### Project Summary

India has the 3rd largest start-up eco-system in the world having about 50,000 start-ups in 2018. Of these about 9000 are deep-tech start-ups, with around 1300 new tech start-ups born in 2019 alone, implying 2-3 tech start-ups born every day. Start-ups in the country have been able to create an estimated 40,000 new jobs over the last year, taking the total jobs in the start-up ecosystem to 1.6-1.7 lakh. The unicorn story of 2021 is the one with many firsts, as the ecosystem witnessed the entry of the first health-tech, social commerce, e-pharmacy unicorns. The total count of Indian startups that have entered the unicorn club to date stands at 75.

**Purpose:** The focus of research in this project will be aimed at studying the funding and regulatory framework issues for the emerging deep-tech startups in the country and benchmark them against the well-established startup eco-systems in the US and elsewhere. It is expected that this research will look at these issues from the point of investors, startup founders, financial institutions, policymakers, government, academic institutions, and venture capitalists. A determined approach to this work and research will be instrumental in coming up with better and more tailor-made solutions which will get converted into a model of strategic financial management leading to more accessibility of finance to deep-tech start-ups. This research will also be the enabler for outlining the regulatory and policy framework both from the Government as well as public-private partnership (PPP).

**Proposed Method:** A hybrid method will be adopted for this project. We will utilize both qualitative and quantitative methods to conduct this research. In essence, deep-tech Startups are important but difficult to research, and therein lies a major research opportunity. Further, the startup process does not appear to be simple and linear but is instead complex and dynamic and a startup may end soon after it was founded or morph into something completely different. Further, beyond its practical importance, research on deep tech Startups is of broader theoretical significance because such work is the
antecedent to the substantial research streams on established organizations in management, organizational behavior, and strategic management.

**Probable outcomes:** This research will be focusing on various theoretical and policy framework papers, in addition to data from government and industry bodies, to provide inputs at policy level including the PPP models. They will subsequently be tested empirically to generate further knowledge and financial models in order to accelerate growth of entrepreneurship in various upcoming deep-technology verticals such as Artificial Intelligence, Space and Quantum Technology areas. The final outcome expected will be to have a comprehensive Financial and policy framework for start ups which can be used by the government to enforce best practices for effective governance.

**Need for this Research:** It has been generally agreed that, particularly in developing countries like India, lack of access to finance, manufacturing facilities and a regulatory framework are some of the most binding constraints to technology start-ups. This will also take care of the Government of India’s initiative to nurture the spirit of innovation among academic institutions and translate these into products, processes and services for commercial purposes and its manifestations.

**Implications for Academicians and Practitioners:** The framework will describe the main building blocks of this model framework, enrich it with existing research insights, and point out promising new research opportunities in a way that generates new insights. In doing so, we hope to make several contributions.

First, we aim to bridge the academic–practice divide. Bridging this divide will help practitioners by providing evidence and nuance from academic research, it will help academics by offering insights that can guide researchers to questions that are of interest to both academics and practitioners, and it will help educators by explaining key aspects underlying new venture deep-tech Start-ups.

To conclude the need for a sound model for the financial and Policy framework for deep-tech start-ups is even more imperative now as evident from the RBI Committee report on 2019. The RBI Committee on MSMEs deliberated on all the aspects relating to startups in India and found that “the major reason for migration of startups to other countries is because of better enabling environment such as tax concessions, well developed infrastructure, ease of doing business, exit policy, etc. Hence, the Committee was of the view that financial incentives and excellent infrastructure facilities must be deployed to retain successful Indian startups and to lure the best talent from across the world to start businesses in India”
## PhD Supervisors

<table>
<thead>
<tr>
<th>Role</th>
<th>Faculty</th>
<th>Academic Unit in IITD</th>
<th>Email ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor 1</td>
<td>Prof Sanjay Dhir</td>
<td>Dept of Management Studies</td>
<td><a href="mailto:sanjay@dms.iitd.ac.in">sanjay@dms.iitd.ac.in</a>, <a href="mailto:sanjaydhir.iitd@gmail.com">sanjaydhir.iitd@gmail.com</a></td>
</tr>
<tr>
<td>Supervisor 2</td>
<td>Prof V Ramgopal Rao</td>
<td>Dept of Electrical Engineering</td>
<td><a href="mailto:rrao@iitd.ac.in">rrao@iitd.ac.in</a></td>
</tr>
</tbody>
</table>

## Project requirements (Student qualifications, experience required, etc)

- MBA/PGDM - Preferably in Finance/Marketing/Strategy Domain (60% Marks / 6.0 CGPA on a 10-point scale)
- 5+ Years of overall experience (mandatory) in relevant domain

## Source of funding (IRD/FITT Project details, if any)

Part-time Candidates with qualifications and experience as above

## Role of Faculty Members involved:

The faculty member is required to provide academic guidance and practical support from the inception of the project to the submission of the thesis. It is expected that the more experienced colleague will provide mentoring support.

The faculty should:

1. assist in integrating the candidate into the academic and social life of the department
2. provide a collaborative research environment and encourage open communication
3. ensure that meetings with co-supervisors and/or departmental advisory committees operate in a constructive manner