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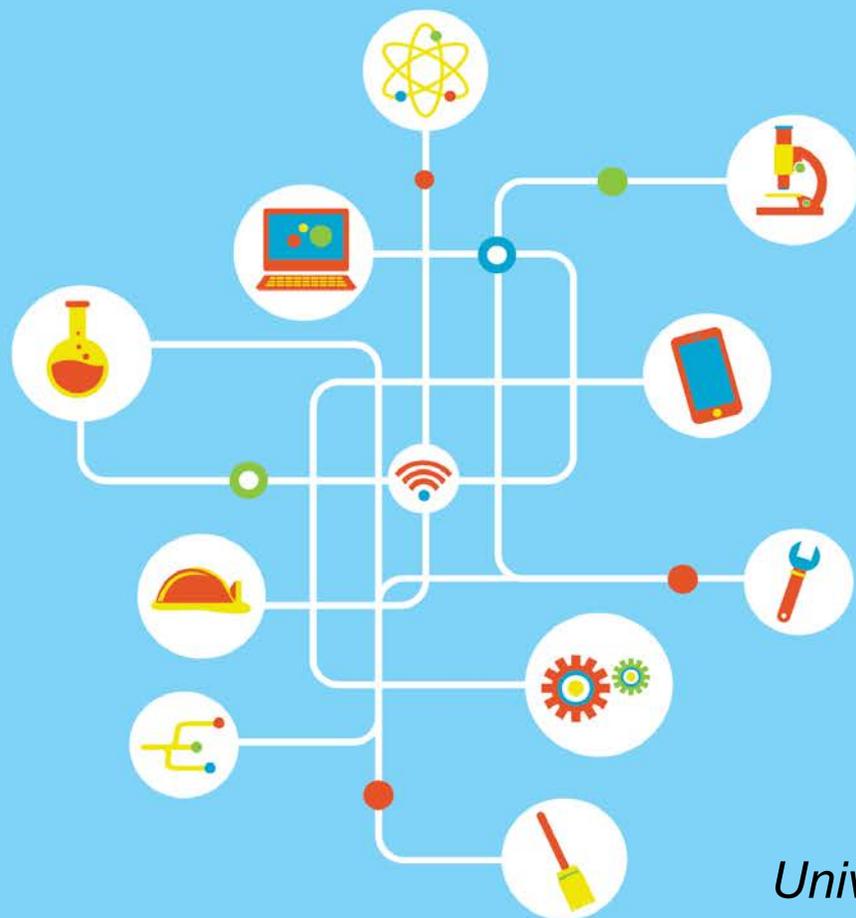
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University Industry Linkages-Experiences@IITK

B V Phani

20th September, 2016



Dr. Phani BV

Professor: Finance, Innovation and Entrepreneurship

University Industry Linkages

Issues and Challenges:experiences@IITKanpur

[Session 4]



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Summary and conclusions

- Academia Industry State ((AIS) Linkages- Survival Critical
- Global Competition & Information Explosion
- Redundancy or Limited Efficacy of Existing Models
- From 'Publish or Perish' to 'Collaborate or Collapse'
- Equal Partners for Socio Economic Wealth Creation
- Industry from Mars & Academia from Venus
- Leveraging Strengths $1+1 = 3,4,5\dots\dots\dots$
- Champions, Evangelists, Owners A-I-S
- Criticality of State's Role
- Sustainable Socio Economic Innovation Ecosystem

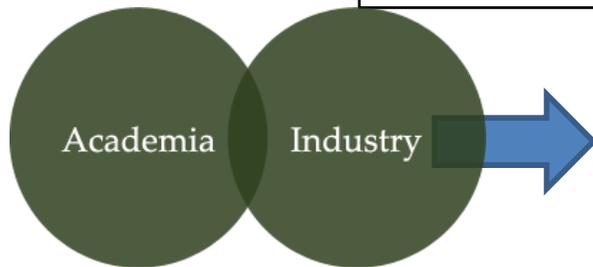
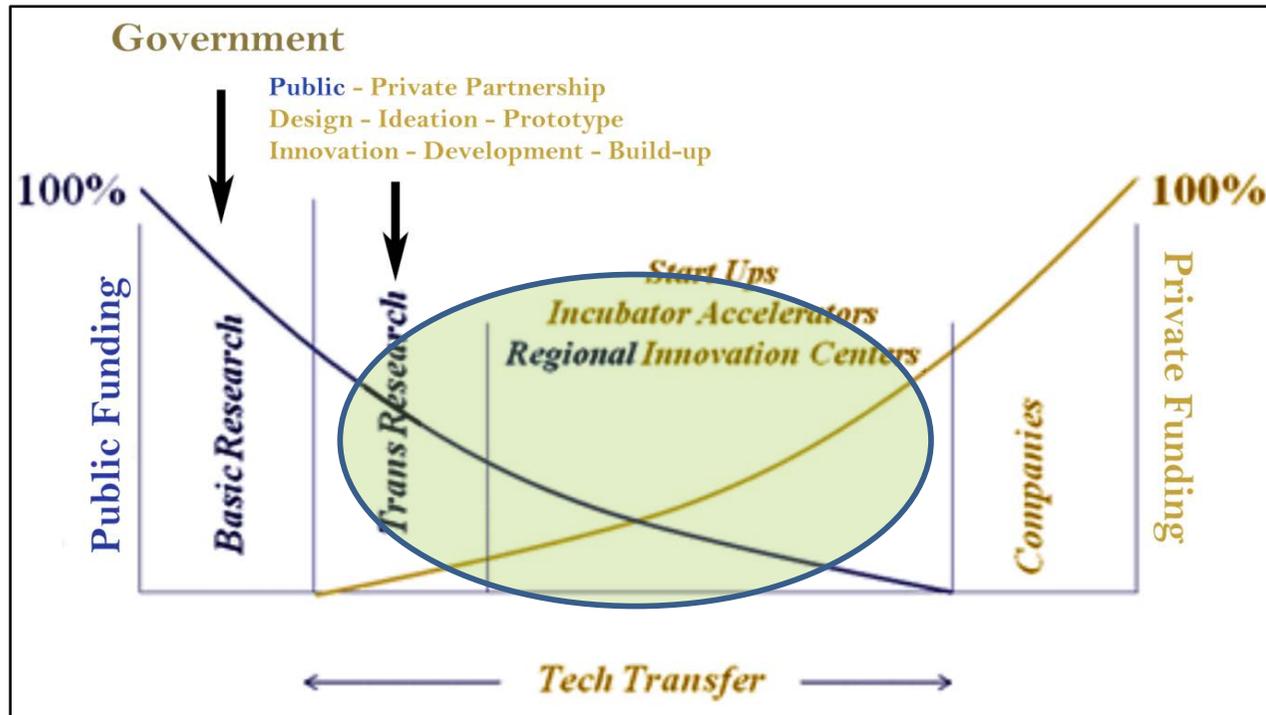


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A-I-S Problem Statement



Facilitating the natural flow of knowledge generation and innovation to its logical conclusion → **Societal benefit**



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AIS Linkage Models

- Triple Helix
 - Knowledge Economy
 - AIS
- Quadruple Helix
 - Knowledge Society and Democracy
 - Billion Challenges-Million Minds
- Quintuple Helix
 - Socio Ecological Transition

– *Carayannis et.al 2012*

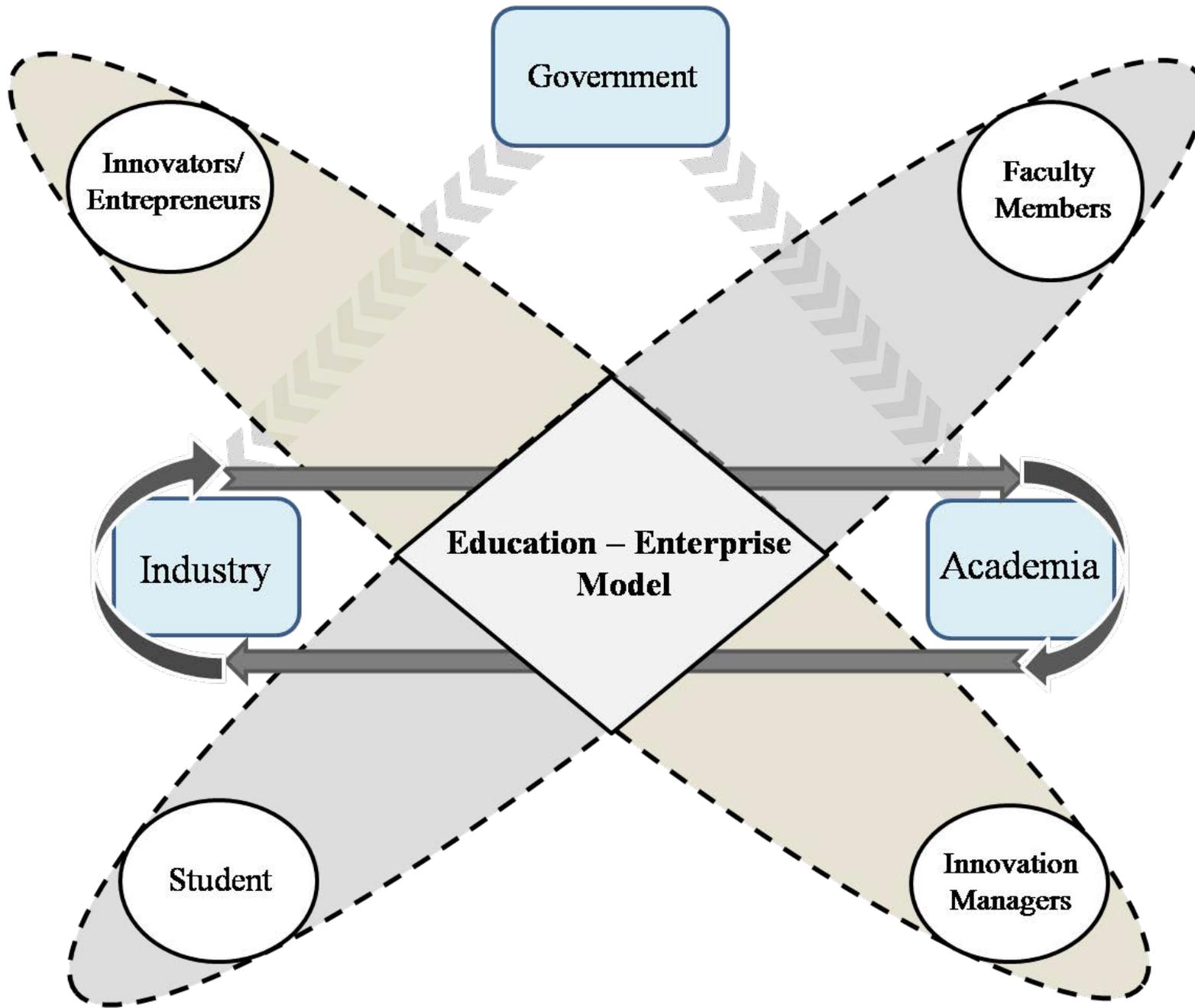


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Ecology Knowledge & Innovation



Economy Society & Democracy

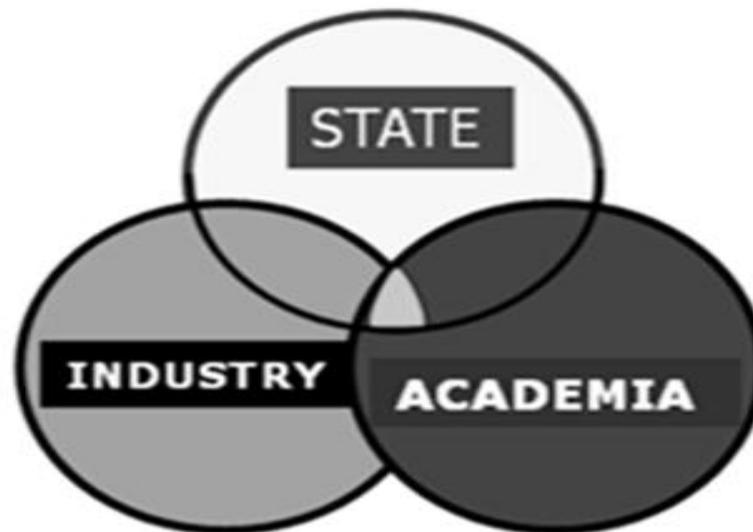
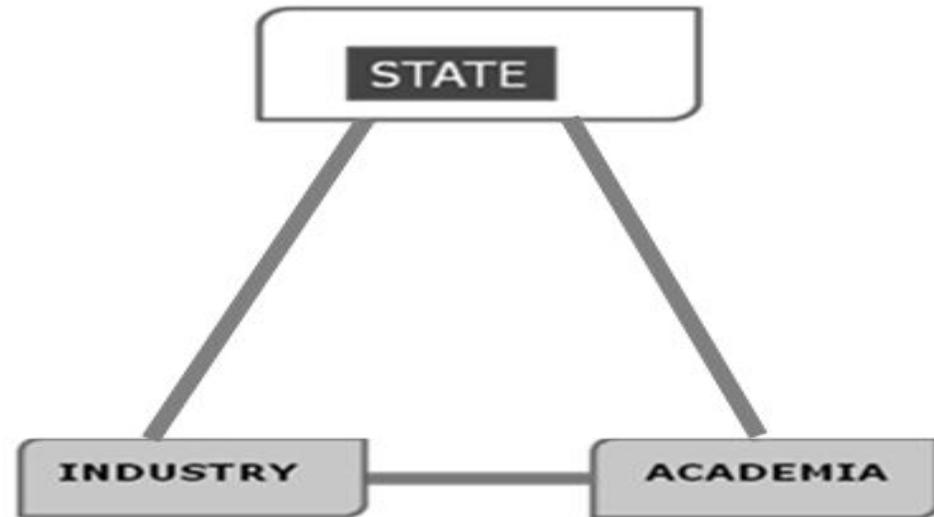


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AIS Operational Models



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'A' from Mars vs 'I' from Venus

Industry

- Incompatible priorities
 - Industry Priorities
 - Return Oriented
 - Patents & Products
- Creation & Protection
- Hierarchical Model
- Performance culture & Pressure
- Tangible Benefit



Academia

- Incompatible priorities
 - Academic Priorities
 - Scientific Curiosity
 - Publications
- Creation & Dissemination
- Collaborative Model
- Peer culture & pressure
- Intangible Benefit



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A-I-S Effective Collaboration

- We need to find ways to make collaboration more effective
 - Senior management ‘buy-in’ → both parties
 - Identify a single point contact → choose the right person!
 - Create a dedicated team → motivation and belief → sense of belonging towards the cause
 - ‘Dating’ agents → Alumni working in industry → agents for the change
 - Industry connect ‘Sandboxes’ → opportunities for doing experiments together
 - ‘Café clubs’ → Student industry platforms → Interaction cells
 - Create innovation eco-systems
 - Going beyond incubation → Research parks



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A-I-S Ecosystem Enablers

- Exposing students early to innovation and entrepreneurship paradigms
- getting patents from undergraduate programs – projects?
- industry connect talks and seminars
- Educating the faculty on legal and IP issues
- Dedicated team → driven, goal oriented?
- Leveraging alumni network
- Industrial internship/sabbaticals programs
- Non-academic tinkering platforms/ Hands-on laboratories
- Openly discuss intended benefits, requirements and risks
- Consider which mode of collaboration best fits the intended objectives
- Negotiate professional contracts on IP, confidentiality and publications
- Retain full transparency on terms and conditions
- Sensitize the community/group towards confidentiality and IP rules
- Monitor progress → improve communication
- Acknowledge and celebrate success
- Build relationship → mutual trust, respect, Avoid confrontation



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A-I-S Enablers-IIT Kanpur

- Industry Assisted Credit Based Courses
- Summer Undergraduate Research & Graduate Excellence Program (SURGE)
- Expert in Residence (Industry & Academia)
- Resident Scholars (Industry & Academia)
- Centers of Excellence Industry Research (PPP Models)
- Promotion of Work Experience and Research (POWER)
- Sponsored Academic Degrees from Industry Problems
- CSR & Tax Incentives



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A-I-S Leveraging Strengths

- (A) Consultancy mode
- (B) Contract or sponsored research
- (C) Public-Private-Partnership

(A) For Industry

- Fresh outside ideas come in
- Networking opportunities
- IP usually remains with industry

(A) For academia

- Scientific discussions: outing: appreciation
- Opens other opportunity
- Financial flexibility/ freedom

(B) For Industry

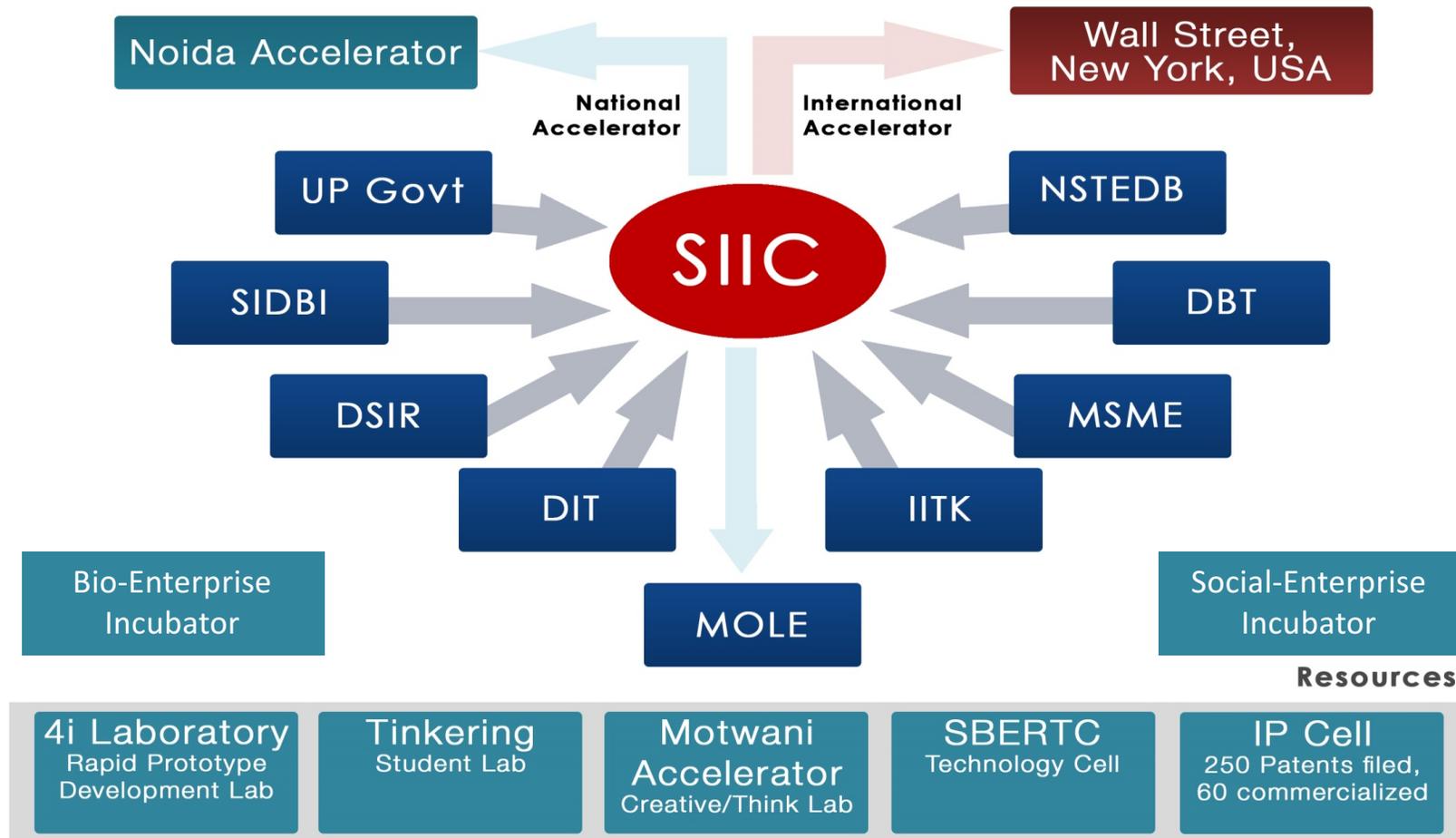
- Leverage external infrastructure
- Cost saving → Manpower → Speed of research
- Flexibility → multiple collaborations

(B) For academia

- Support peripheral research
- New ideas → fund management
- Group vibrancy



A-I-S Interaction Ecosystem-IIT Kanpur



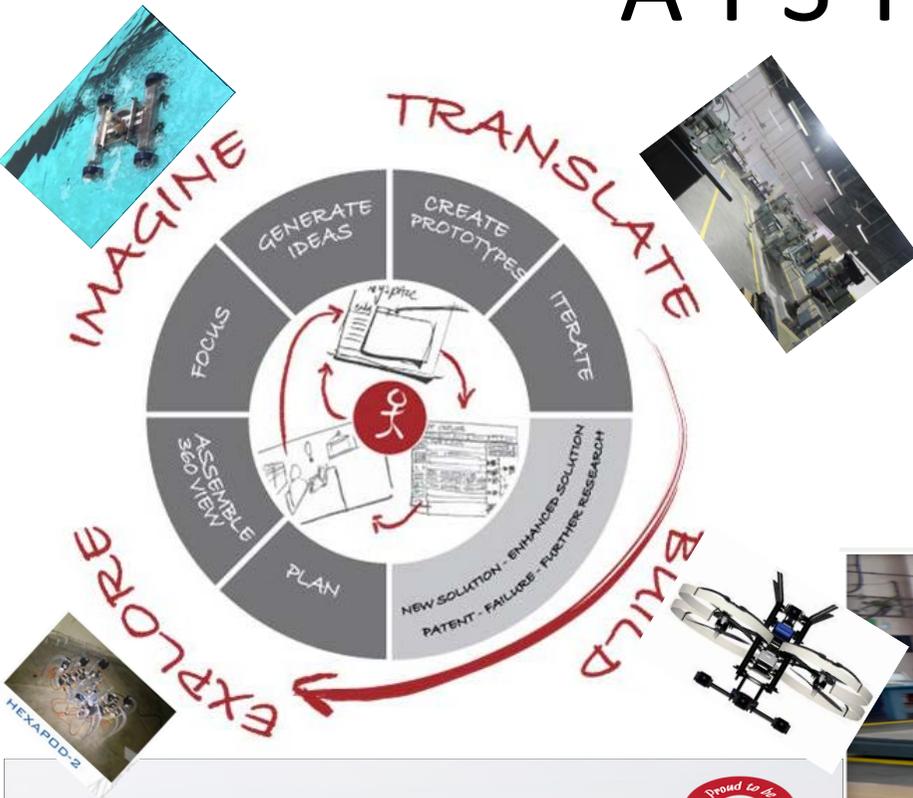
Innovation and Industry Collaboration

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A-I-S Think Space



The lab is accessible to

- All institute students
- Incubates & SME's
- Startups & Entrepreneurs
- Research Labs & Industry



A-I-S Facilitative Ecosystem

Features

- Open to anyone
- Access to IITK Infrastructure
- Mentoring
- Office/Residential Space
- Research Space
- Funding Assistance: SEED & PP Funding
- IP Management, legal, accounting
- Acceleration support system

Support Services

- Dedicated Technology Transfer Office
- Evaluation & Transfer Services
- Resident CA, IP Consultant, Marketing
- MOUs with Consultants
- Industry Interaction Initiatives
- Data Compilation, Display and Showcase
- Industry Databases



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A-I-S Sustainability Model



Primary sources

- Space Charges
- Facility Charges
- Recurring Charges
- Membership Charges

Other sources

- Sponsored Research Funding
- Overheads Charges.
- Incentivized CSR & Research funding
- Technology Transfer and Commercialization
- Skill Building, Training and HRD fees.
- Equity Exit



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A-I-S: An Overview-IIT Kanpur

VISION

Creation of Intellectual Property and setting up an exemplary paradigm for technology incubation to catalyze entrepreneurship for positive socio-economic impact

MISSION

To provide a platform to start ups and prospective entrepreneurs for converting their innovative ideas into commercially viable products

Key words:

- **Innovation and Incubation**
- **Industry Collaboration**
- **Entrepreneurial Ecosystem**
- **Intellectual property management**



- **One of the largest innovation eco-systems!**
- **> 62 startups Incubated: Equity based model**
 - **Graduated 34**
 - **Current 32**
 - **Under Consideration 10**
 - **Expected 100**
- **Seed fund disbursement > 20 startups**
- **IIT Kanpur's Equity > \$ 5 Million**
- **Investment- \$ 15 Million**
- **Commercialization Income: of the order of \$ 0.4 Million**

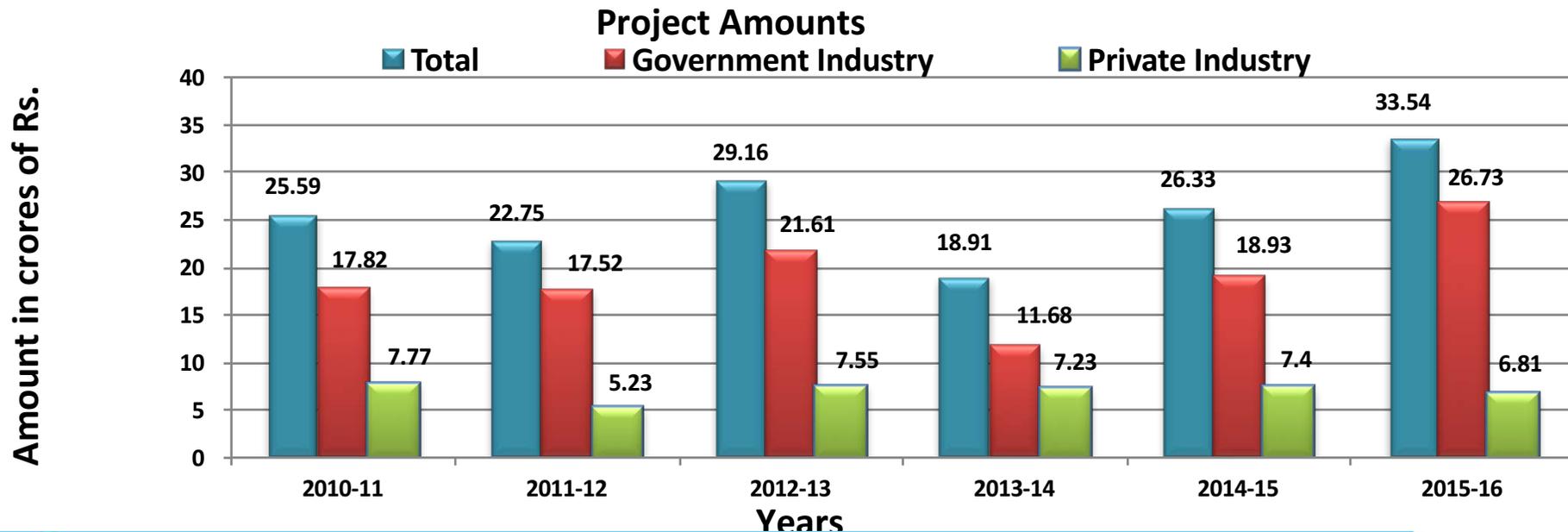
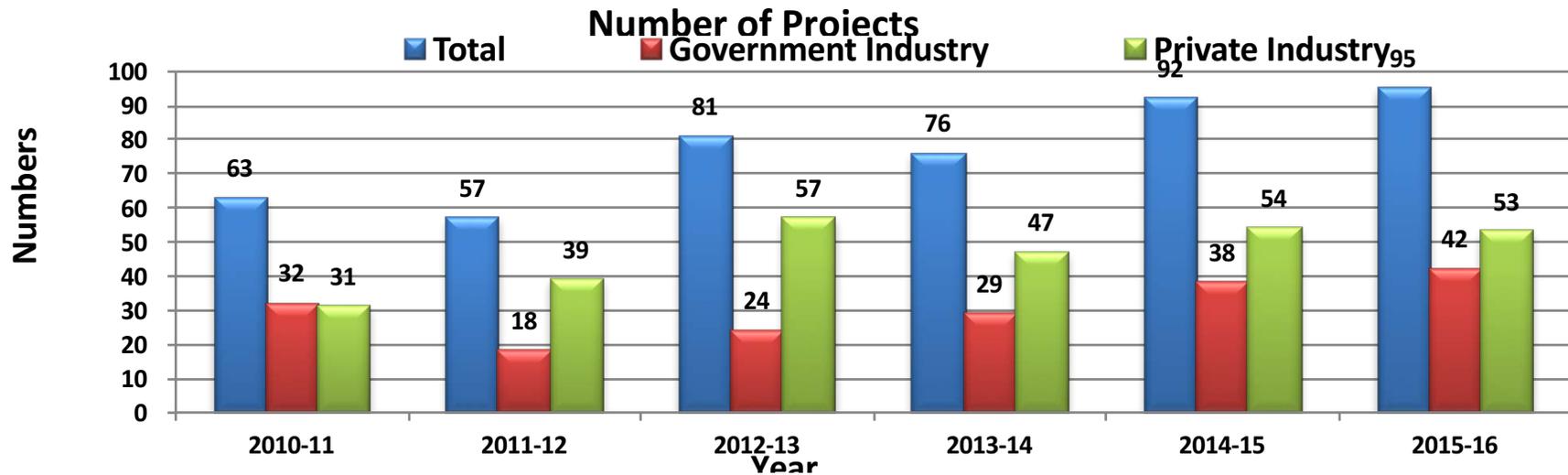


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A-I-S Collaboration Statistics

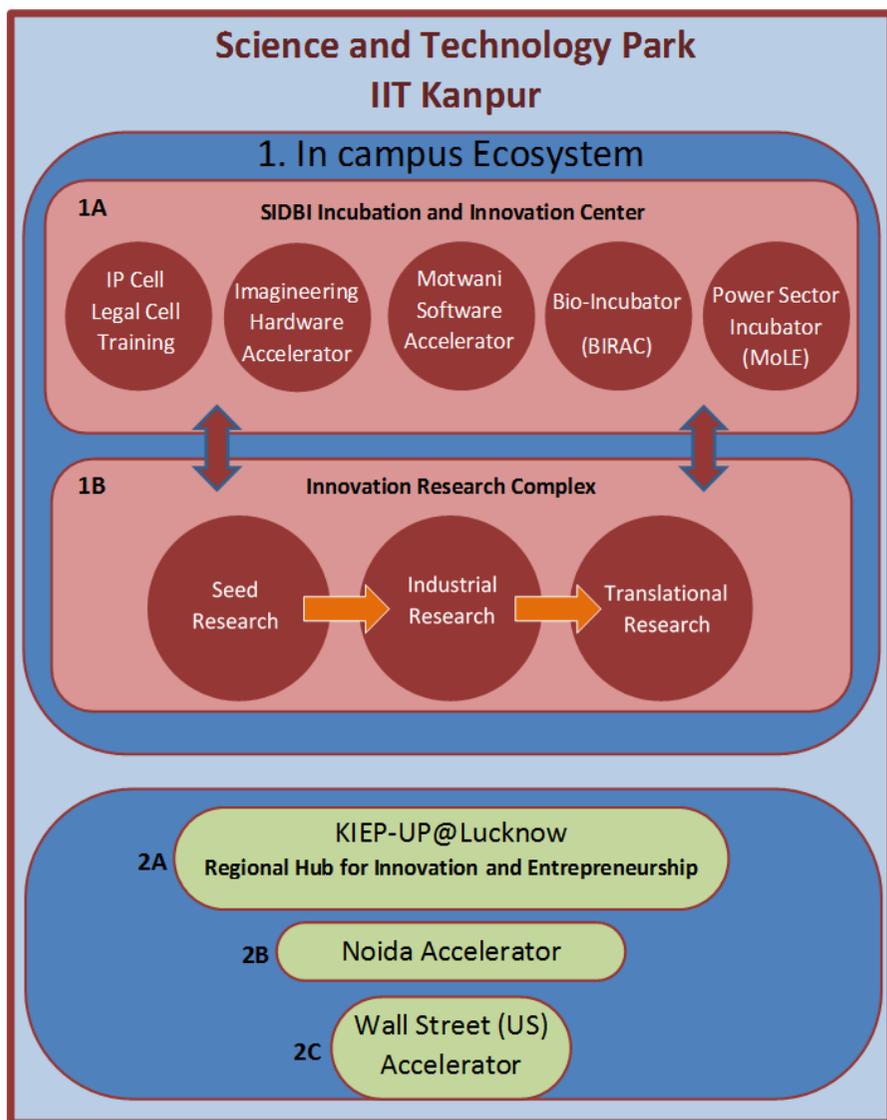


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A-I-S Future Trajectory



		Plot area	Status
→ IN-CAMPUS ECO-SYSTEM			
1A	SIDBI Innovation & Incubation Center <ul style="list-style-type: none"> Administrative Center (IP/Legal/Training) Incubatee offices and development center Hardware Accelerator - Imagineering laboratory (Tinkering/4-i/ Prototype) Motwani Software Accelerator Bio-incubator (BIRAC) Power Sector Incubator (MoLE) Incubatee residential area 	20 acres inside IIT Kanpur	Fully functional SIDBI Innovation and Incubation Center (SIIC) inside IIT Kanpur campus
1B	Innovation Research Complex <ul style="list-style-type: none"> Seed Research Industrial Research Translational Research and Incubation 	20 acres inside IIT Kanpur	Phase – 1 plan fully ready and approved by the board
→ OFF-CAMPUS ECO-SYSTEM			
2A	Regional Hub for Innovation and Entrepreneurship IEP-UP, Lucknow <ul style="list-style-type: none"> Administrative Center Entrepreneurship Center Manufacturing Support Center 	20 acres at Chak Ganjeria, Lucknow	In advanced stage of sanction from UP government
2B	Noida Accelerator <ul style="list-style-type: none"> Business Development Office Graduating Incubatee Offices Convention Center and Guest House 	5 acres in Sector 62, NOIDA	Land acquired and construction has already started
2C	Wall Street (US) Accelerator and Office	10 m ²	Rental Office



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Industrial Research Park

Inside IITK campus, we have proposed two wings:

- Industrial Research Complex (12000 m²)
- Translational Research Complex (10000 m²)



- Land identified → as per the master plan
- Board approved plan of industrial research complex

Facilities	Super built up area (m ²)
Industrial research spaces	8000
Wet/dry laboratory	2000
Meetings/ conference/offices	2000
Accommodation	3000
Common equipment/facilities	3000
Clean rooms/Services/Store/Parking	4000
TOTAL	22000 m²



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A-I-S The Future

Benefits of mutual interaction are clear!!



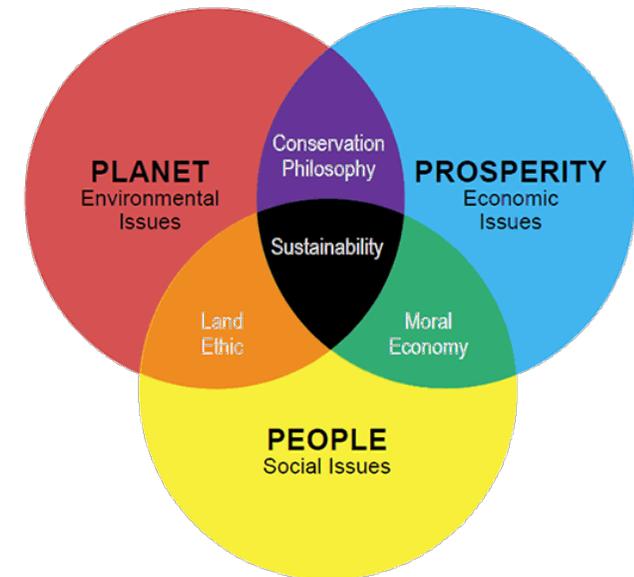
▶ How to enhance interaction?

▶ Translational research → commercialization



▶ Incubation program

▶ Industrial research parks



- **Economic prosperity**
 - Resource efficiency?
 - Sustainability?
 - Environmental protection?



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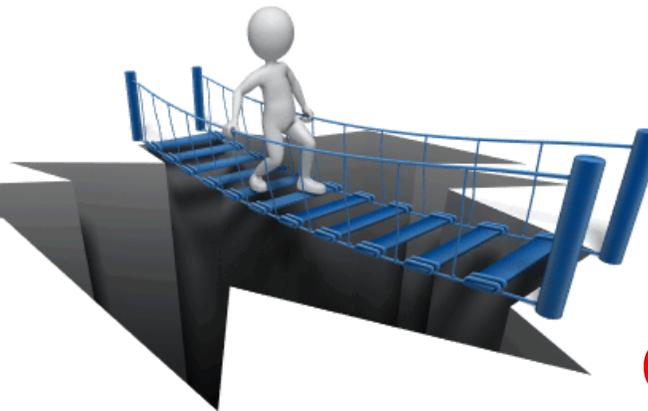
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A-I-S Insights

Nurturing innovation:

- **Fighting the mind-set**
- **Upstream mentoring – Downstream mentoring**
- **Scale up: Local → Remote**
- **Financial Self – Sustenance – beyond metros**
- **The Team**



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Achievements Highlights: Portfolio



Trident Analytical Systems	शब्दनागरी, Local Angel Funding
Whorl Engineering	Strategic Stake Walchand Industries
Weather Risk Management	Recipient of TePP funding, SIDBI Strategic Stake by ICICI Lombard Ford Foundation Grant
Curadev Pharma	Strategic Alliance with Roche
E-Spin Nano Technologies	Spirit of Manufacturing Award Rajeev Motwani Young Entrepreneurship
Aarsh Management	Positive CIO Review Strategic Alliance: CMC/Polaris/Infosys 2nd stage funding SIDBI Risk Capital
GeoKno India Limited	Recipient of ISBA award, Strategic Alliance with GMR India
Aurora Integrated Sys.	Funded by TATA Group
Cenogen Materials 24	Intel DST Award Received large private equity
Aarav UAV	Venture funding, Stage II



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Thank You

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