Pune Vidyarthi Griha's

College of Engineering & S. S. Dhamankar Institute of Management, Nashik

INNOVATION and STARTUP Policy for Students and Faculty

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Content

Topic	Page Number
Introduction	2
Vision and Mission	3
1. Strategies and Governance	4
2. Startups Enabling Institutional Infrastructure	5
3. Nurturing Innovations and Startups	5
4. Product Ownership Rights for Technologies Developed at Institute	7
5. Organizational Capacity, Human Resources and Incentives	8
6. Creating Innovation Pipeline and Pathways for Entrepreneurs at Institute Level	9
7. Norms for Faculty Startups	10
8. Pedagogy and Learning Interventions for Entrepreneurship Development	11
9. Collaboration, Co-creation, Business Relationships and Knowledge Exchange	12
10. Entrepreneurial Impact Assessment	13
11. Glossary	15
12. References	18

Introduction

India aspires to become 5 trillion-dollar economy by 2024. To reach the mark, it needs to evolve systems and mechanisms to convert the present demographic dividend into high quality technical human resource capable of doing cutting edge research and innovation and deep-tech entrepreneurship.

The 'Innovation and Startup Policy for Students and Faculty' prepared at our institute is a guiding framework to envision an educational system oriented towards startups and entrepreneurship opportunities for student and faculties. The guidelines provide ways for developing entrepreneurial agenda, managing Intellectual Property Rights (IPR) ownership, technology licensing and equity sharing in Startups or enterprises established by faculty and students.

In India, innovation is still not the epicenter of education. In order to achieve the cultural and attitudinal shift and to ensure that 'Innovation and Startup' culture is the primary fulcrum of our higher education system, a policy framework and guidelines are the need of this hour. These guidelines will enable us to actively support our faculty, staff and students to participate in innovation and entrepreneurship (I&E) related activities, thus encouraging students and faculty to consider startups and entrepreneurship as a career option.

The policy is subject to periodical review and amendments.

Vision

- To create an excellent Innovation and Entrepreneurship (I&E) ecosystem.

Mission

- To impart Innovation and Entrepreneurship (I&E) related awareness among students and staff.
- To provide an ecosystem for nurturing the spirit of entrepreneurship among students and staff.
- To fulfill expectations of the stakeholders by equipping students with Innovation and Entrepreneurship mindset so that they become employment providers in the society.

1. Strategies and Governance

a. Implementation of entrepreneurial vision at the institute should be achieved through mission statements rather than stringent control system. The entrepreneurial agenda should be the responsibility of Institution Innovation Council (IIC).

b. Resource Mobilization Plan & Sustainable Financial Strategy:

   i. Investment in the entrepreneurial activities should be a part of the institutional financial strategy. Minimum 1% fund of the total annual budget of the institution should be allocated for funding and supporting innovation and startups related activities through creation of separate 'Innovation fund'.

   ii. The strategy should also involve raising funds from diverse sources to reduce dependency on the public funding. Bringing in external funding through government (state and central) such as DST, DBT, MoE, AICTE, TDB, TIFAC, DSIR, CSIR, BIRAC, NSTEDB, NRDC, Startup India, Invest India, MeitY, MSDE, MSME, etc. and non-government sources should be encouraged.

   iii. To support technology incubators, academic institutes may approach private and corporate sectors to generate funds, under Corporate Social Responsibility (CSR) as per Section 135 of the Company Act 2013.

   iv. Institute may also raise funding through sponsorships and donations. Institute should actively engage alumni network for promoting Innovation & Entrepreneurship (I&E).

c. Importance of innovation and entrepreneurial agenda should be known across the institute and should be promoted and highlighted at institutional programs such as conferences, convocations, workshops, etc.

d. Product to market strategy for startups should be developed by the institute on case to case basis.

e. Development of entrepreneurship culture should not be limited within the boundaries of the institution. Strategic international partnerships should be developed using bilateral and multilateral channels with international innovation clusters and other relevant organizations. Moreover, international

exchange programs, internships, engaging the international faculties in teaching and research should also be promoted.

2. Startups Enabling Institutional Infrastructure

a. Institute should create facilities within their institution for supporting pre-incubation (e.g. IICs as per the guidelines by MoE's Innovation Cell, EDC, IEDC, New-Gen IEDC, Innovation Cell, Startup Cell, Student Clubs, etc.) and Incubation/ acceleration by mobilizing resources from internal and external sources.

b. This Pre-Incubation/Incubation facility should be accessible 24x7 to students, staff and faculty of all disciplines and departments across the institution.

c. Institute may offer mentoring and other relevant services through Pre-incubation/Incubation units in-return for fees or zero payment basis. In this regard, the decision should be approved by the Committee framed by IIC.

3. Nurturing Innovations and Startups

a. Institute should establish processes and mechanisms for easy creation and nurturing of Startups/enterprises by students, staff, faculty and alumni. While defining processes, institution should ensure to achieve following:

   i. Incubation support: Offer access to pre-incubation & Incubation facility to startups by students, staff and faculty for mutually acceptable time-frame. In case, institute doesn't have own dedicated facility/ infrastructure, then it may reach out to nearest incubation facilities in other HEIs in order to facilitate access to their students, staff and faculty.

   ii. Allowing licensing of IPR from institute to start up: Ideally students and faculty members intending to initiate a startup based on the technology developed or co-developed by them or the technology owned by the institute, should be allowed to take a license on the said technology on easy term, either in terms of equity in the venture and/ or license fees and/ or royalty to obviate the early stage financial burden.

   iii. Allowing setting up a startup (including social startups) and working part-time for the startups while studying / working: Institute may allow students / staff to work on their innovative projects and setting up startups (including Social Startups) or work as intern / part-time in

startups (incubated in any recognized HEIs/Incubators) while studying / working. Institute may need to develop clear guidelines to formalize this mechanism. The area in which student wants to initiate a startup may be interdisciplinary or multidisciplinary.

b. Students entrepreneurs should be allowed to sit for the examination, even if their attendance is less than the minimum permissible percentage, with due permission from the institute.
c. Institute should allow students to take a semester/year break (or even more depending upon the decision of review committee constituted by the institute) to work on their startups and re-join academics to complete the course.
d. Institute will facilitate the startup activities/ technology development by allowing students/ faculty/ staff to use institute infrastructure and facilities, as per the choice of the potential entrepreneur in the following manners:
    i. Short-term/ part-time entrepreneurship training.
    ii. Mentorship support on regular basis.
    iii. Facilitation in a variety of areas including technology development, ideation, creativity, design thinking, fund raising, financial management, cash-flow management, new venture planning, business development, product development, social entrepreneurship, product costing, marketing, brand-development, human resource management as well as law and regulations impacting a business.
    iv. License institute IPR as discussed in section 4 below.
e. In return of the services and facilities, institute may charge fees or take 2% to 9.5% equity/ stake in the startup/ company, based on brand used, faculty contribution, support provided and use of institute's IPR (a limit of 9.5% is suggested so that institute has no legal liability arising out of startup. The institute should normally take much lower equity share, unless its full-time faculty/ staff have substantial shares). Other factors for consideration should be space, infrastructure, mentorship support, seed funds, support for accounts, legal, patents etc. Final decision will be based on review committee at the institute.
f. The institute should also provide services based on mixture of equity, fee-based and/ or zero payment model. So, a startup may choose to avail only the support, not seed funding, by the institute on rental basis.

g. Institute could extend this startup facility to alumni of the institute.
h. Participation in startup related activities needs to be considered as a legitimate activity of faculty in addition to teaching, R&D projects, industrial consultancy and management duties and must be considered while evaluating the annual performance of the faculty. Every faculty may be encouraged to mentor at least one startup.
i. Product development and commercialization as well as participating and nurturing of startups would now be added to a bucket of faculty-duties and each faculty would choose a mix and match of these activities (in addition to minimum required teaching and guidance) and then respective faculty should be evaluated accordingly for their performance and promotion.
j. Institution may also need to update/change/revise performance evaluation policies for faculty and staff as stated above.
k. Institute should ensure that at no stage any liability accrue to it because of any activity of any startup.

4. Product Ownership Rights for Technologies Developed at Institute

a. When institute facilities / funds are used substantially or when IPR is developed as a part of curriculum/ academic activity, IPR is to be jointly owned by inventors and the institute.
    i. Inventors and institute could together license the product / IPR to any commercial organization, with inventors having the primary say. License fees could be either / or a mix of
        1) Upfront fees or one-time technology transfer fees,
        2) Royalty as a percentage of sale-price
    ii. If one or more of the inventors wish to incubate a company and license the product to this company, the royalties would be no more than 4% of sale price, preferably 1 to 2%, unless it is pure software product. For a pure software product licensing, there may be a revenue sharing to be mutually decided between the institute and the incubated company.
b. On the other hand, if product/ IPR is developed by innovators not using any institute facilities, outside office hours (for staff and faculty) or not as a part of curriculum by student, then product/ IPR will be entirely owned by inventors in proportion to the contributions made by them. In this case, inventors can decide

to license the technology to third parties or use the technology the way they deem fit.

c. If there is a dispute in ownership, a minimum five membered committee consisting of two faculty members (having developed sufficient IPR and translated to commercialization), two of the institute's alumni/ industry experts (having experience in technology commercialization) and one legal advisor with experience in IPR, will examine the issue after meeting the inventors and help them settle this, hopefully to everybody's satisfaction. Institute can use alumni/ faculty of other institutes as members, if they cannot find sufficiently experienced alumni / faculty of their own.

d. Institute IPR cell or incubation center will only be a coordinator and facilitator for providing services to faculty, staff and students. They will have no say on how the invention is carried out, how it is patented or how it is to be licensed. If institute is to pay for patent filing, they can have a committee which can examine whether the IPR is worth patenting. The committee should consist of faculty who have experience and excelled in technology translation. If inventors are using their own funds or non-institute funds, then they alone should have a say in patenting.

e. Interdisciplinary research and publication on startup and entrepreneurship should be promoted by the institution.

5. Organizational Capacity, Human Resources and Incentives

a. Institute should recruit staff that have a strong innovation and entrepreneurial/ industrial experience, behaviour and attitude. This will help in fostering the I&E culture.

   i. Some of the relevant faculty members with prior exposure and interest should be deputed for training to promote I&E.

   ii. To achieve better engagement of staff in entrepreneurial activities, institutional policy on career development of staff should be developed with constant upskilling.

b. Faculty and departments of the institute have to work in coherence and cross-departmental linkages should be strengthened through shared faculty, cross-faculty teaching and research in order to gain maximum utilization of internal resources and knowledge.

c. Periodically some external subject matter experts such as guest lecturers or alumni can be engaged for strategic advice and bringing in skills which are not available internally.
d. Faculty and staff should be encouraged to do courses on innovation, entrepreneurship management and venture development.
e. In order to attract and retain right people, institute should develop academic and non-academic incentives and reward mechanisms for all staff and stakeholders that actively contribute and support entrepreneurship agenda and activities. The reward system for the staff may include office and lab space for entrepreneurial activities, awards, trainings, etc.

6. Creating Innovation Pipeline and Pathways for Entrepreneurs at Institute Level

a. To ensure exposure of maximum students to innovation and pre incubation activities at their early stage and to support the pathway from ideation to innovation to market, mechanisms should be devised at institution level.
    i. Spreading awareness among students, faculty and staff about the value of entrepreneurship and its role in career development or employability should be a part of the institutional entrepreneurial agenda.
    ii. Students/ staff should be taught that innovation (technology, process or business innovation) is a mechanism to solve the problems of the society and consumers. Entrepreneurs should innovate with focus on the market niche.
    iii. Students should be encouraged to develop entrepreneurial mindset through experiential learning by exposing them to training in cognitive skills (e.g. design thinking, critical thinking, etc.), by inviting first generation local entrepreneurs or experts to address young minds. Initiatives like idea and innovation competitions, hackathons, workshops, bootcamps, seminars, conferences, exhibitions, mentoring by academic and industry personnel, throwing real life challenges, awards and recognition should be routinely organized.

iv. To prepare the students for creating the start up through the education, integration of education activities with enterprise-related activities should be done.

b. The institute should link their startups and companies with wider entrepreneurial ecosystem and by providing support to students who show potential, in pre-startup phase. Connecting student entrepreneurs with real life entrepreneurs will help the students in understanding real challenges which may be faced by them while going through the innovation funnel and will increase the probability of success.

c. For strengthening the innovation funnel of the institute, access to financing must be opened for the potential entrepreneurs.

   i. Networking events must be organized to create a platform for the budding entrepreneurs to meet investors and pitch their ideas.

   ii. Provide business incubation facilities: premises at subsidized cost. Laboratories, research facilities, IT services, training, mentoring, etc. should be accessible to the new startups.

   iii. A culture needs to be promoted to understand that money is not FREE and is risk capital. The entrepreneur must utilize these funds and return. While funding is taking risk on the entrepreneur, it is an obligation of the entrepreneur to make every effort possible to prove that the funding agency did right in funding him/ her.

d. Institute must develop a ready portal for IIC, which must be kept on the homepage on institute's website to answer the doubts and queries of the innovators and enlisting the facilities available at the institute.

7. Norms for Faculty Startups

a. Faculty must clearly separate and distinguish on-going research at the institute from the work conducted at the startup/ company.

b. Faculty must not accept gifts from the startup.

c. Faculty must not involve research staff or other staff of institute in activities at the startup and vice-versa.

d. Human subject related research in startup should get clearance from ethics committee of the institution.

8. Pedagogy and Learning Interventions for Entrepreneurship Development

a. Diversified approach should be adopted to produce desirable learning outcomes, which should include cross disciplinary learning using mentors, labs, case studies, games, etc. in place of traditional lecture-based delivery.

   i. Student clubs/ bodies/ departments must be created for organizing competitions, bootcamps, workshops, awards, etc. These bodies should be involved in institutional strategy planning to ensure enhancement of the student's thinking and responding ability.

   ii. Institutes should start annual 'INNOVATION & ENTREPRENEURSHIP AWARD' to recognize outstanding ideas, successful enterprises and contributors for promoting innovation and enterprises ecosystem within the institute.

   iii. For creating awareness among the students, the teaching methods should include case studies on business failure and real-life experience reports by startups.

   iv. Innovation champions should be nominated from within the students/ faculty/ staff for each department/ stream of study.

b. Entrepreneurship education should be imparted to students at curricular/ co-curricular/ extracurricular level through elective/ short term or long-term courses on innovation, entrepreneurship and venture development. Validated learning outcomes should be made available to the students.

   i. Integration of expertise of the external stakeholders should be done in the entrepreneurship education to evolve a culture of collaboration and engagement with external environment.

   ii. In the beginning of every academic session, institute should conduct an induction program about the importance of I&E so that freshly inducted students are made aware about the entrepreneurial agenda of the institute and available support systems. Curriculum for the entrepreneurship education should be continuously updated based on entrepreneurship research outcomes. This should also include case studies on failures.

iii. Industry linkages should be leveraged for conducting research and survey on trends in technology, research, innovation, and market intelligence.

iv. Sensitization of students should be done for their understanding on expected learning outcomes.

v. Student innovators, startups, experts must be engaged in the dialogue process while developing the strategy so that it becomes need based.

vi. Customized teaching and training materials should be developed for startups.

vii. It must be noted that not everyone can become an entrepreneur. The entrepreneur is a leader, who would convert an innovation successfully into a product, others may join the leader and work for the startup. It is important to understand that entrepreneurship is about risk taking. One must carefully evaluate whether a student is capable and willing to take risk.

c. Pedagogical changes need to be done to ensure that maximum number of student projects and innovations are based around real life challenges. Learning interventions developed by the institutes for inculcating entrepreneurial culture should be constantly reviewed and updated.

9. Collaboration, Co-creation, Business Relationships and Knowledge Exchange

a. Stakeholder engagement should be given prime importance in the entrepreneurial agenda of the institute. Institutes should find potential partners, resource organizations, micro, small and medium sized enterprises (MSMEs), social enterprises, schools, alumni, professional bodies and entrepreneurs to support entrepreneurship and co-design the programs.

i. To encourage co-creation, bi-directional flow/ exchange of knowledge and people should be ensured between institutes such as incubators, science parks, etc.

ii. Institute should organize networking events for better engagement of collaborators and should open up the opportunities for staff, faculty and students to allow constant flow of ideas and knowledge through meetings, workshops, space for collaboration, lectures, etc.

b. The institute should develop policy and guidelines for forming and managing the relationships with external stakeholders including private industries.
c. Knowledge exchange through collaboration and partnership should be made a part of institutional policy and institutes must provide support mechanisms and guidance for creating, managing and coordinating these relationships.
    i. Through formal and informal mechanisms such as internships, teaching and research exchange programmes, clubs, social gatherings, etc., faculty, staff and students of the institutes should be given the opportunities to connect with their external environment.
    ii. Connect of the institute with the external environment must be leveraged in form of absorbing information and experience from the external ecosystem into the institute's environment.
    iii. Single Point of Contact (SPOC) mechanism should be created in the institute for the students, faculty, collaborators, partners and other stakeholders to ensure access to information.
    iv. Mechanisms should be devised by the institutions to ensure maximum exploitation of entrepreneurial opportunities with industrial and commercial collaborators.
    v. Knowledge management should be done by the institute through development of innovation knowledge platform using inhouse Information & Communication Technology (ICT) capabilities.

10. Entrepreneurial Impact Assessment

a. Impact assessment of institute's entrepreneurial initiatives such as pre-incubation, incubation, entrepreneurship education should be performed regularly using well defined evaluation parameters.
    i. Monitoring and evaluation of knowledge exchange initiatives, engagement of all departments and faculty in the entrepreneurial teaching and learning should be assessed.
    ii. Number of startups created, support system provided at the institutional level and satisfaction of participants, new business relationships created by the institutes should be recorded and used for impact assessment.
    iii. Impact should also be measured for the support system provided by the institute to the student entrepreneurs, faculty and staff for pre-

incubation, incubation, IPR protection, industry linkages, exposure to entrepreneurial ecosystem, etc.

b. Formulation of strategy and impact assessment should go hand in hand. The information on impact of the activities should be actively used while developing and reviewing the entrepreneurial strategy.
c. Impact assessment for measuring the success should be in terms of sustainable social, financial and technological impact in the market. For innovations at pre-commercial stage, development of sustainable enterprise model is critical. COMMERCIAL success is the ONLY measure in long run.

11. Glossary

- Accelerators: Startup Accelerators design programs in batches and transform promising business ideas into reality under the guidance of mentors and several other available resources.
- Angel Fund: An angel investor is a wealthy individual who invests his or her personal capital and shares experiences, contacts, and mentors (as possible and required by the startup in exchange for equity in that startup). Angels are usually accredited investors. Since their funds are involved, they are equally desirous in making the startup successful.
- Cash Flow Management: Cash flow management is the process of tracking how much money is coming into and going out of your business.
- Co-Creation: Co-creation is the act of creating together. When applied in business, it can be used as is an economic strategy to develop new business models, products and services with customers, clients, trading partner or other parts of the same enterprise or venture.
- Compulsory Equity: An equity share, commonly referred to as ordinary share also, represents the form of fractional or part ownership in which a shareholder, as a fractional owner, undertakes the maximum entrepreneurial risk associated with a business venture. The holders of such shares are members of the company and have voting rights.
- Corporate Social Responsibility: Corporate social responsibility (CSR) is a self-regulating business model that helps a company be socially accountable – to itself, its stakeholders, and the public.
- Cross-disciplinary: Cross-disciplinary practices refer to teaching, learning, and scholarship activities that cut across disciplinary boundaries.
- Entrepreneurial Culture: A culture/ society that enhance the exhibition of the attributes, values, beliefs and behaviors that are related to entrepreneurs.
- Entrepreneurial Individuals: An Individual who has an entrepreneurial mindset and wants to make his/her idea successful.
- Entrepreneurship Education: Entrepreneurship education seeks to provide students with the knowledge, skills and motivation to encourage entrepreneurial success in a variety of settings.

- Experiential Learning: Experiential learning is the process of learning through experience, and is more specifically defined as learning through reflection on doing.
- Financial Management: Financial Management is the application of general principles of management to the financial possessions of an enterprise.
- Hackathon: A hackathon is a design sprint-like event in which computer programmers and others involved in software development, including graphic designers, interface designers, project managers, and others, often including domain experts, collaborate intensively on software projects.
- Incubation: Incubation is a unique and highly flexible combination of business development processes, infrastructure and people, designed to nurture and grow new and small businesses by supporting them through the early stages of development.
- Intellectual Property Rights Licensing: A licensing is a partnership between an intellectual property rights owner (licensor) and another who is authorized to use such rights (licensee) in exchange for an agreed payment (fee or royalty).
- Knowledge Exchange: Knowledge exchange is a process which brings together academic staff, users of research and wider groups and communities to exchange ideas, evidence and expertise.
- Pedagogy and Experiential Learning: It refers to specific methods and teaching practices (as an academic subject or theoretical concept) which would be applied for students working on startups. The experiential learning method will be used for teaching 'startup related concepts and contents' to introduce a positive influence on the thought processes of students. Courses like 'business idea generation' and 'soft skills for startups' would demand experiential learning rather than traditional class room lecturing. Business cases and teaching cases will be used to discuss practical business situations that can help students to arrive at a decision while facing business dilemma(s). Field based interactions with prospective customers; support institutions will also form a part of the pedagogy which will orient the students as they acquire field knowledge.
- Pre-incubation: It typically represents the process which works with entrepreneurs who are in the very early stages of setting up their company. Usually, entrepreneurs come into such programs with just an idea of early prototype of their product or service. Such companies can the graduate into full-fledged incubation programs.

- Prototype: A prototype is an early sample, model, or release of a product built to test a concept or process.
- Science parks: A science park, also known as a research park, technology park or innovation centre, is a purpose-built cluster of office spaces, labs, workrooms and meeting areas designed to support research and development in science and technology.
- Seed Fund: Seed fund is a form of securities offering in which an investor invests capital in a startup company in exchange for an equity stake in the company.
- Startup: An entity that develops a business model based on either product innovation or service innovation and makes it scalable, replicable and self-reliant and as defined in Gazette Notification No. G.S.R. 127(E) dated February 19, 2019.
- Technology Business Incubator: Technology Business incubator (TBI) is an entity, which helps technology-based startup businesses with all the necessary resources/support that the startup needs to evolve and grow into a mature business.
- Technology Commercialization: Technology commercialization is the process of transitioning technologies from the research lab to the marketplace.
- Technology Licensing: Agreement whereby an owner of a technological intellectual property (the licensor) allows another party (the licensee) to use, modify, and/or resell that property in exchange for a compensation.
- Technology Management: Technology management is the integrated planning, design, optimization, operation and control of technological products, processes and services.
- Venture Capital: It is the most well-known form of startup funding. Venture Capitalists (VCs) typically reserve additional capital for follow-up investment rounds. Another huge value that VCs provide is access to their networks for employees or clients for products or services of the startup.

12. References

Documents:

- National INNOVATION and STARTUP Policy 2019 for Students and Faculty
- Innovation, Incubation and Startup Policy for Students, Faculty and staff, DIT University

Webpage:

- https://nisp.mic.gov.in/