

EFFECTIVE I I I ONLY THROUGH A TECHNICAL UNIVERSITY SPONSORED BY INDUSTRY

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SYNOPSIS

We have been talking of the necessity of interaction between Institution and Industry for the last more than one decade, and still little has been achieved in this direction. The world has been moving so fast that today not merely interaction, but meaningful and effective partnership is the need of the hour. Economic reforms, globalisation and World market to which our industry stands exposed today compell us - the Industry and the Institutions - to move closer and enter into a partnership so that we can face the fierce competition in the world market and survive. If this partnership is not forged, foreign companies will take over our economy and thereby control our politics, as well. Hence Industry Institution Partnership is advocated.

It is suggested that the only effective and meaningful way for Industry is to establish a private technical University and all Engineering colleges should get affiliated to it. This will ensure a perfect partnership between Industry and Institutions and this will make a substantial contribution to the performance of the Industry even in the global market, as well.

1. INTRODUCTION :

Human resource is a vital input to the industry. Technical institutions - I.I.T.& , R.E.C.S and state engineering colleges and Polytechnics - train this human resource and supply much needed technical manpower to the industry. The success of these institutions depends on how useful is their product to the user industry and the extent to which industry can serve the Nation and the people, which depends on the efficiency and competence of the product they get from the technical in-

stitutions. The fact that many industrial houses like Telco and Bajaj, have their implant training schemes for their fresh recruits on an extensive scale, indicates that the product they get from technical institutions is wanting in something and the aim of the technical institutions should be to supply a product such that any further implant training in the industry is minimised if not altogether eliminated. To minimise this, there has to be closer liaison between the industry and institutions, where matters regarding what is required by the industry can be spelled out so that

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institutions can plan and implement academic programmes to meet the maximum requirements of industry. This is possible only with close interaction between industry and institution. Any mismatch between the two, will result in a huge loss of time and energy put in the engineering education system, large scale unemployment or under-employment of our technicians and graduates and industry failing to cope with and face the global competition it has been called upon to face today.

2. STRATEGY FOR I. I. PARTNERSHIP :

We have talked enough on the measures necessary for interaction between institutions and industry. Several reports have come out on the collaboration between the industry and institution. Some of the measures required to bring institutions and industry together are given below :

- (1) Technology watching and manpower forecasting.
- (2) Sandwich pattern of technical education.
- (3) Exchange of faculty and industrial experts for mutual benefit.
- (4) Testing and consultancy services by technical institutions.
- (5) Adoption of institutions by industry.
- (6) Continuing education of industry personnel.
- (7) Making academic programmes relevant and responsive.
- (8) Matching the demands of technical manpower of industry with supply from insti-

tutes in terms of numbers, quality and necessary skills and desired attitudes to the fast changing needs of the industry.

3. FLEXIBILITY OF APPROACH :

All these measures have been suggested several times on various platforms, seminars, symposia, workshop and conferences, but the distance between institutions and industry could be reduced, if at all, only marginally. The main reason for this, is, the rigidity in the educational system. The institutions are governed academically by the State Governments and the Universities, there is no mechanism to watch and ascertain the changing demands of manpower required by the industry. Even to make a small change in syllabi, it takes more than a year to go through the process of Boards of studies, faculty and the Academic Councils of the University; introducing new courses is almost out of question. What we require is autonomous institutions which can and are willing to run- need based courses on requisition. We have had enough of colleges, some of which may be centres of excellence, but these run stereo-typed, regulated, Diploma, B.E. and M. E. Courses. New institutions must emerge which can cater to the changing demands of the industry. Industry can pay for this. Funds will not be a problem. Educational and training services is the need of the hour. While the present institutions can play their role to a great extent in I.I.I. provided they are properly oriented, there is much scope for new types of institutions which are autonomous that can run need based courses from time

to time, besides their normal academic programmes.

(4) ENGINEERING COLLEGES, TODAY :

Our institutions and even the Engineering education system have become stagnant, lifeless, running routine courses in a routine way. 75% of our institutions are under private managements who are rarely inspired by any educational ideals. Quality of education is not their concern. That academic programmes have to be relevant and responsive to the changing needs of the industry, least bothers the managements. All they are anxious about is that their admissions are full, the results of the college should not be bad; income from fees should be substantial (Thanks to the recent fee structure introduced under directives of the Supreme Courts.) The expenditure is reduced to the minimum so as not to incur adverse remarks from the university affiliation committee. For quality, standards and excellence they have mere lip sympathy. As such, there is no hope that such colleges will ever acquire the strength and competence to venture into autonomy. If so, where is the mechanism which will induct quality and excellence in these Institutions. We have to devise such a mechanism which will induct quality and excellence, watch and monitor their progress, give them continuous feedback so that they always follow the correct path leading to quality and excellence along with other Institutions. The statutory universities today to which engineering colleges are also affiliated along with a large number of Arts, Science, Commerce, Medical and other colleges have

proved to be incapable of providing any guidance and leadership to engineering colleges, which they need so badly.

5. CONCEPT OF AN IDEAL ENGINEERING COLLEGE :

These institutions must have the following features.

- (1) A "mission" statement of the college which must include pursuit of quality and excellence in education as the main objective.
- (2) A perspective plan for 5 to 10 years along with yearly plans for the alround development of the institution.
- (3) A performance Appraisal and Development System.
- (4) Induction of quality circle approach.
- (5) Networking with other institutions at different levels with an inbuilt feedback system.
- (6) Testing, consultation services for industry.
- (7) R and D Cell.
- (8) Curriculum development and review.
- (9) Community Services.
- (10) I.I.I. Cell.
- (11) Yearly review of the performance and resetting and reviewing of the immediate and distant goals.
- (12) To seek accreditation from AICTE and certification of ISO 9001....etc.

How many colleges care for this ? Does the University to which these colleges are affiliated contribute anything in this direction ?

6. RECENT TRENDS IN I.I. PARTNERSHIP :

The recent economic reforms have compelled industry to change its attitude to I.I.I., sought after, so far, by institutions. A significant development in this respect is the MOU arrived at, between the Government of Maharashtra and the C.I.I. (W.R.). Similar steps have been taken in many other states. There is a need for some mechanism/organisation which should work for creating awareness of the need of I.I. and take steps to bring together industry and institutions. Industry and institution interaction club could be an answer for this. Such an interaction will benefit all - students and faculty on one hand and the industrial personnel on the other. These benefits could be :-

7.1. BENEFITS TO STUDENTS : The interaction will help the students :

- 1) To visualise the size and scale of operation in an industry, understand the complexities and interdisciplinary nature of the problems.
- 2) To perceive the most important aspects of dealing with people and communication, motivation, morale and organisation culture existing in industries.
- 3) To get the opportunity to observe people on the work bench, their work habits and factory discipline.

7.2. BENEFITS TO TEACHERS :

The interaction will help the teachers :

- (1) To be familiar with materials and processes used and products

manufactured in concerned industries for which the students are being trained.

- (2) To get exposed to the operation of specialised plant and equipment which educational institutions may not have.
- (3) To orient themselves with the new and emerging areas of technology in industries.
- (4) To relate theory to practical, which is necessary for effective engineering education.
- (5) To be aware of the job responsibilities of technicians and engineers in industry.

7.3. BENEFITS TO THE PERSONNEL IN THE INDUSTRY :

The interaction will help the technical personnel in the industry :

- (1) To acquire higher education in their field of work.
- (2) To know the advanced techniques to be applied or understanding the imported technology.
- (3) To know the ways and means of developing indigenous technology.
- (4) Benefit from innovative Research and Development work carried out jointly with the academic staff.

8. OTHER SUGGESTIONS FOR I.I. PARTNERSHIP :

8.1. I.I. Club :

This should be a common platform for industry and institution personnel to meet regularly, where industry and institutions can exchange thoughts, ideas and experience and plan strategy to assist each other. This club should function at different levels- district

level, regional level and state level, then, at the national level. This club should take out a monthly news letter which should be circulated to all institutions and industries. Industry can present their problems to all the institutions and likewise institution should project their areas of expertise particularly in R and D. This will facilitates an industry to find out which of the institutions are capable of helping them in providing solutions to their problems. Thus the III Club can go a long way in bringing about close interaction between Industry and Institution and thus pave the way for collaboration which is the need of the day. Besides this, such a club can help in bringing the I & I together for other measures mentioned below :

- (1) To bring Industry and Institutions together, on regular basis for exchange of ideas/experiences.
- (2) To arrange continuing education programme for industry personnel in institutions.
- (3) To arrange industrial training for students and staff in industry.
- (4) To arrange exchange of personnel between industry and institutions.
- (5) To arrange for industry-oriented projects, based on the current needs of the industry for final year students of Degree and Diploma.
- (6) To arrange R and D activity with funds from industry and expertise from the institutions.
- (7) To arrange for greater participation of industry in management of individual engineering institutions.

Such clubs should be established jointly by the industry and institutions

and work independently and exclusively for III. This is the need of the day and the call of the hour specially as we have gone in a big way for globalisation, liberalisation and privatisation exposing our industry to the fierce competitive economy. Our future, nay our survival, depends on the quality, efficiency and effectiveness of industry which in turn depends on quality and excellence of our educational institutions and their interaction with industry.

8.2. LINKING OF TECHNICAL EDUCATION DEPARTMENT TO THE MINISTRY OF INDUSTRY :

Engineering education is mainly to supply the technical manpower needed by the industry. The needs of the industry can be better comprehended by the Ministry of Industry rather than by the Ministry of Education. Once the demands are worked out, the Industry Ministry will be a better position to re-organise the Engineering Education System so as to meet the required manpower in respect of the skills, attitudes and knowledge and professional expertises. It will also induct necessary flexibility in the system to meet the changing needs due to fast changing technologies. Hence, the necessity of attaching Department of Technical Education to the Ministry of Industry.

9. EFFECTIVE III ONLY THROUGH A TECHNICAL UNIVERSITY ESTABLISHED BY INDUSTRY :

The Institutions as well as the Industry are fully aware of the need of the III, benefits to the students, the

Institutes and the Industry. They know the measures to be taken for such interaction but during the last 10 years or so we find that neither the Institutes nor the Industry have taken any effective steps with any seriousness or earnestness, except a few individual efforts, here and there. The problem eludes us all these years. The traditional approaches do not solve the problem, hence we have to think of some new and innovative solution.

During the last few years, as we have entered the era of open economy, globalisation and privatisation, things are moving fast and many new ideas, suggestions and proposals are being thrown up by activists & intellectuals. It may probably be worthwhile to consider whether some of these can help us in tackling this problem of III.

Principal B. M. Naik of SGGS college of Engg. & Tech. Nanded has suggested that for attaining III. The technical education Dept. be delinked from Education department and attached to Industry Dept. Principal N.V.Ratnalikar has suggested that a private technical unaided University be established to provide networking of all the Engineering colleges, so as to tackle all the problems of Engineering Education including III, effectively.

It will be interesting to note that the Central Govt. has cleared a proposal to set up a University in the private sector. The Government, is introducing a bill in parliament defining legal framework and guide lines within which such a university should function, as this university will not be funded by the Govt. at all and has to be fully funded by the sponsoring organisation. Non-resident Indian

Association of Chicago have come forward with a proposal to set up Rajeev Gandhi National University of Computer Services and is to be located at Hyderabad. The estimated expenditure involved in setting up this university is about Rs. 32 crores. The NRI Association would provide Rs. 5 crores as seed money and Rs. 10 crores as working capital to meet the recurring & non recurring expenditure till such time as the university becomes self sufficient. So it will not be difficult to set up such a unaided private technical university. For this task, the association of Industries and the National Association of private unaided Engineering colleges can also join hands. To be more specific, we can think of CII and the National Association of private unaided Engg. colleges joining together for such a venture. The leadership and onus for such a venture, can be left to CII which has come up as the most powerful and leading organisation of the Indian industries which is observing its centenary celebration this year on such a grand scale seeking partnership with various bodies-national and international; so, for it, to seek partnership with Institutions by setting up a technical university should not be difficult. Also funding such a university will not be a problem.

10. WHY ONLY CII ?

There are other organisation who can set up and fund such a university, but the significance of CII is that a university set up by it would amount to a meaningful extent, adoption of institutions by industry, and would go a long way in establishing the industry institution interaction in an effective

and meaningful way which is an urgent need of the day both for the engg. education system which is groping in the dark in its search of standard, quality and excellence and the industry which stands exposed to severe global competition due to our policy of open market, globalisation and privatisation.

A Technical university established by an Industry, say by CII can take care not only of III, but also help in introducing other measures for quality and excellence in the Institutions as well as the Engineering education system as given below, as it can provide :

- (1) Network of all institutions, both horizontal as well as vertical.
- (2) Various activities that are required for standards, quality and excellence as mentioned in para (5) can be started, watched, monitored and feed back can be given for further improvement.
- (3) CII can induct industry personnel in adequate numbers in policy making and implementation committees at every level so that there is perfect harmony between the industry and Institution to achieve required and desirable qualities, competencies, skills and attitudes with required professional expertise.
- (4) Technology watch development and transfer can be arranged.
- (5) Academic programmes can be made flexible, responsive and relevant to the changing needs of the industry.
- (6) Arrangements can be made for imparting professional training of Technical Teachers.
- (7) Production centres can be established to raise funds for the University and make it self sufficient in due course.
- (8) R and D activities can be co-ordinated, stream lined and liaison can be established with national and Industrial R and D Labs.
- (9) Entrapreneurship cells, technology parks can be established.
- (10) Continuing education programmes can be arranged as and when needed by industry.
- (11) Extension/community services can be arranged.

11. CONCLUSION

In short the industry and institutions can be brought face to face so that there is perfect understanding of the complementary roles and functions of each so that both can work in perfect harmony so that they can serve the country and the people in better manner, particularly in the new environment of open markets globalisation and privatisation.

It will be interesting to refer here to the recommendation made by the ISTE section of the Karnataka State on 1/3/94 which have been made on the basis of a brain storming workshop wherein 20 industrial representatives and 30 Institutions participated. At the end of these recommendations, the committee has made a 12 point action plan for II partnership to be acted upon by various agencies - DTEs the Institutions the CII, the AICTE etc. etc. but the question remains who will bring together all these on a platform, make them talk, act and work in co-ordination on a continuous basis? The answer to this is, a technical university established by the leading organisation of the

Industry-the CII to which all Engineering Colleges are affiliated. The university will be a mechanism to ensure a continuous dialogue, deliberations, discussions and draw conclusions so as to ensure perfect matching between the supply of Engineering personnel and the fast changing needs of Industry. Since the two parties are always sitting together; all that is needed from each other-all the 12 points action plan recommended by the Karnataka ISTE section-will be taken care of and we shall have found a permanent and practical solution to the problem of III which has been bothering us for the last decade or two. So our efforts will have to be concentrated on establishment of a Technical University either solely by CII itself or preferably jointly with the Association of Un-aided Engineering Colleges of the State. This would be a pace-setter for lasting benefit to Engineering Education for another century.

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