Guidelines on Sustainable and Vibrant University-Industry Linkage System for Indian Universities

ज्ञान-विज्ञान विमुक्तये

University Grants Commission

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A Sustainable and Vibrant University-Industry Linkage System for Indian Universities

Background:

The National Educational Policy (NEP) 2020 recommends vibrant University-Industry linkage with emphasis on exposure for students to real-life examples and making them globally competent. It is expected that a University with a conducive and impactful industry interface will result in innovations enabling solutions to Global challenges. The NEP has also recommended that students, as a part of holistic education, will be provided the opportunities with local industry as well as research internships with faculty and researchers, which will further improve their employability. NEP 2020 also advocates multi-disciplinary learner-centric education, giving importance to learning outcomes.

The "Atmanirbhar Bharat" mission of the Government is aimed at leveraging our huge talent pool available in the education system, the huge Micro, Small & Medium Enterprises (MSME) sector, and support from the Government in this direction.

The guidelines focus on the Atmanirbhar Bharat mission coupled with the incorporation of the values in education as emphasised by NEP 2020 to bring a fresh and healthy aura to the University system and a competitive edge through a fresh culture of effective R&D to the industry, both of which can leverage on a strong UI linkage and in turn provide very competent manpower to the industry and competitive manufacturing, respectively.

I. Objective:

1. To promote Research & Development Thrust through University-Industry (UI) collaborations in the University to address practical R&D problems of high societal relevance by engaging the faculty and students right from degree (UG) college and upwards.
2. To develop the skill sets amongst the learners and make them industry-ready through student Internships, including field/industry/on-job

skills/vocational training/life skills to effectively achieve the learning objectives and attain desired outcomes.

3. To establish linkages and develop sustainable relationships between Industry and Academia.

4. To create training opportunities and apprenticeship opportunities in the industries/ R&D labs/ Research organisations/ other organisations, including social systems across the country.

II. Stakeholders

Universities, Institutes, Colleges (PG/UG), Faculty and Students of Higher Education system in the Country and Industries established in India.

III. Mechanisms to boost Research & Development (R&D) through University-Industry (UI) Linkages

1. Creation of R&D Clusters:
   - i. Universities/Institutes/Colleges and Industries clusters may be created at the state level. Each cluster may be led by an institute of Central/State Government in the region.
   - ii. The cluster may be entrusted with the responsibility of addressing the technological needs of the region in association with the Micro, Small & Medium Enterprises (MSME)/ Ministry of Heavy Industries (MHI)/Dept. of Industries of state governments.
   - iii. Every educational University/Institute/College may create an Industry Relations Cell (IRC) for collaborations and every Industry, including the MSMEs, may create a University Relations Cell (URC) to enable the envisaged collaboration.
   - iv. Constitution of the Cluster R&D Advisory Committee (RAC): The institute serving as the cluster head needs to establish a Regional R&D Advisory Committee (RAC) for advising the R&D growth in the cluster. The constitution of the RAC may be as follows:
     - a. The Director of the C-Hub – Chairperson,
     - b. Directors/VCs of the constituent Universities of the cluster,

c. In-charge, Micro, Small & Medium Enterprises (MSME) Dept. in the cluster,

d. In-charge, Ministry of Heavy Industries (MHI) in the cluster,

e. One member from the Dalit Indian Chambers of the cluster,

f. In-charge (typically, the Principal Secretary) of Industry dept. of the state government,

g. Two members from the Confederation of Indian Industry (CII)/ Federation of Indian Chambers of Commerce & Industry (FICCI) / Dalit Indian Chamber of Commerce and Industry (DICCI)/local chamber of commerce in the cluster,

h. In charge of Small and medium-sized enterprises (SME) in the cluster,

i. Head of the IRC of the C-Hub–Member Coordinator.

The RAC may co-opt one or two College Principals from the cluster as members for a term of up to three years. The RAC may meet at least twice a year.

v. Responsibilities of R&D Clusters:

a. Liaisoning with the URCs of the industry and IRCs of the Universities/ Institutes/ Colleges in the cluster with the objective of enabling the proposed paradigm shift in R&D culture.

b. Brainstorming on need assessment.

c. Identify research topics of interest (long and short time, generic and specific), including those that have local/regional relevance and dissemination of the same among the stakeholders.

d. Dissemination of information within the cluster among all the stakeholders, the IRCs, industries and industry departments as stated in the RAC constitution.

e. Conduct sensitisation/awareness sessions/workshops with the help of the IRC's for the stakeholders.

f. Monitor the progress of the R&D in a cluster in association with the IRC's.

g. Holding the meetings of the Cluster R&D Advisory Committee (RAC) and functioning as per its guidance, and creating relationships and formalising the same through MoU's.

2. Creation of the Industry Relations Cell (IRC) at a University/ Institute/College:

i. Industry Relations Cell (IRC) may be established by the Universities/ Institutions / Colleges.

ii. The main objective of the IRC is to enable collaborative project creation between a University/Institute/College faculty group and an industry group, and the details are enumerated as follows, which are essentially the responsibilities of a Universities/Institutes/Colleges.

iii. Responsibilities of the Industry Relations Cell (IRC):

a. Liaisoning with local industry and enabling the realization of the proposed R&D culture involving own Universities/Institutes/Colleges and the industry.

b. Identifying research topics of interest, including those that have local/regional relevance and dissemination of the same among the stakeholders.

c. Identification of potential problems for collaboration, creation of links between the concerned group of an industry and the concerned faculty group of the University/ Institute/ College and creation of relationships with signed MoUs as an enabler.

d. Liaison with the C-hub and IRCs of other Universities/ Institutes/ Colleges in the cluster.

e. Explore sources of funding for the cell.

f. The drive the actions related to supporting student internships and apprenticeship with the help of the Curriculum development cell of the institute.

g. Monitor the progress of the work.

h. Recognize UI work.

3. **Creation of the University Relations Cell (URC) in an Industry:**

   i. **Every industry, including the MSMEs may establish a URC.**

   ii. **The Universities/Institutes/Colleges may provide Hand-holding support to MSMEs to adopt modern technology.**

   iii. **Responsibilities of the University Relations Cell (URC):**

      a. **Liaisoning with C-hub and IRCs of the nearby Universities/ Institutes/ Colleges and enabling the realization of the proposed R&D culture involving Universities/Institutes/Colleges and their own industry.**

      b. **Participation in the R&D needs assessment exercise by C-hub and IRCs, promoting and carrying out activities such as R&D, continuing education and others of mutual interest.**

      c. **Understanding the present and future R&D needs of the industry in association with the R&D setup of the industry.**

      d. **Identifying the University/College/Institute groups in the cluster and beyond who can address and serve the R&D needs of their own industry, creating the links between them, including the MoUs.**

      e. **To drive the actions related to supporting student internships and apprenticeships.**

      f. **In association with the CSR and R&D cells of own industry and ensuring allocation of financial support to the UI work.**

      g. **Monitor the progress of the work.**

4. **Each cluster may create a technology-centric mechanism to capture the local problems and then assign the same as projects to the students based on the infrastructural cum human expertise available at the host institute of a student.**

5. **Each cluster may upload on its website the details of available infrastructural cum human expertise for sponsored research.**

6. **The University/ Institute / College faculty may be properly incentivised for motivated research. This can be done in different ways, such as,**

a) Reforming the promotion criteria to give more weightage to IP, technology transfers, industry linkages, etc.,
b) Offer Performance-based rewards.

7. A University-Industry (UI) day may be organised by the Universities/Institutes/Colleges and Industry, showcasing the R&D and the other work done for strengthening UI linkages.

IV. University-Industry (UI) Linkages for Enhancements of Student Internship and Apprenticeship in Academic and Industrial Systems:

1. The Universities/Institutes/Colleges may appoint highly experienced industry professionals on appropriate governance bodies as per the requirement of regulatory bodies on the Board of Studies, Academic Councils, and other committees of the University/Institute/College.

2. The Universities/Institutes/Colleges may invite professionals from industry as "Professor of Practice" as per the UGC Guidelines for Engaging Professors of Practice in Universities and Colleges.

3. Universities/Institutes/Colleges and Industry may encourage the facilitation and exchanging of experts for conducting and monitoring of R&D projects as investigators or consultants in each other's or joint project and consultancy activities.

4. Universities/Institutes/Colleges may conduct specialised Workshops and Training programmes jointly with industry on science and technology developments.

5. The industry may provide endowments for the creation of advanced facilities and vocational training centres as per the requirement of the industry or for the cause of education.

6. Industries may allow faculty/ research scholars to use sophisticated and costly equipment available in industry for research. Similarly, the Universities/Institutes/Colleges may allow industry to use the facilities of the University/Institute/College for testing and certification.

7. Industries may establish industry chairs in Universities/Institutes/Colleges and support scholarship schemes to attract meritorious young researchers to the University/Institute/College.

8. The industries and Universities/Institutes/Colleges may jointly work for the development of new technologies in the research labs of the Universities/Institutes/Colleges and take benefit of technology transfer.

9. The industries and Universities/Institutes/Colleges may jointly offer collaborative degree programmes tailored for industry personnel or with emphasis on practice for generic aspirants.

10. Project/dissertation work of UG and PG students of Universities/Institutes/Colleges may be effectively executed under the joint guidance of the faculty and experts from the industry on generic or industry problems.

11. Appraisal from Universities/Institutes/Colleges on ongoing research, expertise, facilities, equipment available in the Universities/Institutes/Colleges, and the important events to the industry through the IRCs would significantly enhance the collaboration.

12. The industry may use this huge resource for its own R&D and production. Similarly, communication from the industry about the potential problems, facilities available and important events would help the Universities/Institutes/Colleges avail the facilities.

13. The Universities/Institutes/Colleges may introduce internships/apprenticeships irrespective of the field, including Arts, Science and Engineering, as per the UGC Curriculum and Credit framework for programmes as notified and amended from time to time.

14. The total credit assignment of internship/apprenticeship and its distribution in the course of study may be as per the UGC Curriculum and Credit Framework as notified and amended from time to time.

15. The number of Internships and type of internships may be decided by the University/Institute/College with the approval of its Statutory Authorities. The University/Institute/College may abide by the UGC Curriculum and Credit framework, National Curriculum Framework, and other relevant notifications of the Ministry of Education (MoE)/other Ministries/ UGC/AICTE.

16. A student may take additional internships on the basis of a recommendation from the institute or on their own depending on the type of programme (professional/ non-professional) and own interest.

17. A University/Institute/ College may designate
    i. A faculty member per course to handle and coordinate the internships related to the academic programme and
    ii. An overall in-charge, head or chairperson at the level of the University/Institute/College.

18. The responsibility of handling the internship may be entrusted to the Curriculum development or placement cell, which may take the help of the IRC for the creation of internships.

19. URC may be responsible for creating and handling the internships in the Industry or Organisation.

20. URC may provide a coordinator and designate:
    i. A hosting mentor for each or each group of students and
    ii. An in-charge at the organisation (or URC) level to handle the internships of all students granted internships.

21. The regulatory framework for the courses and the common framework for running URC and IRC cells may be created by each University/ Institute/College and industry or organisation.

22. Companies/ firms need to be encouraged to offer paid internships to students and make the internships sustainable. Alternatively, it may also be treated as a CSR programme by the industries. Also, during the

internship period companies are advised to ensure the accident insurance protection for the participants.

23. University/Institute/College may do periodic or annual evaluations of the outcomes at their level.

24. A University/ Institute/ College may accept an apprenticeship done in any other institute or industry, where acceptable standards are ensured, in lieu of an apprentice course of a programme.

25. The inclusion of vocational education may also be done in the present curricular structure by making some space in terms of credits as well as contact hours. A University/Institute/College may offer vocational courses in the form of several electives for students to choose from based on their own interests.

26. University/ Institute/ College may provide guidance to students through faculty advisors and a Dedicated "Student Career Counselling Cell (comprising of senior members from both the Institute and from the Industry)".

27. A University/ Institute / College may use the services of facilities and resource persons from industry and organisations effectively to offer training in an enriching set of courses.

V. Sustainability of the Proposed UI Linkage System:

1. **Financial sustainability:** The University/ Institute/ College may provide support to strengthen the mechanisms and may include (but not limited to) the following:
   i. Equity-based funding for entrepreneurial faculty.
   ii. Attract CSR funding from industry (local/national level): Industry associations play a significant role.

2. **Administrative sustainability:** For strengthening UI linkages through research, the following pre-requisites are necessary:
   i. Formation of various cells and monitoring mechanisms by HEIs.

ii. Evolution of time-bound programmes for the different objectives by both University/Institute/College and Industry with clear deliverables.

iii. Development of an aggregator platform that will coordinate and synergise efforts from various quarters University/Institute/College and Industry/Industry associations, etc.

iv. Funding for IRC from corpus/CSR funds/Government projects/donations etc.