

Technical Education as a Value Enhancer - A Perspective

MAY 2008





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Preface

The upward momentum in the Indian economy is largely due to sectors that are technology based. The majority of the growth in the last ten years has happened in the IT (Information Technology) and ITES (Information Technology Enabled Sectors). Both these sectors employ a workforce that is in the age group of 22–35 years. It is a well acknowledged fact that India has had the advantage of a skilled youth that could cater to the demands of these sectors. This is essentially because the education system has played the role of feeder to the new economy industries.

The challenge however is to sustain the workforce development and build the competencies for the future. Towards meeting this challenge there is a need to educate the students on how to make choices for the future and be accepted by the market. For students in the age group of 16-18 years, it is imperative to know the diverse career possibilities so that they can compare them to arrive at a selection.

Along with emphasis on values, ethics, political science and other ways of life, the traditional Indian education has always focused on building scientific temper. The country's scientific community has also earned great respect internationally. Vast developments in Science and Technology have opened the gates for more innovations. Besides Science and Technology, Arts, Commerce and Vocational education choices have also to be communicated to the students to enable judicious selection.

With an aim to provide insights for the students and parents regarding career options and build bridges between the different stakeholders of the system, EDUTECH EXPO 2008 throws open its doors as a facilitation platform. The event aims to facilitate information dissemination for all the stakeholders. Combining the information available at EDUTECH with individual aptitudes, the students should be in a position of confidence while selecting a career option.



This EDUTECH Theme Paper prepared by SAITA Consulting as Knowledge Partners is an effort to present the current status of education system in India with a perspective on changes in the education and employment eco-system, which includes not only educational institutions, students, academicians, teachers, trainers but also industry, policy makers, regulators and service providers. The various facets of education discussed are – the Indian education system and employability gap, the various career streams and options, relevance of the curriculum, training methods, and roles of the government and corporate sector in building the system for the future.

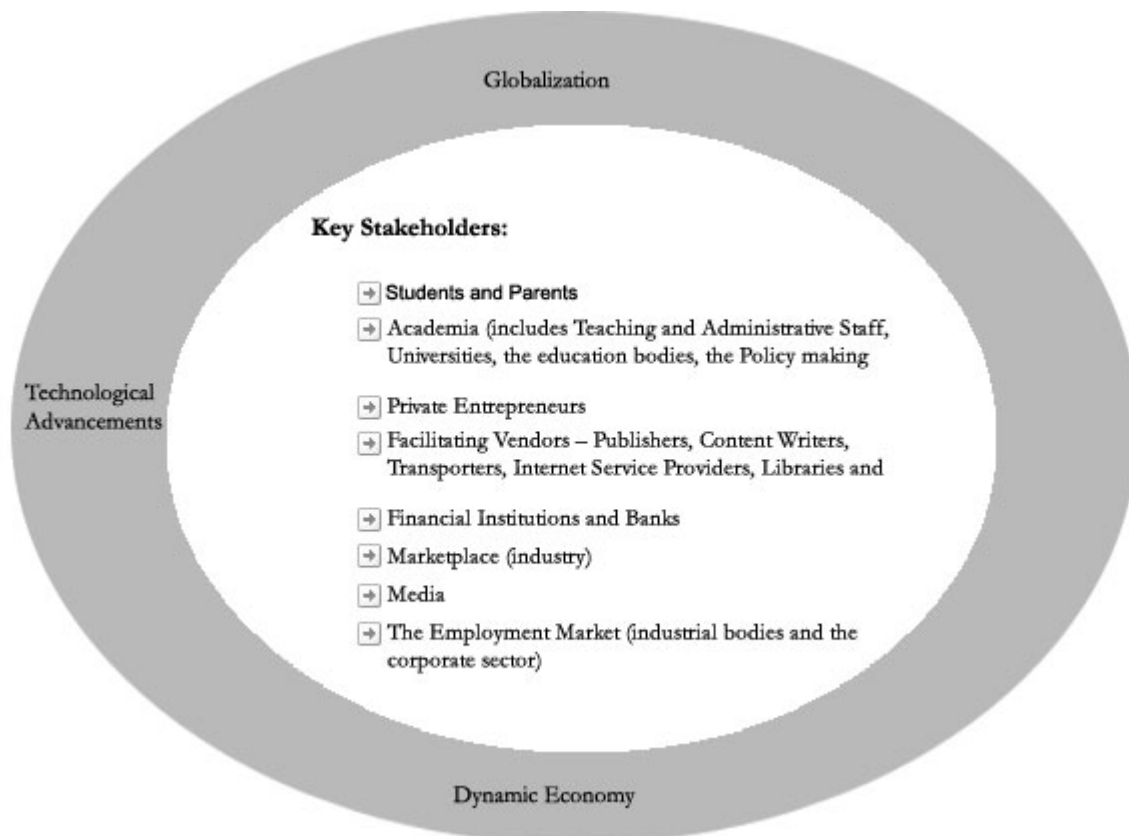


Overview

Industry academia interface -- Bridging the employability and skill gap

Employability as interpreted by students is -- The acquiring of skills and tools of knowledge that will enable a person to pursue a career and be successful in life. Employability as interpreted by the industry or marketplace means -- The preparedness of a candidate to be productive in an offered job and possessing the ability to translate the opportunity into a career. The main ingredients of employability in the second definition are technical knowledge and soft skills like adaptability, integrity, respect for the system, willingness to learn and inter-personal communication. Ideally, a majority of these should be imparted by the education system.

^{#1} Sharing a similar view is Azim Premji, Chairman Wipro Ltd, who says *"While India currently boasts of one of the world's largest most qualified pools of scientific and engineering manpower, the growing global demand for appropriately skilled, industry oriented professionals and a gradually widening demand-supply gap are expected to test the limits of India's manpower development capabilities."*



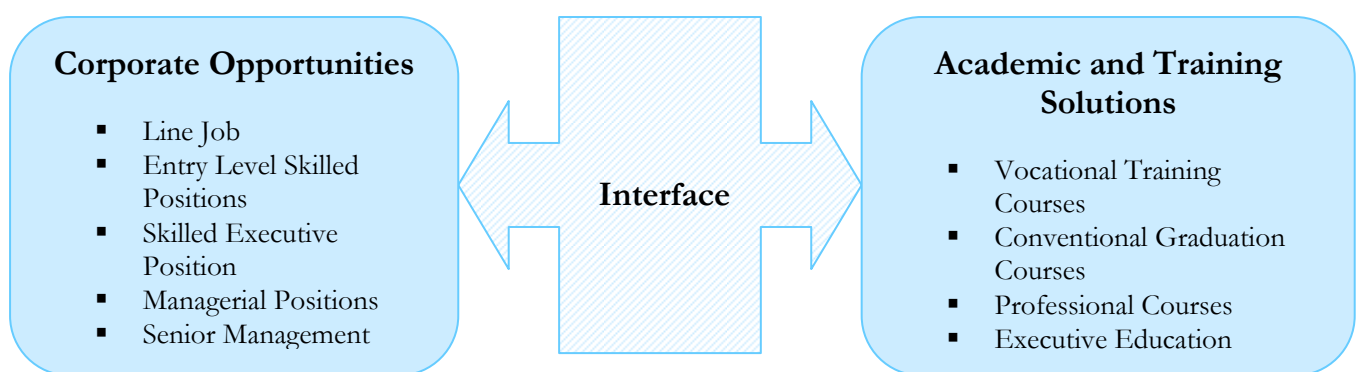


Globalization, rapidly changing economic scenarios and technological advancements form the umbrella influence under which the education system operates. This influence determines the role of the stakeholders (as shown in the figure) in the system. The profitability, growth and benefit of the stakeholders is determined by the context of development, culture and quality of workforce that supports the developmental plans, notwithstanding the fact that the government policies eventually determine the practices that are adopted.

Primarily, the Employment Market (marketplace) consisting of the industry and corporate sectors is the core recipient in the system and the Academia is the resource supplier. For the resource to be of acceptable quality, it should be in tune with the needs of the industry. These needs are spelt out as skills training to be imparted in schools and colleges. Creating curriculum that ensures the development of these skills is essential to bridge the gap between education and employability. This can be better achieved by continuous initiatives wherein the industry and academia interact. Broadly, the natural outcomes of such interface are:

- ➡ Better understanding of present and future needs of the marketplace.
- ➡ In-depth analysis of the curriculum, training methods and identification of systemic gaps.
- ➡ Building the approach to holistic education
- ➡ Identification of career choices for the future

The interface defines the outcome in terms of possible opportunities:





Realizing the career opportunities that the Indian industry would offer, ^{#2}Delhi University and Confederation of Indian Industry (CII) together have initiated short term courses in high demand sectors. Prof. Deepak Pental, DU Vice Chancellor said, *“The objective is to provide employable skills to undergraduate students and provide skilled manpower to the industry.”*

Apart from academia and industry chambers, the marketplace too shares the same view. ^{#2}An example of the same is Pantaloon, where employees joining after Class 12 are encouraged to pursue BBA through correspondence on company’s cost and graduates are encouraged to take a sabbatical, do an MBA and join back with a promotion in the relevant vertical. Sanjay Jog, HR Head, Pantaloon, *“If people have to grow within the company they have to educate themselves and we encourage our employees to regularly upgrade their skill sets and knowledge base.”*

These are pointers to show that the present scenario has gaps to which the system has been paying limited attention. The scenario becomes vivid when we look at the IITs and IIMs. These institutions have been the pride of Indian education system for almost fifty years and a large number of successful managers and scientists have been trained here. Recent studies show that at least 6-10 alumni of these institutions are global CEOs, whereas the institutions are nowhere in 100 best institutes of the world. A closer look into reality speaks of the efforts of the individuals in honing the skills rather than the system generating world-class talent.

If the system generated the best talent, more Indian and International students will find it attractive to grow here.

Some initiatives have been taken by the corporate sector in this direction to tie up with the Universities and Government institutions to link the required industrial skills with the curriculum and training at colleges. To mention a few:

- ➡ LG Electronics has signed a MOU with 23 Industrial Training Institutes whereby the institutes would train students in line with LG’s requirements and LG would give employment preference to these institutes.
- ➡ The Osmania University and GENPACT have tied up for an undergraduate course which imparts specific Accounting and Business Process Outsourcing training to the students. These students spend their time equally between college and GENPACT to learn concepts and job-related skills. An attractive stipend is paid for the students who qualify for the program. The students who successfully complete the 3-year graduation program are then absorbed



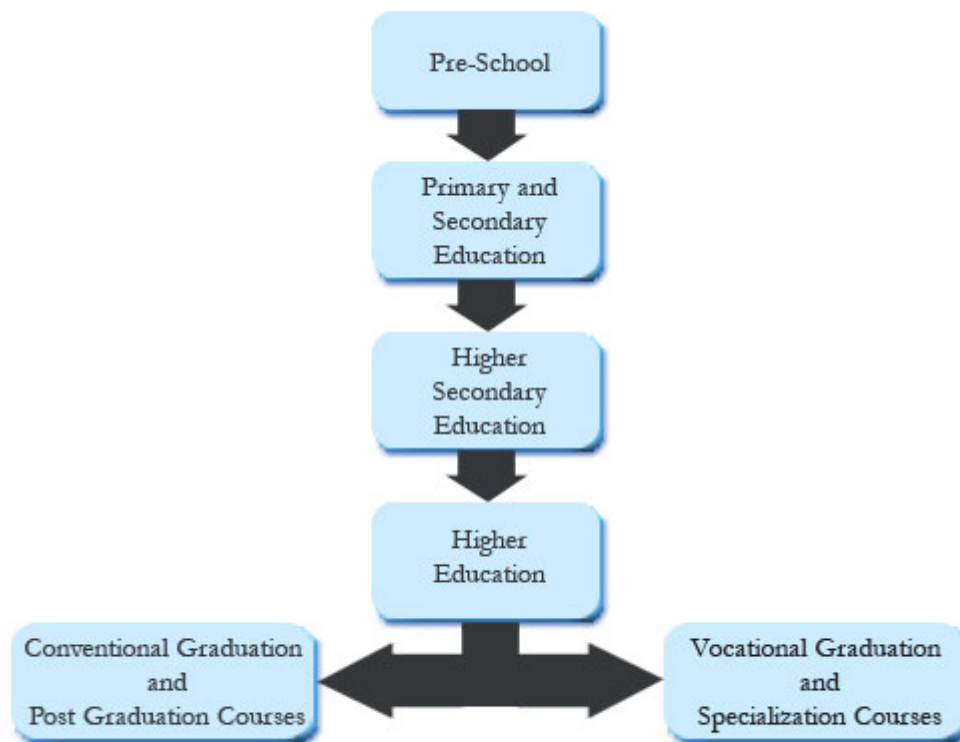
as Associates at GENPACT. Similar arrangements have been worked out with Delhi University and the University of Rajasthan.

- Infosys BPO is partnering with Karnataka University to produce “Industry Ready Professionals”. The program shall align the required skills of the BPO, the training capacities of the teaching staff at the university and the course defined by the University.
- Field fresh foods, a joint venture between Bharti and Rothschild has a tie-up with Punjab Agricultural University for creating awareness and introducing best practices and suitable technologies for farming in India.
- Symbiosis Institute of Business Management (SIBM) has a tie-up with the Institute of Company Secretaries of India (ICSI), which has led to a modified curriculum for the first year students of Finance at SIBM.
- Bharti Resources, a subsidiary of Bharti Enterprises has tied up with Global Retail School in Chandigarh to impart training for the retail industry. Commenting on the same, Sanjeev Duggal, CEO and Executive Director, Bharti Resources said, *“We have entered into a strategic partnership with the Global Retail School to bring modern skills, knowledge and progressive training to create employability for young people in the growing retail sector of India.”*
- Oil firm Gujarat State Petroleum Corporation has joined hands with the Government to set up Pandit Deendayal Petroleum University (PDPU), a specialized petroleum university to meet the demand of specialized engineers and managers for this sector.

More such collaborative initiatives would go a long way towards bridging the gap.



Layers of the Indian education system



The Indian formal education system constitutes of 1-3 years of pre-school and nursery, 10 years of primary and secondary education at school and 2 years of higher secondary schooling where the choice of science, commerce or arts stream is made. Thereafter, 3-4 years are dedicated in pursuing a Graduate program or a diploma course, followed by 1-2 years of Post-Graduation program. The M.Phil and PhD degrees follow Post-Graduation.

Traditionally, Indian education has emphasized on building the scientific temper and linguistic skills. At every level of education, primary emphasis is on the conceptual understanding. In contrast to the education systems in Western countries, the system lays less emphasis on practical education, thereby making the learning process considerably abstract. Less orientation to practical education is an impediment to on-the-job application and reasoning skills.

Problem-solving and innovation too are not highlighted and this could be one of the contributing factors for the low-risk taking character of Indians. Though efforts are now being made to change the system they are still in a nascent stage to expect drastic changes.



At the end of 12 years of schooling, the child learns:

- ➔ Reading and comprehension skills
- ➔ Basic calculation and analytical skills
- ➔ Civic literacy and fundamental laws, duties and rights
- ➔ Global awareness
- ➔ Fundamentals of the chosen stream of education

These skills are just sufficient to develop further understanding. The conventional system of schooling followed by learning at the universities meets the career needs of the students only to the extent of qualifying for a job. To meet the employability pre-requisites, the student needs to pursue additional courses to gain specialized expertise and turn to support outside of the system.

Employability Pre-requisites



The layers of education system need to be entwined with appropriate levels of values, vocational and non-vocational training to build the balance in the skill levels of the students and make them suitably employable.



Academia Insights and Higher Education in India

Higher education is the transition from school to university education. Upon completion of 12 years of schooling, the program for higher education at universities is selected usually in line with the subjects chosen at the high school level. The most popular and sought after careers in India are Engineering and Medical sciences. A typical Indian family is known to push children towards Science and Technology as a choice. The next preferred choice is Accounting. Students with a family background in public services are known to choose Arts and Commerce subjects for higher education. Until recently, for students whose choices were not among the three main streams, it was difficult to make a career choice. The scene is now changing with myriad openings in streams that are combinations of the core stream subjects. With over ^{#3} 16,000 colleges, 4,50,000 teachers and 99,54,000 students, India's higher education system is among the largest in the world and has been doing reasonably well in shaping the students for advanced learning, though not very efficiently preparing them for new-age careers.

In recent times, with the advent of technology, especially the internet, many new options of higher education have opened up. Bio-informatics, Nanotechnology, Genetic Engineering, Technology Management, Infrastructure Management, Portfolio Management, International Business Studies, Statistical Research Analysis are among a host of other choices in the technical branches of study. The non-technical area includes Fashion Designing, Office Management, Fire and Safety Management and Journalism among many more.

Since Engineering and Medicine are still considered high on the list of careers to be pursued, there is an immensely high degree of load on the system to give opportunities to all the aspiring students. It is also essential that the system should ensure that the students entering the higher education courses possess suitable caliber. The need to enhance and equip the system to face challenges of ever-evolving needs of students and industry is immense, especially in light of the complex political and social structures in India. Due consideration and care should be exercised while developing various policies and systemic interventions so as to not jeopardize the future of students and the quality of future workforce.

Teachers, trainers and the policy making authorities form the other important section of academia apart from the students and the curriculum. In the initial years of learning, the teachers and later the trainers play a crucial role in the development of an individual. Agencies like National Council of Educational Research and Training (NCERT) are



continuously striving for newer methods of teaching. The teachers in the ambit of the government agencies are trained periodically. The fact is that all this is too slow and too little in times when changes are blitzkrieg. In India, the large higher education system still focuses on teaching whereas it should be inclined towards training. This change in orientation will bring in a great deal of effectiveness in building a ready workforce.

For the purposes of training educationists in Technology and Management there are very few training institutes in India. This is an obstacle in adopting the best practices at higher levels of education.

The backbone of higher education has been developed, it needs to be strengthened. This needs the commitment of the government agencies. Issues like better performance of autonomous institutions in comparison to government run universities and colleges need to be addressed. A balance needs to be struck between broadening the base of the education and improving the quality. While the former is a socio-political obligation, the latter is the demand of the economy.

Vocational Education

Vocational training caters to the industry needs of hands on skills, while the university higher education in India caters to a segment of industry that is essentially corporate or research oriented. Professions like IT Infrastructure maintenance, Beauty care, Paramedic Healthcare, Physical Training are among those where the workforce is trained on their vocations while being taught the theoretical concepts.

Though the Industrial Training Institutes were established with a view to provide the vocational training and thereby develop skilled people for the industries, more needs to be done to grow them at a pace with the industrial requirements. Therefore, vocational training in the present context has become a domain that is driven by private institutions. Increased

Industry–Academia interface in this segment shall improve the range and quality of Vocational Education in India.

Vocational education provides opportunity for those students whose strengths lie in practical work. Choice for vocational education can be made from a boutique that includes courses for Airline Ticketing, Beautician Courses, Cartoon and animation, Career in Design including Fashion, Textile, Accessory and Jewellery Design, Criminology and Detective courses, Event



Management, Fire Safety, Hotel Management, Radio Jockey Courses, Photography Course, Sports Management, Tea Management, Technician and Plumbing, Tailoring and Dress Making, Yoga Education etc.

To decide on the career option, a student needs to have a fair idea about personal interest areas, the upcoming sectors, skills in demand, infrastructure and resources required and the academia offerings for the same.



Demystifying the Education Matrix

Rising Sectors

When the economy is booming, almost all sectors appear very attractive. The available educational choices and career avenues in the offing together are a mind puzzle for the students and the parents. Making the right selection for pursuit becomes a complicated task. Essentially, the growth potential of the sector and the salary decide the preferences. As per the reports of the government agencies like Indian Council of Applied Economic Research (ICAER), sectors like Aviation, Marine, Telecom and Engineering are projected to grow at rates higher than ever before. Aviation alone is expected to grow 100 percent over the next 5 years.

The spillover created by the rapid development in some sectors impacts the rate of growth in others. For instance, tourism and aviation affects the Hotel and Hospitality industries.

The matrix of in demand sectors and the skills to fill the openings is essentially defined by the trends of industry/sector growth. These areas of focus create a spillover in the society thereby giving rise to a large basket of career options ranging from Publishing and Editing to Portfolio Management and Corporate Law to Media Jockeying, Beauty Parlors, Event Management, Fashion and Apparel Design etc.

Foreign universities too are playing a major role in training the Indian workforce. This is evident from the 20 percent annual growth rate in the market for training in foreign education tests like SAT, GMAT and GRE. Close to a million students are enrolled in foreign universities. Apart from admitting the students on their campuses, these universities are partnering with organizations and Indian universities to build institutions of higher learning in India.

Non-Resident Indians (NRIs) too have influenced the availability of talent in the employment sector as well as in the quality of teaching and training in institutions. Institutes like Amrita University and SJSOM of IIT Mumbai are some examples where the NRIs have made financial investments. They are bringing in the international experiences to India by taking teaching responsibilities in the Colleges.



The table below would give you a glance to some of the rising sectors.

| Sector | Outlook | India's strengths | Training and Education Avenues | Career options | Sector attraction |
|-------------------------------|--|---|---|--|---|
| Maritime | Projected huge growth in Ship building and Ship repairs. FDI's are given incentives. | Globally acknowledged training facilities | New initiatives to attract talent to upgrade ports. A number of Shipping Career Training Institutes across the country. | Marine Engineering, Indian Naval Service, Merchant Navy, | Exciting sea life. Most of the marine related careers are fairly high paying. |
| Aviation | Projected 100 percent rise in aircraft fleet in the next 5 years | Growth as a Business and leisure travel destination | Currently capable of producing 100 pilots. More pilot training institutes in the making | Engineers, maintenance and ground duty staff, Pilots, Crew members and Pilots | Highly lucrative for crew members and pilots as they are paid premium salaries. |
| Insurance | India's insurance sector accounted for 4.1 per cent of GDP in 2006-07 and the domestic insurance industry is estimated to be around USD 60.5 billion by 2010 | | | Actuaries, Underwriter, Surveyor, Investment Advisor, Third Party administrator, Insurance investigation and fraud detection | Few institutes offer specialized training and courses in the areas of insurance |
| Manufacturing and Engineering | Projected to grow at approximately 7.5 percent for the next 2 years. | | Growing number of engineering colleges. | Automobile, Power generation | Manufacturing and Engineering |

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| Sector | Outlook | India's strengths | Training and Education Avenues | Career options | Sector attraction |
|-----------------------|---|-----------------------|---|-----------------------|---|
| Entertainment & Media | <p>Estimated growth in radio is 40 percent; on mobile gaming is 700 percent; advertising at 61 percent; on cinema is CAGR of 16 percent; Television at CAGR of 22 percent; Music at CAGR of 4 percent per annum.</p> <p>Government has permitted 100 percent FDI through automatic route for film industry and advertising; 49 percent foreign holding in cable TV and DTH; 100 percent FDI in non-news publications and 26 percent FDI in news publications.</p> | Entertainment & Media | <p>Estimated growth in radio is 40 percent; on mobile gaming is 700 percent; advertising at 61 percent; on cinema is CAGR of 16 percent; Television at CAGR of 22 percent; Music at CAGR of 4 percent per annum.</p> <p>Government has permitted 100 percent FDI through automatic route for film industry and advertising; 49 percent foreign holding in cable TV and DTH; 100 percent FDI in non-news publications and 26 percent FDI in news publications.</p> | Entertainment & Media | <p>Estimated growth in radio is 40 percent; on mobile gaming is 700 percent; advertising at 61 percent; on cinema is CAGR of 16 percent; Television at CAGR of 22 percent; Music at CAGR of 4 percent per annum.</p> <p>Government has permitted 100 percent FDI through automatic route for film industry and advertising; 49 percent foreign holding in cable TV and DTH; 100 percent FDI in non-news publications and 26 percent FDI in news publications.</p> |

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|---------|---|--|---|--|--|
| Energy | Includes oil and gas, hydel, thermal and non-conventional energy resources. | India has one of the highest gas reserves. Due to the high growth rates, non-conventional and cost-effective energy generation methods are encouraged by the government. | University of petroleum sciences at Dehradun specializes in this field. | Geophysicists, engineers, consultants and energy experts. | Large FDIs and international collaborations. |
| Telecom | <p>India is one of the fastest growing telecommunications market in the world with 281.62 million telephone connections by January 2008.</p> <p>Booming domestic telecom market has attracted investment of over USD 15.21 billion Indian companies in 2007-08 and the cumulative FDI inflows from April 2000 to December 2007 have been USD 3.62 billion</p> | The sector is emerging with great facilities for handset and telecom equipment manufacturing. | To cater to the manpower requirements, private institutes have come up with diploma courses in Data Networks; Optical Networks like SDH, SONET, DWDM; Wireless Networks (GSM, CDMA, 3G); Next Generation Networks (NGN) and Broadband Technologies. | Jobs in Telecommunications & Wireless Technologies, Telecom Software are available | <p>Owing to the large market multinational companies and are attracted to enter the market.</p> <p>More job opportunities across all levels of careers are open.</p> |



As regards entertainment and media, there is a plethora of opportunities that arise from Cinema, Television, Radio, Advertising etc and this sector holds potential to churn around USD 200 billion by 2015. Apart from the contemporary requirements, this sector has given rise to new openings in the area of animation, gaming, radio jockeying and more. #4 *“Gaming is just opening up in India. There are exciting career and growth opportunities for talented youngsters”*, says Carlton D’Silva, Creative Director, Hungama Mobiles.

Maritime

Another rising sector is Maritime, which is clearly evident by the 2006-07 Annual Report of the Ministry of Shipping. #4 The report reveals that approximately 95 percent of India’s trade by volume and 70 percent by value happens through maritime transport. The salaries offered in this sector are lucrative and popular job opportunities in the Maritime industry include Navigation Officer, whose starting salary is Rs.45,000 per month and Engineering Officer with a starting salary of Rs.45,000 per month. #4 Sunil Dutt Sharma, Kuwait Oil Tanker Company says, *“The pay packages are pretty good in this field. There is a shortage of manpower and this is beneficial for beginners who have the power to choose their companies.”*

Aviation

Closely related to the above mentioned sector is Aviation, which is also booming. In terms of plane and crew requirement, a plane requires minimum crew of 10 members. With an additional fleet of 300-400 planes over the next five years, the country would need at least 30,000-40,000 new crew members over a five-year period. However, the Indian flying schools produce approximately 100 pilots every year. #4 The same view is shared by Ruby Arya, Executive Vice President – HR, Kingfisher Airlines who adds, *“With a requirement of almost 935 new aircraft to satisfy the country’s demand for air travel between now and 2025, and as many as 44 large aircraft needed to service domestic, intra-regional and long haul international markets, the potential of Indian markets is being recognized globally.”* #4 Ashok Chawla, Secretary, Civil Aviation, believes that this is only the *“tip of the iceberg, as today we have about 35 million passengers and about 25 million fliers traveling internationally. What’s likely to happen in the next five years is that these numbers will go up two-and-a-half to three times. The number of aircraft for commercial use which is about 300 will touch 600-700 in the next five years. We are short by 10 percent of the pilot fleet even after accounting for the fact that there are 550-600 foreign pilots.”*

Maintenance Repair and Overhaul (MRO) work on aircraft, presently carried out by foreign MROs will be conducted by Indian engineers as more such facilities are being commissioned



to set up. One such facility will be set up in Nagpur by Boeing and the Maharashtra Government together with an initial investment of Rs.400 crore.

The most common jobs in the Aviation industry include jobs like a Pilot, who gets a starting monthly salary of over Rs.1.5 lakh, Cabin Crew with a monthly salary of Rs.20,000-25,000, Maintenance Engineer earning a starting monthly salary of Rs.6,000 and Ground Staff gets a monthly salary of Rs.13,000.

Telecom

Installing 281.62 million telephone connections (by January 2008), India is now the fastest growing telecommunication market in the world. All the segments namely mobile service providers, mobile handset manufacturers and mobile value added services are doing exceptionally well. Various career options available in this field include jobs of Engineers, Test Engineers, Software or Applications Engineers, Product Managers, Customer Support Staff, Public Relations and Government Relations.

Manufacturing and Engineering

India's domestic market with availability of low-cost workers coupled with research initiatives and advanced technology has been instrumental in attracting the ever expanding number of multinationals who are setting up their manufacturing base in the country. The most common Manufacturing jobs can be in areas like Assembly, Installation, Maintenance, Testing, Research & Development, and Repair etc. Apart from Engineering, there are other vocational courses that can fulfill the market requirements.

Retail

According to India Brand Equity Foundation (IBEF), the Retail industry is expected to grow from USD 330 billion last year to USD 427 billion by 2010 and USD 637 billion by 2015. The Government has also allowed 100 percent Foreign Direct Investment (FDI) in cash and carry through the automatic route and 51 percent in single brand. The increased number of malls, departmental stores, shopping arcades and retail outlets are opening avenues and to meet the job demands, some MBA institutes have included Retail Management as a specialization.

Common jobs in this sphere are Supply Chain Managers, Visual Merchandisers, Sales Executives, Department Managers, Store Managers and facilitating staff of cleaners, logistic support staff etc. ^{#5} "We need 8 million people in organized retail by 2011, of which about 500,000



would be working in the 300-400 malls that would be there by then," says Ashish Mahajan, Head (Retail Solutions Group), Indian Retail School. So, there is a lot of untapped potential.

Soft Skills

The industry has jobs to offer, but the candidates are many times unemployable. This is due to the gap created by skills other than the job-related skills. Inter-personal communications, Business communication, ability to work in teams, assimilating with the values of the system are other essential qualities to be possessed by a job-seeker. This requirement has given rise to Rs.300 crore “Soft Skills and Personality Development Courses” industry in India.

Along with career related industry information, the assessment of aptitude of the individuals is essential to identify the strengths. A combination of the industry information and personal strengths is an ideal formula to solve the puzzle of career choice.



Educational Support Systems

Higher education is a compulsion in the new age economy. Specialized education requires financial, infrastructure, cultural and research and training support. For the different levels of education, these supports are vested in different authorities. A coherent policy linking all the bodies like NCERT, UGC, ICMR, and AICTE will avoid disjoints in the education process. These disjoints are bottlenecks in the growth of the student community because of the large number of private institutions that are opening up. Despite, the policies to bring private education under one ambit, differences persist because of the competition among the entrepreneurs. Though the private institutions complement the education framework, a thorough integration is still a requirement.

The financial assistance angle to education is now adequately supported by banks and financial institutions. Many initiatives have been introduced to improve assistance to the weaker and other sections of the society. Scholarships for education in India and international locations are being made available. The need of the hour is to spread increased awareness among the prospective recipients. The scene on the loans and aids in the country is to make the best resources available to the deserving candidates.

- Approximately 6 percent of the GDP is devoted to the education sector by the National Government.
- Nationalized Banks give loan assistance to a maximum of 20 lakhs with tangible securities.
- The Government, through the Ministry of Human Resources Development and the various state Governments releases Rupees as aid.
- National Scholarships are available for various pursuits of higher education.
- The foreign countries' scholarships include the Rhodes, Fullbright, Ford Foundation. (Ministry of HRD, Department of Higher Education.
- Charitable trusts and foundations are supporting lakhs of students across the country. Some of the notable foundations are TATA Memorial Fund, Educational Cum Vocational Association For The Disabled (EVAD), Pratham India Education Initiative.

Loans and aids for educational entrepreneurs and establishments for producing Books and Journals are being made easily available.



A lot has been said by the educationists and reforms experts regarding the encouragement for higher education. All the support is of value when it reaches the end consumer. However, there is more support required, in the form of:

- ➔ Technology
- ➔ Training of teaching professionals
- ➔ Availability of good quality teaching tools
- ➔ Proper laboratories and systems for higher research and experimentation
- ➔ Investments to upgrade the existing institutes of vocational training
- ➔ Research and Development from the other parts of the world to be implemented
- ➔ Increased number of specialized vocational institutes

Rapid strides are being made in the field of online education. ^{#6} Though presently at 3 percent, broadband penetration has been increasing at the rate of almost 2 percent annually. The government is mooting plans to intensify the application of Internet and Communication Technologies (ICT) in higher education, state-run BSNL has been asked to dovetail its facilities to align with the needs of e-learning projects.

Satellite-based programs are run by the UGC. The IIMs, IITs and XLRI along with many other institutes conduct e-learning programs. EDUCIL is a quasigovernment body consulting to the Government on various developments in the field of education.

In a country with emphasis on Mathematics and Sciences, advancement of research facilities at IISCs and IITs and the Statistical Institutes is not in proportion with the resources allocated. It is essential to plug the holes that drain the resources.

World-class institutions need world-class equipment. Our colleges should be provided with the most advanced equipment and tools so that the research is at par with the best in class. While this is an area of concern in the government-run and aided institutions, private institutions are performing better.



To support higher education, the social support is a sublime but important factor. The society is still being influenced by dogmas and conservative traditions. Grassroot level education to overcome them is important. Never before has it been so important to alleviate child labor than now. If technology enabled-low cost education can be driven far and wide, the economically weaker sections of the society can be attracted to education while earning. E-learning, learning through mobile phones and television will go a long way in facilitating this.

Another area that should draw attention is the facilities for education of the persons with disabilities and learning challenges. Psychological support at school level should be ensured. Counselors and trained teachers in special education should be deployed so that this section of the society gets its due place. The Persons with Disabilities Act 1995 indicates that disabled persons should have access to education at all levels. The Report of Manpower Development published by the Rehabilitation Council of India reveals that more than 1,00,000 teachers will be needed in the next ten years to cater to the educational needs of disabled children in schools.

The universities and higher education institutes are given special financial assistance by the UGC to open specially designed facilities in order to cater to the special needs.



Education – Driver of Future Growth

- The changing economic scenario has led to the shift in education from theoretical to practical. This is also giving rise to a continuous need for revising the curriculum of higher educational programs.
- Shortage in skilled workforce has encouraged industry-academia interface and companies are open to liaison with institutes so that individuals are appropriately trained.
- With attractive salaries being offered for the new occupations, the societal impressions are changing and there is greater acceptance to vocational courses.
- India is attracting international students, which is visible by the figures available with Association of Indian Universities (AIU), while foreign enrollments have increased from 6,988 in 2000 to 25,947 in 2006.
- Liberalization and globalization has led to increased awareness about the international benchmarks in higher education, which has geared the Indian youth to become globally competitive.
- The advent of Internet has made worldwide information easily accessible for those who have the Internet facility available with them. Hence, new forms of education have come into shape.

The road to be traveled:

- The Indian education system produces manpower with basic functional skills and not specific skills, hence, there is a need to strengthen the ties between the industry and academia and translating into reality the conceptual outcomes of research. Platforms like EDUTECH EXPO provide the required interface between the key stakeholders i.e. Students, Entrepreneurs, Industry, Academia and the Government. More interactions between the industry and academia should be facilitated by the government agencies. Round-tables involving eminent industrialists, educationists, policy makers, international universities' representatives should be held. The discussions and suggestions should be implemented so as to bring about an aligned education system.
- The dynamic economies are making technologies and business practices obsolete at a fast pace. Hence, it becomes important to update the curriculum of professional education to meet the dynamic industry requirements. At the



same time, it is also important to ensure that the curriculum should have practical orientation.

- ➔ Apart from the need to revise curriculum, there is also a need to periodically assess the quality of education delivery. The evaluation of the same can be done through authorized agencies and as required the teaching staff should upgrade their skills just like the case in other professions. The Government should make investments in advanced training for teachers and trainers in order to improve the quality of knowledge imparting techniques and tools.
- ➔ Developments in the global economic scenario and emerging opportunities in business and lifestyle have given birth to a range of career options, which promise to emerge as careers of tomorrow. Some of the emerging career choices are enlisted below:
 1. Care Giving Professionals
 2. Digital Content Specialists
 3. Healing and Alternate Therapy Professionals
 4. Green Experts
 5. Civil Infrastructure Managers
 6. Maintenance and Services Management Professionals
 7. Sports Managers
 8. Food Management Experts
 9. Robotics Experts
 10. Green Mechanics
 11. Communication Network Managers
- ➔ The in-equilibrium in demand and supply of quality workforce across unconventional streams can only be met if specialized training and courses are introduced and the youth enrolls in these courses.
- ➔ Career counseling to be introduced at a higher secondary level so that students can be guided in a particular direction.
- ➔ Public-private partnership ventures should increase to make higher education more relevant pertaining to the industry needs
- ➔ The government policy should ensure the barriers to entry into institutes of excellence. While reservation and special privileges should hold their place, compromise on quality and merit impacts the morale of the deserving.
- ➔ Strict vigil should be maintained against institutions that run unrecognized educational institutions and institutions that by-pass the laws.



- There is a need for redressal forum in the ambit of education sector for students and other affected parties due to fraudulent educational institutions.
- Higher degree of social awareness should be brought about for putting social pressure to boost efforts for higher education for girls and specially-abled children.
- The corporate sector should share with the government the onus of building a workforce for their future needs.



About EDUTECH and EFY

EDUTECH EXPO

An event born in June 2006 with the aim of bridging the gap between academic institutions offering technical education and students seeking the same. The idea was conceived with the feedback received from the readers of EFY Group's publications, who kept on seeking guidance on careers to choose, and institutions to opt for. Since, EFY Group primarily caters to the technology-related segments of society, thus it was decided to focus on technical education only.

Thus, formed the goal of EDUTECH, "To make it easier for students, and their families to take an informed decision regarding the careers to opt for, and the academic institutions to apply to."

EFY GROUP

Over the last 40 years, EFY Group has become synonymous with cutting edge technology. Today, this renowned media group is spread across 8 locations catering to the intellectual needs of a diverse readership across India and abroad.

Starting with its flagship publication Electronics For You, South Asia's most popular electronics magazine, the group now offers a bouquet of specialized publications to answer the needs of a technology hungry nation.

EFY symbolizing the company's vision is the source of enlightenment for an elite electronics fraternity, in India and abroad. Surprisingly, the appeal of the subsequent publications – Linux For You, IT, ePower, Benefit, Facts For You and Electronics Bazaar, spilled much beyond the targeted audience – penetrating non-technical readership with their simple, lucid and jargon free vocabulary and easy-on-the-eye design.

The group also publishes directories and books and is behind several leading technological events. Recently, it also launched web-portals, including Electronicsforu.com, EFYTimes.com, BPOTimes.com and openITis.com, which have become leaders in their respective categories. EFY Readers' Choice Awards is a coveted honour and Open Source India Week (LinuxAsia) is among the eagerly awaited annual events organised by the group.



About SAITA

SAITA Consulting is India's first General Management Consulting firm focussed on Small and Medium Businesses (SMB). As the service provider of choice to SMBs, SAITA Consulting provides transformative consulting solutions to small and medium business moving towards cohesive growth and excellence. SAITA Consulting assists, advises and implements key consulting solutions in order for organizations to achieve their strategic goals, meet profitability guidelines and human capital aspirations.

SAITA Consulting provides its services through four key vectors - Organizational Transformation and Strategy; Communication and Brand Management; Research and Business Intelligence Services; Emerging Markets - Strategy and Support. Today SAITA Consulting services clients representing the following sectors - Steel, Telecom, Infrastructure, Education and Training, Tourism, Consulting, Communication, Media, Not-for-Profit and Publishing. The company is based in New Delhi.



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Other news items

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