and marketing/	SPD	Transition	SPD
Product Support	SPD	Testing and quality assurance	SPD		

Supply and Training Infrastructure

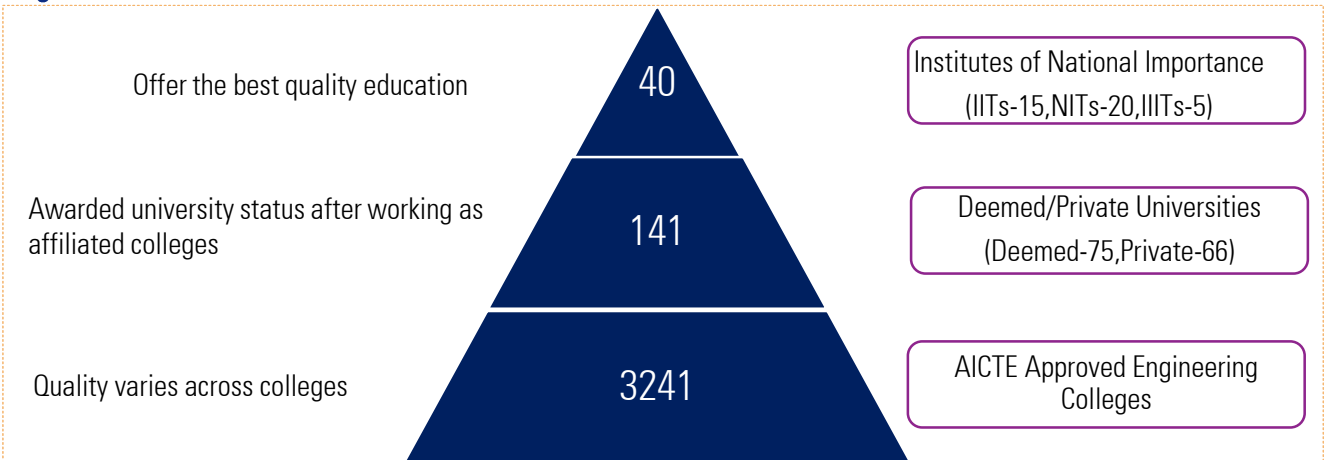
Intake of students for PG courses forms a minuscule % of total intakes in engineering and technology institutions

Intake of Engineering & Technology Institutions (In Lakhs)

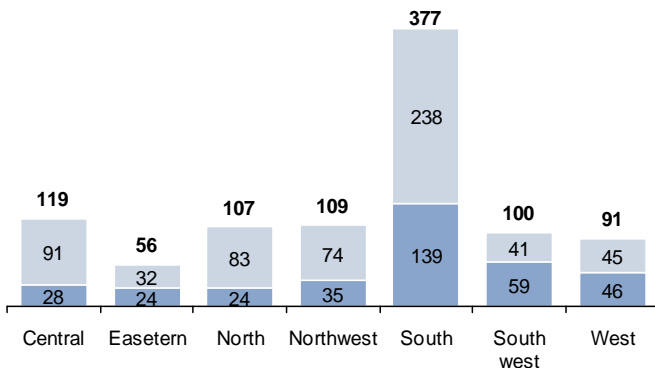


- Intake of students for PG courses forms a minuscule percentage of total number of intakes
- CAGR of intake over the period 2006 - 2014 for UG courses, PG courses and Diploma courses is 13.84%, 15.52%, and 9.45% respectively.
- CAGR in number of institutes offering UG courses, PG courses and Diploma courses over the period 2006 – 2014 is 12.2%, 11.76% and 8.06%.

Less than 10% of Institutes constitute the top of quality pyramid in engineering education offering cutting edge education



Incremental addition of engineering seats



- Southern states have witnessed largest growth in intake capacities between 2005-06 and 2009-10.
- West, South west and eastern regions have witnessed low growth in this period.
- North eastern states and Bihar have lowest engineering seat density per million population indicating potential for private players in these regions provided there is demand in this region.
- Concentration of quality Institutes is uneven with a great demand for such Institutes in Central India.

■ Incremental addition between 2005-06 & 2009-10 ■ 2005-06

Supply and Training Infrastructure

Select recommendations and implications

Recommendation	Implications
Better industry academia partnerships	<ul style="list-style-type: none"> ▪ Industry should collaborate with colleges to set up research labs in the college campuses. ▪ Summer internships should be made an integral part of the curriculum. ▪ Colleges should reach out to more and more industry experts to have them as guest faculties ▪ Industry needs to encourage continuing education programs for their employees in collaboration with leading universities and colleges
Capacity building in regions with low density of training infrastructure	<ul style="list-style-type: none"> ▪ Government should set up technical institutes in regions with low density of engineering colleges ▪ State governments with low density of engineering colleges should provide incentives to private players to set up technical institutes in their states
Focus on improving the quality of faculty and also on increasing the faculty strength	<ul style="list-style-type: none"> ▪ Increased focus on up-scaling programs would help improve faculty quality ▪ Colleges and universities should focus on improving the research infrastructure. Well funded Ph.D programs with opportunities for international exposure should be rolled out to attract students who currently look to pursue Ph.D outside the country ▪ More institutes which provide trainer certification programs should be set up via PPP model
Focus on soft skill training	<ul style="list-style-type: none"> ▪ Colleges and training institutes should focus on developing good communication skills amongst the students pursuing education in IT and ITeS related fields.
Encourage institutes to offer cross-sectoral degrees	<ul style="list-style-type: none"> ▪ Institutes should offer IT modules across other streams of engineering ▪ IT modules should be embedded in the curriculum of other specializations.
Rationalization of targets allotted to current partners	<ul style="list-style-type: none"> ▪ Make provision for additional capacity because existing partners might not be able to meet the targets allotted to them ▪ Create additional capacities in select identified courses/geographies.
Reforming the regulatory framework	<ul style="list-style-type: none"> ▪ An independent regulatory authority should be set up by the government. This agency would be responsible for setting the criteria for entry, granting permissions for entry to higher education institutes, according degree granting power, monitoring standards and settling disputes, licensing accreditation agencies. ▪ Government should increase the financing for higher education ▪ Government should float education bonds and elite institutes must be encouraged to raise funds by themselves
Making certification by SSC more acceptable	<ul style="list-style-type: none"> ▪ Map up-scaling training to SSC certification ▪ There should be a mandate given to the industry to hire only trained or certified manpower



cutting through complexity

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