

Points to be discussed in 15th Symposium: "The Future of Engineering in Pakistan to be held on October 26, 2019 at Karachi

Significance of Industry:

- The engineering industry of a country plays a significant role in the development of the national economy by working as an engine of growth.
- The contribution of the engineering sector of Pakistan towards **GDP** is approximately **US\$10 billion**.
- This industry provides **employment** to three **million** people (directly and indirectly).
- The present share of the local engineering industry covers only **25%** of **total demand**, while the remaining 75% is being met through imports.
- The share of engineering goods in total **imports** has varied from 20% to **30%**; while the share in **exports** is 4.8%.
- It is the only sector that has the largest and strongest cross sectional linkages and can drive the industrial growth in the country.

Issues faced by Engineering Industry in Pakistan

- Lack of technological advancement and modernization
- Lack of competitiveness
- High cost of Input and low productivity
- Lack of Value addition
- Mostly Operates in unorganized sector like small workshop manufactures small items by using conventional methods and machines

Problems faced by New Engineers

- Every year around 18,000 students enrolled in Engineering and after completion of degree many of them are facing problems in getting Jobs.
- According to available information of Pakistan Engineering Council, Around 50,000 engineers are currently unemployed. The reason behind the rising of unemployment is lack of industrialization, declining of capacity utilization of different industrial units, mismatching of demand and supply of engineers etc.
- According to the Higher Education Commission (HEC), Pakistan produced around 700 to 800 PhDs in different fields in every year. Most of the PhDs prefer to work in academia as a result their academic research experience does not utilize in industry. That's why there is no expansion and is a lack of innovation, inventions and research & development in Pakistan. Industries still use obsolete and outdated technology.
- There is lack of industry academia linkages in Pakistan. The University Students does not aware about the requirement of industries and Industries do not have knowledge of the research of academia. As a result students are facing difficulties in getting employment after graduations. At present, there is no practical implication of academia research in industry.\

Way Forward:

- There is a dire need of industry-academia linkages in order to create harmonization of the requirement of industries and the curriculum of universities. Interaction of industry with the academia will lead to better understanding of research projects in process within universities and possible future collaborations.
- There should be exchanged programme in universities with other countries universities so that our engineering students may also learn about the technology of other countries.
- During the studies, the universities must arrange study visits of students to different industries so that the student get the first hand knowledge of industrial requirements and universities also pay special attention on the improvement of skills particularly communication, problem solving, time management, team work etc which generally observe by the companies during the hiring of employees.
- Graduate students of the universities are given access to industry as part of their internship programmes for practical hands on experience; it will build the capacity of students for the knowledge, skills and abilities needed in the market. There is a need of promotion of entrepreneurship so that the new graduate started their enterprises instead of finding a job.
- Most importantly, there is need of restructuring of curriculum of engineering universities, according to the requirement of industry so that the university graduate can easily absorb in industries.
- In order to market the research of academics, there is need of establishment of incubation centers in the universities.
- A part from academic education, the universities must also improve the skills of students by encouraging innovations and inventions related activities. A major part of an engineer's job is solving problems and developing new solutions and there will always be a demand to keep making things better, faster or stronger.
- CPEC is progressing in Pakistan which will increase the demand of engineers in different projects. In this context, we need to upgrade our engineering work force which can compete with the Chinese work force.