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# Industry – Institute Interaction In Modern Area

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## 1. Introduction

Industry Institute interaction can be defined as a systematic way to identify the common areas of interest of industries and institutes and work together for mutual benefit.

To survive in the competitive market, production of ‘quality product’ is very essential. Industries have accepted the fact but the technical institutes have not yet realized this.

For the technical institutes, the final product is engineers/technocrats either for employment or for self-employment, whose skills and attitudes meet international standard in relevant technologies established by the industry, which will contribute to the society actively. In a broad sense, industries are the main customers for their product. To survive in this competitive age, it is

necessary for the technical institute to maintain quality of their product, by improving quality of education.

At the same time industry is also facing major crisis. Till around 1995, the industry was willing to spend time and money to train the fresh engineers to make them suitable for the job. However with changing economic policies, globalization and liberalization at world level, industries came under heavy pressure. Thus, now they have started putting pressure on the institutes to run job oriented, skills based, and competency based, and competency based programs.

Thus the institutes should identify the industries (customers) needs. Incorporate the required changes in the curriculum and in the system and it should be continuous process. To identify the needs of

industries, industry institute interaction is a must.

## 2. SCENARIO IN INDIA

In India the customer i.e. industry is not satisfied with the product i.e. Technical Manpower which is supplied by institutes. Figure (1) shows the present system. Foreign collaborators so far largely propel Indian Industry. We are constantly buying technology and they are selling. Rules existed for import but not for technology transfer from institutes within the country to industry. Higher education institutes have not gone nearer to industry to provide the type of manpower or technology they need. Universities have been offering standard courses, ignoring the specialized needs of industry. The higher education policy and policy for industrial development are framed “stand alone” as if one has nothing to do with other. They lack a mechanism to make them mutually supportive. As a result what is wanted is not taught and what is taught is not wanted. There is mismatch between the two. While there is unemployment on one hand, there is shortage of specialized manpower on the other.

## 3. FOREIGN STATUS

Germany was the first country in the world to move towards capitalization of knowledge and accordingly it developed well-adapted education institutes and research establishments. The Technical Universities came in sixties. These have attracted investment and have contributed greatly to raise industrial performance. They give “Technology Push” which enabled industry to encash opportunities in world market arising out of new technologies.

European union under the leadership of M/S Edith Cresson has launched the program of innovation and technology transfer. Technology relay centers hundreds of them have been designed and installed all over Europe to diffuse technology.

Business circles of USA admitted long before that industrial training was best carried out in American colleges and Universities. Universities became annexes of the industrial research laboratory. Companies quickly grasped that not all research could be done in industry. Institutes possessed special expertise and equipment that could also be harnessed to entrepreneurial innovation.

There was a long debate in USA and Europe whether Universities should restrict their research to industry or it should be liberal. Academics of MIT, Boston and other Universities ultimately decided in favour of industry orientation, and this is the main reason that they are ahead of the world.

Science parks, incubators and innovation centers are very popular and successful schemes jointly implemented by industry-institute and Government in USA.

However, not satisfied by higher education some companies like MOTOROLA and IBM have setup their own corporate Universities, to educate their own employees.

U.K. has a unique scheme known as Teaching Company Scheme (TCS). There is a special Directorate established by Government to implement the scheme. Under the scheme a scholar does innovation under joint supervision of an expert from industry and another guide from institute. He is paid scholarship by industry and Government pays for equipment etc.

Countries like Japan and Canada have taken out massive scale schemes to capitalize new knowledge suitable to their local conditions.

#### **4. AREAS OF INDUSTRY – INSTITUTE COLLABORATION**

For Knowledge-based economy to grow, the institutions of higher education, industrial community and the government should form a trinity of the interaction module, which in any country takes up the leading role in the technological and economic growth of that particular country.

Dr. D. Swaminathan, Member, Planning Commission, Government of India had proposed a model of industry-institute interaction. The ultimate aim of such a symbolic relationship will be the creation of confidence in industry by institutions, resulting in the industry voluntarily involving the institutes, right from the feasibility of project appraisal stage itself. The development of such relationship requires firstly, careful understanding of the industrial needs such as relevance, cost effectiveness, time bound programs and technology up gradation. Following area of interaction is required to be undertaken seriously:-

1. Curriculum development
2. Participation in selection
3. Transfer of knowledge
4. Constancy scheme/project assignment
5. Technology transfer
6. Industry visit
7. Training of teachers and students in-plant.
8. Exchange of faculty.
9. R & D facilitates.
10. Testing and inspection
11. Participation I evaluation
12. Continuing education
13. Institutional evaluation
14. Adopting of institution/program
15. Collaborative education programs.

The main objectives of these activities are to adequately improve the quality of Technology Education to meet the needs of the industry and economy. To enlist participation of industry in Technical Education Programs with a view to gain the advantage of cross participation of ideas for system improvement. Figure (2) represents the envisaged institute-Industry Linkage.

The institute-industry tie up is beneficial not only for the education center i.e. institutes and the work center i.e. industries but also for the student and worker i.e. the individual.

## 5. BENEFITS OF INSTITUTE INDUSTRY INTERACTION

S. No.	Benefits for Institute	Benefits for Industry	Benefits for Students
01	Acquisition or access to latest technology	Reduction in recruiting cost.	Gaining real life experience.
02	Opportunity to attract additional funds for teaching and research through R&D, consultancy, testing and inspection.	A highly dedicated think-tank available.	Application of theoretical knowledge.
03	Development and adaptation of need based curriculum	A chance to preview student	Contact with practicing professionals
04	Improved employment prospects for students.	Cost effective productivity.	Decision making on

			career choice.
05	Socially relevant and progressive education.	Collaborative research opportunities.	Gaining access to sophisticated instruments.
06	Enhancement of the institutes image as a contributor to the economy.	Better communication with higher learning centers.	Understanding the work culture of the industry.
07	Provide industrial training to students & Staff.	Testing & Inspection facilities.	Paid pre-employment (on-study training)

## 6. IMPLEMENTATION IN INDIA

India, the seventh largest and the second most populous country in the world, has also taken up the advantage of this concept of industry institute interaction and brought out the economic reforms, aiming at stimulating growth of knowledge-based economy and enhancing the foreign direct investment. This has moved India firmly into the front ranks of rapidly growing country in the Asia Pacific region.

Realizing the need and importance, Maharashtra Government has created in 1998, a new Directorate of Industry Institute partnership. It has appointed a Director supported by suitable staff. The directorate is very much in infant stage. It is hoped that it will help in implementing the UNISPAR (University-Industry science partnership) program in Maharashtra. Besides UNIPAR, there are some schemes like incubator, Technology Park, Innovation Center, Technology Relay Centers, Patent and Licensing of Technology, which have proven worth elsewhere in the world. Improvement in higher education to build human capital can come only through synergetic efforts; if they do not do this or even delays, foreign Universities, in near future, are likely to capture Indian Education market. The Punjab Government has also established the Punjab Technical University (PTU) and Punjab Technical Board. All the engineering and MBA Institutes comes under

PTU and all diploma level courses are run by Punjab Technical Board. These two organizations and the Industries in Punjab are trying to work on the same track.

The Indian Society for Technical Education (ISTE) is the only national organization of educators in the field of engineering & technology, registered under the societies registration act of 1860. The major activates of ISTE are as follows: (1) To adjust curriculum and educational processes to changing conditions. (2) To bring about effective linkage between technical institutions, industries and society. (3) Summer/Winter schools for engineering teachers and practicing engineers and thus providing a common platform to the engineers from institutes and industries. (4) Seminars/workshops/conferences on latest topics of relevance to technical education (5) Special short-term industrial exposure programmes for teachers organized by industries in their premises. In brief the major objective of the ISTE is to assist and contribute in the production and development of top quality professional engineers and technicians needed by the industries.

## 7. CONCLUSION

It is firmly believed that next millennium is the millennium of knowledge.

For the knowledge-based economy to grow, the institutes, industries and the Government should form a trinity of the interaction module which in any country takes up the leading role in the technological and economic growth of that particular country.

The technical institutes should be dynamic and flexible. It should change as per the need of the market. Quality education should be the main objective of an institute. As per the changing environment of the industries, the institutes should adjust the curriculum and educational processes and thereby improve the knowledge and skills of the students to make them suitable for placement and it should be a continuous process.

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