



Office of the Principal Scientific Adviser
to the Government of India

SCIENCE & INNOVATION @ BHARAT

**A NERVE CENTRE OF SCIENCE & INNOVATION FOR
SOCIAL IMPACT AND INDUSTRIAL DEVELOPMENT**

Introduction

Office of Principal Scientific Adviser (PSA) to Government of India has been instrumental in facilitating Industry-Academia partnerships for social and industrial development in addition to those that are undertaken directly by respective institutes.

Academic Institutes include a vast network of IITs, NITs, IISc, IISERs, CSIR labs, Research Parks, AGNii, Atal incubation centers, Startup India etc.

Engaging with Industry partners on 200+ projects focused on Agriculture, Climate Change, Electric vehicles, Energy efficiency, Defense, Waste management, WASH, Networking, Biomedical, Chemicals etc.



Stakeholders can make their own groups, build partnerships, discuss and develop projects.

Digital Platform

A digital platform "Science & Innovation @ Bharat" has been conceived as a single go-to collaboration between academia/ startups and Industry/Philanthropic sector.



Empower various stakeholders to scale up the interactions with researchers/ innovators and facilitate R&D/ innovation, share challenges in various emerging technologies and scientific interventions as well as those that make a Social Impact.



It will also attempt to provide an overview on science, technology and innovation expertise and strengths at a National level on social impact areas.



Stakeholders can utilize innovation exhibition halls and conference facilities etc.

Advantages & Indirect Benefits...

01

A reliable directory of key innovations, research proposals, market ready technologies.

02

Limited yet pertinent information for knowledge, discovery and decision making.

03

Dashboards of engagements and outcomes that can feed into course corrections.

04

Outreach of STI opportunities to lesser known institutes within the reputed circle.

05

Ensures a robust tracking and outcome system.

Platform USP

How different is the platform from the rest

01

Platform will not be crowded with any technology that cannot be owned by a reputed institute/incubator or doesn't have reasonable credentials.

02

Minimal moderation by administrators. Democratized for direct usage by the stakeholders.

03

R&D proposals will go through rigorous peer review (industry and academic).
Proposals Innovations will be tagged based on their credentials.

04

MoUs, funding or legally disputable activities will NOT be part of the platform.

05

Philanthropic sectors and industry will be the protagonists.

Partners

Advise, review and engage on the design, development, implementation and outreach of the platform.

Mr. Lakshmi Narayanan – primary promoter and partner of O/o PSA



Co-Sponsor and Financial Inclusion Partner

NASSCOM[®]
FOUNDATION

IT Industry Foundation



Conference Pillar Partner



Emerging Technology Consultation



Innovation Exhibition Hall Design



Multilateral Organization



Expert Consultation Group



#startupindia



IIT Delhi





Expert Consultation Group



THE
ROCKEFELLER
FOUNDATION

BILL & MELINDA
GATES *foundation*

SOCIAL
alpha ↗

 IIT Madras Alumni Association
Reconnect • Engage • Impact

 CSRBOX

THE / NUDGE



Expert Consultation Group: Members to be Confirmed



Landing Page & Virtual Infrastructure Facilities

Objective & 'What to look forward' to section

Coverage – who can engage?

Success Stories: Institutes & Industry that have been provided logins by administrator can upload their own success stories post collaborations, this could be connected to the handle of PSA's tweet & social media. Moderator can trigger and amplify. Includes archives.

LANDING PAGE

Dashboards to show richness of type of technology or subject matter expertise i.e. how many CoEs/ SMEs on Quantum, semiconductors, MSME etc.

Static data on Challenges, Proof of concept of State Governments: displayed from demand side section (to avoid duplications)

Platform Process flow for stakeholders

Dashboards

Bird's eye view of the information stored and exchanged on the platform

01

Emerging Technologies: Summary dashboard on all the institutes, researchers, organizations, subject matter experts, research proposals, sliced by various parameters to understand the overall Science and Technology picture in the country.

02

STI for Society: Summary dashboard on all the initiatives undertaken by institutes, researchers, and organizations to identify the gaps to be filled in.

03

Key Collaborations: Status of key collaborations and their nature (graphs)



Online Information Exchange Key information to be exchanged by the stakeholders on the platform instead of taking offline request



Review/ rating Mechanism: All completed projects to be reviewed and rated by partners/funders to reflect good behavior



Tracking system for responsiveness of academia, startups and industry.



Showcase of Success Stories: Success stories to be posted on the platform to serve as an incentive for taking work in responsible manner



Templates for Data Entry - standardization: Relevant templates will be provided for all data entry (proposals, challenges, reviews) with fields to collect relevant information on timelines, outcomes etc., to support tracking and interventions via the right dashboards. Accountability of the uploads will be on the respective user.



Accountability will be ensured by both the individuals (SPOCs) as well as the affiliated organization/ institutes.



Accountability

Mechanisms planned in the system to promote accountability

Areas of Interest

Technology areas to be supported by the platform



Emerging Technologies:

1. Approximately 10 top domain areas i.e. e-mobility, Defense, Quantum, AI&ML, Semiconductors, Infectious diseases etc. A renowned consulting firm will design.



STI for Society:

Approximately 8-10 domain areas i.e. Immunology/ virology studies, agriculture technologies, WASH, Waste to Value, Environmental technologies (Agriculture waste, air pollution, renewable energy, alternative cement etc.), Biodiversity, Smart Cities, Technologies or programs for School children, rural India etc.

Showcase of information will be interesting, user friendly, stacked by Science & Technologies for Social impact and emerging technologies. Intelligent searches will be provided with various permutations and combination.

Infrastructure and Facilities



Virtual Exhibition & Conference halls

For any Institute or Industry to book for regular Innovation exhibitions & Knowledge conferences



Proposal peer review engine

Will be developed as a part of the platform to review proposals by Industry and Academia. Only reviewed proposals will be posted.



Chat bot

Between Technologist & Demand side member.



Video conferencing

Scheduled VCs between Technologist & demand side member (use of telemedicine or any other e.g. Kisanmitr)



Feedback on technologies

Directly shared with technologists



Rating of technologies

Displayed for all viewers

SUPPLY STAKEHOLDERS

Supply Side - (focus on quality)!

Research Institutes

Limited to premier institutes IITs, NCBS, IISc, TIFRs, NITs, IIITs, CSIRs, IISERs, DRDO, AIIMS, ICARs, Jadhavpur University, FRI, WII, Top ranked Agriculture Universities & Central Universities (select few based on ranking), Cluster institutes (of repute primarily)

Start-ups and SMEs

Outside incubators that have gained credibility by national and international recognition, certification or business success

Incubators & their start ups

8 IIT Research Parks, C-Camp, NCL Pune, Villgro, Social Alpha, Atal Innovation Labs, Invest India – AGNii and Startup India (limited to those start ups that have been reviewed & approved or technologies that have been certified or successful POCs)

S&T Clusters, Centre of Excellences (CoEs)

CoEs (Air pollution ,Clean Energy, Organic Waste, Industry waste, Sludge management)

Clusters (Bengaluru, Delhi, Pune, Hyderabad, Jodhpur, Bhubaneswar)

Show Case

1

S&T Clusters/ Centre of Excellence(CoE) Brief description of the Clusters/ CoEs working on a mission mode (including multi departmental groups – i.e. Smart cities, WASH, Bio diversity etc.), faculty involved in the CoE, broad deliverables, video of the CoE

2

Market Ready Technologies: Brief description of the research that is ready to be taken the market, faculty involved and any proof-of-concepts developed.

3

PhD/Research topics: List of research topics on the identified domains with researcher details

4

Subject matter experts: List of National and International faculty/ researchers in areas mentioned above along with the relevant experience and publications.

Displayed strengths of the Institutes in the identified technology areas of interest

Information will be displayed in an interesting & user friendly manner

Wants

Requirements published from the supply side on the platform

To seek attention towards ***the Ask of the Institutes***



R&D Proposals (TRL 3 to 9)

Faculty can share peer reviewed proposals



Student engagements

Request for fellowships, internships, PhD primary research requests, factory visit requisitions etc.



Any special, 'out of the box' asks

Details can be provided in this section



Pitch for CoEs

Upload any request for augmentation of existing CoE or new CoE. Pitch should include envisaged deliverables, strength & reason why institute thinks they are eligible for a CoE

DEMAND STAKEHOLDERS

Demand Side

Serve the Universe!

- Industry - Indian & Global Industries, Chambers of Commerce, CII, FICCI
- Public Sector Units & Cooperatives
- MSME Sector
- Government - State & Central Line Ministries
- Philanthropists - Global/Indian Foundations/HNI network/Trusts



- Multilaterals - GIZ, UNDP, UNEP, USAID etc.
Embassies/Other Government – Developed & Developing countries.
- International/National NGOs – those that have
- Coalitions/Consortiums with a Mission – Toilet Board Coalition, Smart Water Waste (Indian Express initiative), Echo Network etc.
- Entrepreneurial Support Organizations – GAME₂TIE etc.

1

Industry facilities that can be offered to Academia or Start ups: Brief description with point of contact, factory space, student factory visit, any piece of land & building for usage by academia etc.

2

Subject matter experts: Industry experts in areas of focus of the platform.

3

Any rolling challenges, Offers: by multilaterals or other stakeholders can be posted

4

Requirement of CSR: STI interventions for Society and offers as a philanthropic or business proposition

5

Proof of Concept- Details of the PoC for which they require technologies

6

Areas of research interest: in the Emerging Technologies, updated on an ongoing basis

Showcase

Wants

Requirements published by the Industry, Coalitions, Consortiums & Chambers of Commerce



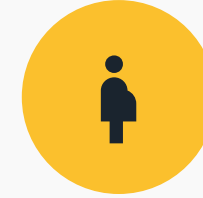
Plan for Centre of Excellence

Demand side can post specific call for proposals or request a pitch for CoEs



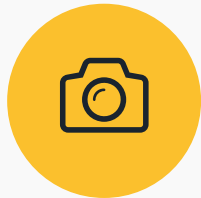
RFPs for R&D (TRL 3 to 9)

Industry can post or upload their RFPs and call for R&D proposals



Student engagement offers (nature of CSR or in kind)

Offers of Fellowships, Apprentices, Internships, PHD primary research requests, factory visit requisitions



Any special, 'out of the box' offer

Land, building, facility owned by demand stakeholder or joint incubation programs



New potential product vertical:

Brief and non confidential details of new product with point of contact (to be shared with only those that have logins by administrator)



PhD/Research topics of Demand side's interest:

List of research topics based on requirements

Wants

Requirements published by State Government, Central Government, Multi-laterals, International & National NGOs



Challenge or Problem Statement with budgets for funding

Faced by Municipality,
District Collectors for which
technology is sought, details
of the problem with contact
person and date of
submissions, template etc.



Innovation Challenges

Details with submission
template, platform to
have its own template
for ease of use.



Co-funding or Infrastructure

Offer with Industries for
academia or start ups.

BEHIND THE SCENES

Project Management – Short & Long term

01

Project Advisory Committee

For overall direction & guidance.
NIC to be part of this Committee.

03

Project Management team

Manages the development of the platform through IT firm.

02

Data Collection & upload

Project management team and strategy Alliances team sources data from all stakeholder using web crawl and other methods.

Data that is older than 6 months and dormant will be archived.

04

Stakeholders Engagement

All stakeholders that adopt the Platform, upload and maintain the data.

Platform will be evangelized by knowledge partners and collaborators

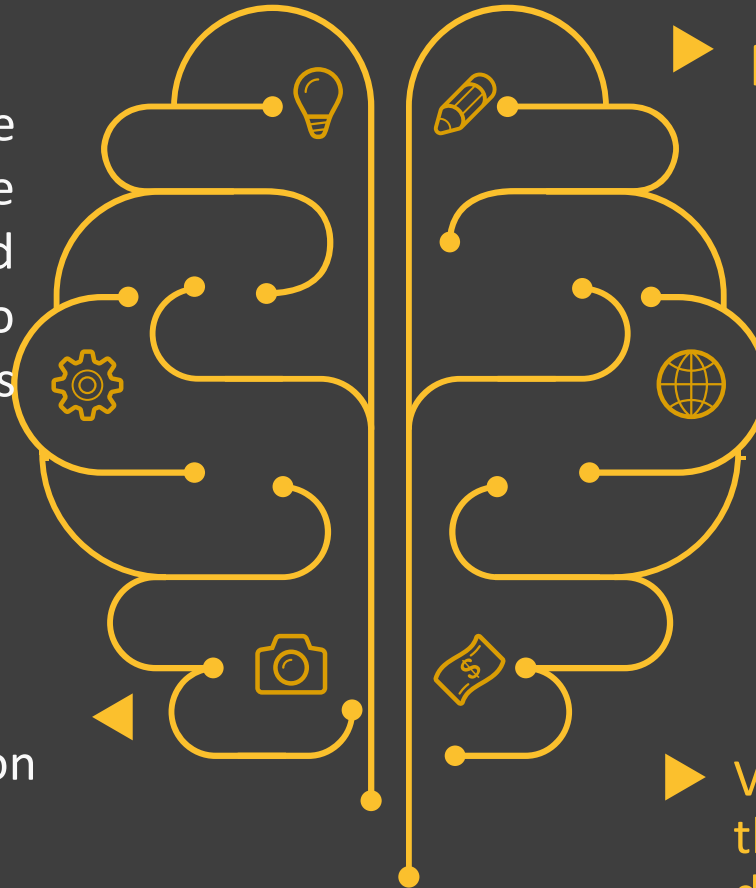
Other Key Features

Emails ◀

to be triggered by demand side stakeholder for any significant challenge or contribution being made by demand side stakeholder. This is in addition to posting bulletins and challenges

China wall between Industry & Technologists ◀

For Industry R&D. Selective display infew cases of challenges to select Institutes or faculty members based on SMEs.



▶ Repurposing existing systems

Should be fine but product should not become a bottle neck

▶ Concurrent users, platform performance & data storage

Annual maintenance cost to be kept in mind while designing the platform

▶ Videos, pictures etc. should not make the platform too heavy in terms of data storage

Thank You

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<https://www.psa.gov.in/innovation-science-bharat>