



HIRING TRENDS OF FRESH ENGINEERING GRADUATES



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SECTORS HIRING FRESH ENGINEERING GRADUATES

It is estimated that about 3 lakh fresh Engineering graduates were

placed (on campus and off campus, put together) during 2012-13, out of over 8 lakh students that are graduating in 2013. About 1.8 Lakhs (about 60%) of them were placed in IT/ITES industry, with the balance from other sectors like manufacturing (PSU as well as private), construction, service industries (like banking and telecom) and Central Government/defence (including Indian Engineering Services).

Due to attractive salaries by private higher education and training (which includes coaching institutes), some students, with passion for teaching, have been joining teaching

profession. Of late, there has been an increasing trend of fresh engineering students to become entrepreneurs.

It is estimated that about 80% of the hiring is done through campus recruitment, which is predominantly by IT/ITES industry. Out of the balance 5 lakh students, about 1.60 lakh students are expected to pursue higher studies (about 50,000 in MTech/ME in India, 30,000 go abroad to do MS and the balance 80,000 pursue MBA). It was also noticed that some of the students pursuing MTech leave their studies if they get a job, as salary levels for graduating engineers are generally higher than



for post graduates in engineering.

LEVELS OF PLACEMENT:

Type of companies, job profile and salary levels depend on the profile of the college and competence level of the individual student.

i Most of the students from the premium tier-I colleges (IITs) get placed primarily in MNCs (like Samsung, Sony, Toshiba, Google, Microsoft, Facebook, Mercedes, McKinsey etc) in India or abroad. Job profiles are primarily product design, R &D etc, wherein creativity and innovation is demanded. It is estimated that at IIT, Delhi, about 24% of the placements are from core technology companies, 22% from IT product companies, 17% from consulting/analytics and balance from others. During current season, highest yearly salary for

overseas posting is \$150,000 (about Rs 84 Lakhs) from Samsung and the next best is \$135,000 (Rs 76 Lakhs) from Google. Placements as well as salaries for IIT graduates are not generally affected by economic conditions in India or abroad. No wonder, there is so much of craze for IIT seats!

ii Students from tier-2 colleges (NITs, BITS, BIT etc): IT services constitutes a large proportion of recruiters from them, though percentage of non-IT recruiters has gone up from 20% to 40% in the last 3 years, due to conscious efforts from the colleges, keeping in mind the changing inclination of the students to non-IT jobs. Non-IT sectors hiring from them include automotive (like Tata Motors, Maruti, M&M, Ford etc), telecom (Ericsson, Alcatel, Nokia etc), Electronics / semiconductos

(Honeywell, Intel etc). Number of jobs and salary levels are generally less than IT companies. Overall, average salary level for this type of colleges is Rs 6 Lakhs per year.

iii Students from tier-3 colleges (like VIT, SRM, CBIT, GITAM, etc): Over 90% of the placements are from IT services. Due to slow down in hiring of IT services companies, most of these colleges were affected adversely. However, colleges like VIT consciously increased the share of non-IT placements from about 3% in 2008 to 10% in 2012, though on a much larger base. Average salary level for these colleges ranges from Rs 3 Lakhs to Rs 4 Lakhs per year.

iv Students from tier-4 colleges: A number of colleges in this category find it difficult to get campus placements for all of

their students , as a result , the students have to fend themselves by way of “off campus” placements

B. OTHER SECTORS

- i. In the last 5 years, with increased globalization, a number of MNCs (like Intel, Samsung, Nokia, Sony, Ford, Daimler Chrysler, Schneider, General Electric etc,) have set up and scaled up Design centres / R &D centres in India and have been hiring fresh engineers to man their centres. Besides , some of the Indian corporate in sectors like automotive, heavy engineering, set up large design centres for product design, not only to cater to Indian market but also for their international operations. These sectors include Automotive (Tata Motors, Maruti, Mahindra and Mahindra, Ashok Leyland etc). These companies look for students, with deep core engineering / design skills, preferably with good exposure to CAD/CAE software, Though number of fresh engineers they hire may not be high, their hiring is not affected by economy slow down. Besides, graduating engineers find these job profiles to be more interesting and hence are preferring them, when compared to IT services companies.
- ii Education and training industry (including coaching for JEE) has been growing very fast. Coaching institutes used to go for campus placements at IITs, offering very high

salaries. However, they were banned from campus placements by IITs about 10 years back, though they continue hiring in “off campus” mode.

- iii A number of Public Sector Units (like BHEL, MECON, SAIL, Coal India, ONGC, Indian Oil Corporation etc) hire fresh graduates mostly through “off campus” mode and consider score in GATE examination for selection. However, total numbers hired every year may amount to a few thousands only.
- iv Every year, Union Public Service Commission (UPSC) recruits fresh engineering graduates for central government departments (like Railways, Telecom, Public Works , Postal and Telegraphs, defence/ordnance factories etc) through Indian Engineering Services examination. Posts/Roles are classified under group A and B under four categories (Mechanical, Civil, Electrical and Electronics & Telecommunications)
- v Banks (both Public Sector and Private Sector) recruit fresh engineers as specialists/ technical officers for project appraisals , though it is not in large numbers.

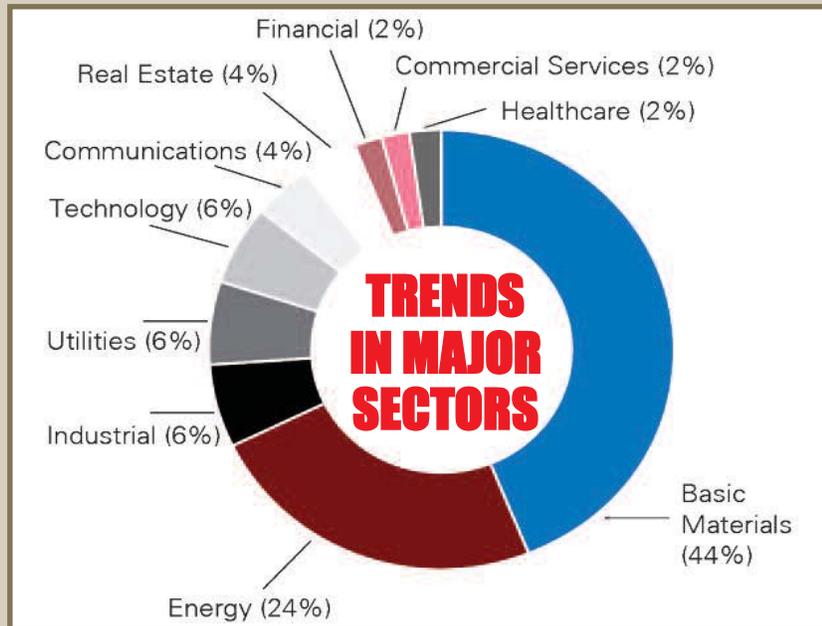
5. FUTURE OUTLOOK :

Hiring of Engineering graduates is linked to the requirement of additional manpower, which depends on the of growth of economy and performance of the major sectors and companies.

- a. Until 2007, hiring of fresh engineers was very buoyant,

particularly in IT industry. In the last 5-6 years, due to global financial crisis and problems in Europe, global economy slowed down, which affected Indian economy also. Practically every sector is has been facing slow down for the last 3 years. It is widely expected that the worst is over in 2013 and recovery is expected from 2014 and pace of recruitment is expected to improve significantly by 2016. However, campus recruitments by IT industry may never go back to 2006 levels . In the next few years, IT industry is expected to derive over a third of revenues from emerging areas like Cloud Computing, Mobile applications and Big Data Analytics and hence may need people with specialized skills in those areas.

- b. However, there will be a lot more opportunities in domestically focused sectors. With larger focus of government of India on manufacture of electronics industry , more particularly on semiconductors, there are likely to be more opportunities in this sector. Likewise, as more Indian automotive companies (like Tata Motors , Ashok Leyland and M&M) go global, there will be more potential for automotive design and manufacturing engineers. Likewise, government is also increasing its focus on more indigenisation of defence production through technology transfers from MNCs, there will be more demand in areas like defence technology. Large investments in infrastructure (like power, transportation, highways etc) will open up significant job opportunities in those sectors.



IT/ITES sector: This is the largest employer of fresh engineers for the last over 15 years, with the campus placements peaking at 4 Lakh students in 2006-07. However, due to slow down in global economy, during 2002-13, it came down by over 50% to about 1.8 Lakhs in 2012-13. Following are the trends observed in this sector:

- i Over 90% of the recruitment is contributed by top 10 companies, who empanel the colleges on the basis of specific criteria, before visiting for campus placement. Most of them consider only such of the students with consistently minimum 60% aggregate marks from class X onwards. Students from all branches are considered, though preference is given to CSE, IT and ECE students. Short listed students have to undergo written tests, followed by personal interviews.
- ii Though the above process is bound to be slow, some of the colleges were able to work closely with bulk recruiters and

scale up the recruitments in individual IT companies from a very small number to thousands, in a short span of 3-4 years. For example, during 2012, VIT and SRM were able to scale up campus placement to 1820 and 1214 by Cognizant and TCS, respectively.

iii Earlier the companies used to do recruitment 12-18 months ahead of their requirement and train the students, before putting them on the job. Now with the slowdown, most of the companies are resorting to just-in-time recruitment, wherein only the required number of students are recruited. Some of the companies cut short the training periods and some of them are resorting to on-the-job training. A number of large companies delayed joining dates for the students, selected in campus placements, with delays going beyond even a year, in some cases.

iv Over the last 5 years, large IT companies have been

spreading out the number of campuses visited for placements, going beyond tier-1 cities so that they can acquire better talent and attrition is reduced. During 2012, top 5 IT companies visited 100 to 400 campuses for placements, the largest being from Infosys and TCS.

v Some IT companies, in order to save manpower costs, started hiring non-engineering graduates (BCA, BA, BSc, BCom etc) for entry level jobs, as it was found that they can do an equally good job, after requisite training. Now, most of the large IT companies have about 10-15% of the technical work force from non-engineering streams and are increasing the proportion continuously.

vi As number of girls entering engineering education has gone up, some IT companies have started preferring girls, as they found girls to be more stable with better work ethics

vii With increased productivity in programming, due to the increased use of productivity tools, number of software personnel/programmers per additional \$1 billion of sales came down by 50% in the last 10 years. For instance, in 2003, 37,798 IT persons were hired for \$1 billion revenue, whereas in 2012, number of persons hired came down to 19,783. This will result in reduced hiring of graduates, despite faster revenue growth. Besides, there is bound to be more pressure on existing employees.

- c. As the economy recovers, there will be a ramp up of construction activity (both residential and non-residential) along with the increasing demand for aesthetics , which will drive demand for not only civil engineers but also architectural engineers.
- d. In order to curtail dependence on imports, government of India has been taking a lot of measures in stepping up exploration of oil and gas. Policy with regard to Shale oil and gas is expected to be announced shortly. These measures, coupled with advances in “Fracking Technology”, used to explore shale oil and gas may throw up career opportunities in exploration and production of oil and gas.
- e. A lot of opportunities are coming up in emerging cutting technology areas like Nano Technology, Geospatial engineering , Satellite Image processing , Remote Sensing , Aero-space & Astronautics , Renewable Energy , Green technologies , Robotics etc , as the technologies matured , creating more applications in our day-to-day life. Likewise, multi-disciplinary areas like Mechatronics (Mechanical+ Electronics), Auto electronics (Automobile Engg+ Electronics) , Bio-medical (Biology+ Medical) , Agricultural Engineering (agriculture+ engineering) have excellent potential ,in the years to come.
- f. Exponential growth of internet and mobile access is creating excellent opportunities for innovative services businesses , motivating fresh engineering graduates to become entrepreneurs and employers, rather than seekers of



employment.

6. WHAT CAN BE DONE TO TAP THESE OPPORTUNITIES?

a. By Engineering colleges : Colleges should increase industry-academic interface , wherein industry should be involved in all activities, starting from curriculum design to guest lectures, hands -on training , internships, projects etc. Engineering colleges must continuously watch industry trends and introduce courses in emerging areas as per the changing requirements of the industry. Wherever required , they should collaborate with the industry or other educational/training Institutions. Colleges should have a dedicated team to cultivate long term relationship with the industry, with specific focus on bulk recruiters. Colleges also should reduce heavy dependence on IT/ITES sector , which being export oriented , is more risk prone than domestically focused sectors.

b. By students: As the extent of campus placements may come down, students must take more responsibility for their own careers . They should develop more hands-on skills , particularly in emerging technology areas and acquire certification. They should also put in conscious efforts on personality development , inn soft skills like communication skills, team working, problem solving etc . It will also help the students to network themselves with industry professionals by attending seminars / conferences and contribution of articles / papers. Students can also register at job portals like Firstnaukri, Monster, Times Jobs etc. Ultimately, it is up to the individual student to engineer his/her own career and make it a success , by planning and acquiring the requisite knowledge and skills.

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