Present Scenario of Universities– Industries Interface: A Theoretical Perspective

1Mr.K. Vivekanandan, 2Ms. R. Jayadurga, 3Jeni Rani Mary,
1, 2, 3Research Scholar, Department of Lifelong Learning, Bharathidasan University, Khajamalai Campus, Tiruchirappalli-620023,
1rkvivekanandan@gmail.com, 2shrigooodday@gmail.com, 3jjenyjasmine@gmail.com

Abstract- Universities and industries have been in close touch and working in tandem with one another for over a century, towards some common goal. World class research universities have been the pioneers in giving a lead in this field. The present rise in global knowledge economy has further intensified the need for their mutual understanding and working. This interface of industry and university will help to transform the role of Research University and help to foster economic growth. This interactive nature of work can bring about research outcome synergy. Acknowledging and ensuring mutual respect for each other’s roles as a system calls for active participation of all the stakeholders. This chapter studies the various issues associated with universities and industries which have a bearing on the other. This chapter also tries to give a near clear scenario picture of the current university industry interface in general.

I. INTRODUCTION

University-industry interface have different objectives and scope they may be less intense are may focuses on training, recruiting and research activities. This interface is important for development of skill, education and training and innovation and technology transfer. The benefits of these activities can be of far-reaching effect. For example, it can increase the propensity of firms to introduce new products. Short term tie-up may consist of on-demand problem solving with pre defined goals. Long term collaborations are associated with joint projects and public private partnership like joint university-industry research centers and research consortia. This allows firms to contract for a core set of services and to periodically re-contract for specific deliverables a flexible manner. This long term tie-up is more strategic and can provide a multi-faceted platform where firms can develop stronger innovative capabilities and research methods and tools of universities. When companies and universities work together to push the frontiers of knowledge they become a powerful machinery for innovation and economic growth. The benefits of this joint working have been obvious not only for this educational institution but also for the industry concerned. These working are built around a shared research vision that may continue for a decade or beyond. This helps to establish deep professional ties and trust between one another and bridge the cultural divide between university and industry. Universities can be benefited from modernized teaching and learning and their by paving the way for exchange of ideas, skills and competencies needed for market and industries. Above all these long term tie-up or interface between universities and industries can build the vital human capital needed to make both prosper.

Tie-up in Continuing Education: Continuing education programme are offered by universities which as specifically designed for participants from the industry. Many institutes that are engaged in education at high end have the ability to provide training for man power development and also posses the course where for it. Many of these topics are of interest to the industry which makes it possible for a natural tie-up to provide training in the topic of interest for the industry. In India the need for programmes for working professional is increasing in the recent times. But for the programme in areas of technology has not shown any serious development and this is a potential area, were both size can tie-up and benefit.

Integrated Model of Universities-Industries Interface: There has been so far no established model of industries interface. Due to fact that there is continuous change in the education and in industrial domain. There is a huge gap between the valuing skill need of Indian business and the provided by our educational system. Nevertheless there is a growing awareness amongst the government, universities and the industries of the urgent need to bridge this skill gape. Many researchers have in done on this topic and suggestions for sustainable integration of the industries and its stakeholders with the universities, have in made. It has also been suggested that industries should come for word to work in tandem with the universities providing support and scholarships to students. This alignment will enrich both the academia and the industry.

Industries and Universities Tie-up: Industries and universities are finding it increasingly difficult to tie-up though it’s mutually beneficial to them. The reason being, private firms adopting open
innovation strategies to gain better access and integrate external sources of knowledge. This leads them to have a stronger interest in collaboration the universities. Since the 1990’s, the strategic mission of universities as also mode beyond the traditional of teaching and research. This new vision focuses on a better addressing to the needs of the industry and directly contributing to economic growth and development.  

Benefits: The scope of universities- industries tie-up differ significantly between developed and developing countries. Some major barriers faced by developing countries are given here under. University- industries tie-up is constrained in developing countries by historically based cultural and institutional barriers. This takes a lot of time to overcome. The existing tie-up scene to me more informal and focusing on recruitment drive of university graduate for internship and consulting. Moreover the research activities or universities are less likely to be commercially exploited. In addition to this, poor quality of education, lack of financing for universities and capability to join industry in innovation-related projects or the major hurdles. Universities in developing countries have very little experience in industry tie-up and have a limited managerial capacity in research. As a result of this, building effective university- linkages in this context takes time and continuous effort.  

Motivation: Motivation of all stakeholders is of utmost important for a successful industries-universities tie-up. Such motivations for universities include improvement of teaching, access to funding and enhancement of reputation. For industries this can be in the form of access to empirical data. Again for industries motivation can be in the form of gaining access to complimentary technological knowledge, creating a pool of skilled workers, tapping there capabilities, provide training to existing and future employees, gaining access to the universities facilities and equipment and access to public funding and incentive. Industry may also seek to reduce risks by sharing the cost of research and development to influence the overall teaching and research agenda universities.  

Policies to Promote Universities-Industries Interface: Public policy will provide the required infrastructure and intermediate organization such as, technology transfer officers, science parks and business incubators. This can also influence the propensity of industries to collaborate universities. This can be in different ways such as direct role in providing funds to universities and research and development projects, as well as through a regulatory role. Government can also promote tie-ups by providing specific support services, to industries and universities in search for partners and conducting activities that would raise the awareness and important of such tie-ups.  

Resources and Potentially of Stake Holders: Academia is a collective term for a community of students, faculty, and scholar engaged in higher education on development research. It’s the body of knowledge that transmits knowledge across generation. Universities which are part of the academia possesses the research ability, motivation and the experience that is necessary to deliver the essence of education through courses and workshops to all sections of the population. So university has the responsibility of dissemination of knowledge through teaching a one hand and invention of knowledge by research, on the other hand. It has the responsibility of bringing culturally and ethnically divorce people together. It’s has the capability to explore new concepts. Since, students have always a thrust for learning and gaining experience. It has also the responsibility to upgrade the society through interaction with its divorce community.  

Industry refers to any type of economic activity producing goods or services. Industries or inter connected with the economies of the country were the exists and also with the economies of the country they trade with. Industry is the engine that generates the tax base for government revenues and strengthens the economy of the country and its population. Industry provides the basis for opportunities for application of university born technology that can be the prime focus of university- industry interface. Large scale industry generally depends on bought out technologies from foreign countries. In contracts medium and small scale industries don not have the required resource to explore concepts. In such cases academic interventions may be of help in innovation, motivation and technology absorption and implementation.  

The Indian Scenario: Government policies launched in 1991 are in a sense driving universities towards industries and vice-versa. As a result the issues relating to industries- universities interface are rapidly moving towards making policies in technological friend and planning and managing them. There has also being a drastic change in the economic environment confronted by industries and universities. State supports is increasingly being withdrawn particularly in social sector activities including higher education in research as a result of this the academic system. Has to depend on the industrial sector and the production sector not the economy for financing it’s research and teaching activities. On the other side the industrial sector is increasingly realizing that it’s not possible to compete even in the home market using the technology purchase from TNC’s. This is forcing
the industrial sector to look to the universities departments for new sources of knowledge.

II. CHALLENGES IN UNIVERSITIES- INDUSTRIES INTERFACE

This article tries to discuss various types of interfaces that are possible in Indian scenario. Though this aspect has always been a topic of devote, still no clear model exist that can be widely used. The common interface model between universities-industries is that of a producer consumer relation. This has existed for quite long between these two sides. The consumer has to be ensured that the output of the producer satisfied his needs. Applying the Some principal to universities-industries interface the industry has to provide proper inputs to the educational institutions regarding their perception of their products. Interestingly even this kind of interface does occur in a structured manner, since both the sides maintain a distant relationship there are many reason for this. To give an example, the universities may not take kindly to the suggestion of the industry. The main reason for this is a lack of flat form to facilitate this. In our country currently there is an acute shortage of highly trained man power and so here is a possible area of collaboration. The engineering education system, presently is also not in the best of ITEs its shape and so will required a lot of improvement. Traditionally the government was responsible for higher education and so the problem solving machinery was not effective and fast. For this reason an interface between industries-universities become necessary. This seen to be a very viable are, were join programmes can succeed. Though both size can sustainly gain from this, not much scenes to be come in this friend. Any have some industries and institutions have started taking in initiatives of their own in this field.

Barriers

Despite the growing strength of the motivation mentioned about, many barriers do exist to universities-industries tie-up they are us follows.

- There is an excessive focus on fast commercial results in industry and on basic research in universities. This results in an inherent mismatch between the research orientation of firms and universities.
- Firms are usually interested in getting new patterns are introducing new products with an on outputs and relative profits. So they in telge in delaying publication to avoid disclosing information. On the other hand researchers in universities department or basically motivated in getting published their research results as fast as possible Industries are concerned about secrecy and miss alignment of expectation with regard to intellectual property rights and making a profit from them. So there arises a need for agreements to be established in a commercially timely manner to enhance the ability to commercialize with appropriate returns.
- Difficulties in bringing about a tie-up between universities-industries include lack of information, difficulties in finding contact person and the cost involved in it.

III. SUGGESTIONS FOR SUCCESS OF INDUSTRIES- UNIVERSITIES INTERFACE

- Pooling of resources of academic institutions with a “chair” can be created. This chair will get financial assistance from different companies on organisation s in that respect.
- Tax exceptions for expenditure on RD were industry and university work together should be given. Similarly service tax for any royalty coming out of technology transferred by an academic research institution to an industry could be exempted.
- The recurring demand of qualified skilled man power catering to the requirement of industries could be met through establishment of centers for excellence in specified areas of the universities. These centers should have direct relevance to the industries who are the major stake holders.
- The industry and government should bear the cost of infrastructure and other expenses like payment of staff, maintenance of the instruments and Expenses for running the center.
- Students should be made more exposed to industrial practices through internships. These internships can be made mandatory and meaningful. A proper feedback mechanism should be put in place, so that the students and the industry are benefited in the long run. This world helps the industries to plan and structure the internship programme.
- Exposing students to the world of work helps them to understand the reality of different kinds of work and sensitize them to the conditions of a universe of persons outside their own. These works can range from manual labour to intellectual tasks. This learning will enable them to be prepared for their own entry in to the world of employment or academic research. This will also strengthen their understanding of their basic concept that they should know.

IJSRC SAMS

Volume 7, Issue 5 (September 2018)
Diffusion of knowledge can be done by students having expertise on different aspects of study. They can conduct workshops for the benefit of other students of the respect institutions.

The participations of alumni with industrial background can work as a mentor for students in universities and educational institutions. They can help by way of delivering lecture in the respective fields were they have guide knowledge.

A fund can also be created to support the entrepreneur skills among interested students with relevant feedback mechanisms.

Drawing highly efficient and talented personalities from outside the university system, should be encouraged to be participating in teaching and research ventures in universities. Offering extra incentives to promote industrial cooperations, providing tax exceptions an earrings for industry sponsored projects and permitting such personalities to work has a part timer can also be of great value. These will ensure a right admixture of theory and practice to increase industrial output.

IV. CONCLUSION

Now there is awareness among public in general and the students in particular that industries-universities interface enhances the overall teaching–learning experience. Project works which students do as a part of their curriculum is an active mode of this interface. This also includes guest lectures by industry experts who come to the students to share the real time experiences and the workshops and seminars. One studies says that the interface between the industries and universities affiliated colleges offering management education is very week. To overcome this, universities need to examine the effectiveness of the various od of interface so that synergistic and organic relationship can be build between the universities and the industries and all the participants to the interface.

REFERENCES


