Abstract: India is one of the countries producing large number of scientists and engineers. Engineering education in India is about a century old. Many Indian Engineers are occupying high positions in the World. Moreover, there is not much interaction between Indian Industries and Indian universities due to so many reasons. In view of liberalization policies of the various nations, the engineering needs are no longer confined to a particular locality but should also cater to the needs of the entire World. This paper briefly reviews the present educational system in India and suggests suitable strategies for restructuring engineering education to suit the needs of the 21st century, taking into consideration local and global needs.

1. Technical education in India: India is a vast country with a population of 843.9 million (1991 census) with literacy rate of 52.11 percent. India is a nation having twenty five states and fifteen constitutionally recognized languages and different socio-economic structures, representing unity in diversity. Majority of the people live in rural areas (over 75% of population). Caste system which is hereditary, is a peculiarity of the Indian society. The upper caste and urban elite still dominate all fields, including education. In spite of all the efforts by the Government, the disparity among the castes could not be wiped out successfully. The education system including technical education was developed during the colonial rule and it was to cater the needs of the British rulers. It is yet to be geared to the needs of the present socio-economic technical needs. The needs of the Indian industry and society are so varied and diverse the engineering curriculum cannot be designed completely by engineering institutions to suit their demands. The first intake in the engineering colleges/schools in the country is directly due to train technical managers for the newly established engineering industries-training school at Poona started in 1865, survey school in Siripoor engineering college, Calcutta started in 1880 and Victoria jubilee institute Roorkee started in 1857. In 1947, there were only thirty eight institutions at the degree level and fifty three institutions at the diploma level with an annual intake of 2940 and 3670 students respectively. At present there are five hundred twelve engineering colleges and nine hundred thirty two polytechnics, turning out annually 70,915 graduates, 8000 post graduates and about 122,370 diploma holders. The Indian education is not terminal at any stage and Indians are often interested in reaching up to the dead end, than confining to a need based education.

2. Present Status: The major crisis in professional education in India is the poor quality on face of the best student input, and relatively high cost. The curriculum designer, teacher, administrator, student and industrialist point their fingers against each other.
Emphasis is given on modernization of technology and not on the modernization of organization and transfer of knowledge. In engineering education, the demands from the industry is diverse. The small industries want immediately employable engineers which means least or no training. The large scale industries stress for an engineer with strong base in science, analysis, design and creative thinking. The requirements of Government departments are hardly spelt out. The All India Council of Technical Education (AICTE) regulates, controls and governs all the activities of technical educational institutions of all categories, Government, University and private. The curriculum suggested by AICTE for undergraduate (bachelor degree) is as follows: Languages, humanities and basic sciences 5 to 10 %; General basic sciences 15 to 25%; Engineering subjects and technical arts 15 to 25%; Professional subjects 45 to 65%; Many of the engineering institutions compare their curriculum with institutions of advanced countries. Hence the best students feel their education and training are more useful in advanced countries but not relevant to the Indian job requirements. Despite of stressing the need of University-Industry interaction, academicians, administrators and industrialists are still moving on parallel lines. Engineering consists of basis sciences, analysis, design, construction, operation and maintenance. The first three are taught by institutions alone and participation of industries is very much essential. Management subjects will have to be given a good importance in the curriculum as the engineer has to manage more in face of global competition.

3. Suggestions for Improvement:
I. Watch the technology development and identify trends earlier to minimize the lead time for the responding system of the changing curriculum.
II. Project possible connections between presently distant technologies and identify the need of the emergence of new fields.
III. Associate professional bodies like Institution of Engineers (India) and Indian Society for Technical Education should participate in the technical education planning.
IV. Start science and technology entrepreneur park (STEP) for effective interaction between educational institutes and industry. For example: Birla Institute of technology, India.
V. Encourage industry to share cost of engineering education as educational access to provide funds for R&D, industrial training, consultancy etc., as at present the industry is getting a ready made engineer, for which its contribution is almost zero.
VI. Involve industry to play positive role in designing curriculum, to avoid criticism and encourage industries to spell out their requirements both in quality and quantity.

Conclusions: The academicians alone cannot develop comprehensive technical educational programmed, reflecting the fast growing and changing needs of industry. Academicians, industrialist and administrators should work out for a viable system of technical education.