



All India Council for Technical Education



Ministry of Human Resource Development
Government of India



Confederation of Indian Industry

International Workshop on Industry-Academia Collaboration for Greater National Productivity & Competitiveness Hotel Lalit, Barakhamba Road; New Delhi; April 14-15, 2013

Industry-Academia Collaboration (Workshop on April 14th and 15th April 2013)

1. Background

Science-based innovations, technologies and engineering determine global competitiveness and productivity of nations. Academia and industry should engage in joint research to encourage innovation and competitiveness in the global economy. Universities need to take cognizance of the changing needs of private enterprise in planning new courses and industry should recognise that support for education is beneficial. Big gains can be had if academic knowledge is paired with the knowledge of the market.

In India, a number of initiatives for Academia-Industry linkages have over years yielded positive results in research, but, as these remain sporadic in nature India's share in world researchers persisted at about 2% as compared to 20% of the USA and China's and while the share of R&D investments of the USA was 32%, of Japan 13% and China 9%, it was only 2.2 % in India¹. Significantly, an analysis of the share in R&D shows that in India, the Government share is 75-80 %, the private sector's share is 20-25 %, and that of universities is 3%, while in OECD countries, the government share is 10 %, the share of the private sector is 69 %, the share of universities is 18% and of the non-profit organisations is 3%. As a share of GDP also, India's R&D spend is about 1% as against a target of at least four per cent if double digit GDP growth is to be achieved. Currently, global investment in R&D is \$1.2 trillion and significant share originates from the private sector through their collaborative research with academia. China has 300 research parks; and MIT has over 700 companies working with its faculty on projects of mutual interest.

2. Foregrounding the agenda of Academia-Industry collaboration to augment research and productivity

Clearly, there is an urgent need for Government, Academia and Industry jointly taking some concrete actions.

A number of committees have made several recommendations on this issue, significant among which were the National Knowledge Commission in 2008², the Kakodkar Committee Report³ in 2011 on IITs and the Narayan Murthy Report⁴ in 2012. All these reports emphasised enhancing academia-industry collaboration for augmenting research, innovation, employability and greater productivity, through measures such as the following:

- Greater curricular alignment of engineering education with employment opportunities
- Frequent dialogue between Academia and Industry through seminars and workshops
- Summer internships to enhance employability
- Adjunct faculty positions for industry professionals
- Executive M.Techs and part-time PhDs for Industry personnel
- Encouraging faculty focus on product development and industrial consultancy
- Industry R&D labs at research parks adjacent to educational institutes

¹ Source: UNESCO Institute of Statistics

² National Knowledge Commission, 2008

³ Kakodkar Committee Appointed by MHRD to Recommend Autonomy Measures to Facilitate IITs Scaling Greater Heights

⁴ The Narayan Murthy Committee on Corporate Participation in Higher Education



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3. Consultation Process

Consultation on March 5th, 2013. Against this background, the Ministry of Human Resource Development under the leadership of Hon'ble Minister Dr. M M Pallam Raju has put academia-industry collaborations as one of the top priorities for bringing comprehensive reforms in higher education. The Hon'ble minister chaired a meeting with Industry, Academia and Government representatives on March 5, 2013 to understand the issues, aspirations, challenges and successful models. This was a preliminary consultation among different stakeholders with the following objectives:

- a. To develop a common agenda for collaboration between Academia, Industry and Government
- b. To discuss possible operational strategies
- c. To delineate issues for a larger and more comprehensive consultation possibly with examples of international practices and models through a workshop on Academia-Industry-Government Collaboration on 15th April 2013

The 5th March workshop agreed that R&D investment in India could improve only through concerted and intensified collaborations between industry, academia and the Government, through diverse measures such as internships, research projects, research and training facilities, research parks etc. Employability quotient of graduates and post graduates was much below industry's expectations and industry needs to spend large amounts of money and time to train them before absorbing. Skill development has been one of the top priorities and sufficient amount of fund and institutional mechanisms were in place. The challenge is to effectively implement National Vocational Education Qualification Framework in close partnership with industry. And finally, there is an urgent need for a professional and sustainable institutional mechanism that facilitates industry-academia collaboration at all levels.

4. Industry –Academia workshop on April 15th, 2013

Following up on the March 5th consultation, a workshop has been scheduled on April 15th 2013 carrying forward the agenda of strengthening the collaboration between Academia, Industry And Government.

4.1 Three Task Forces will facilitate the discussion in the following three focus areas to come out with recommendations to scale up or leverage existing models and to roll out new models.

- a. **Research, Innovation and Entrepreneurship** (focusing on Manufacturing, Defence & Sustainable Development and Major National Goals Such as Social Development, Health and Water)
- b. **Skills and Employability** (focusing on Manufacturing & Services)
- c. **Institutional Mechanisms** (for collaboration between Industry and Academia)

Each Task Force will comprise experts from Industry, Academia and Government representatives with facilitators--one each from industry and institute.

4.2 The Task Force on Research, Innovation & Entrepreneurships will focus on critical sectors like manufacturing, defence and sustainability (water, healthcare, energy etc.) and will look into successful models of industry-academia collaborations in the areas of Industry's contract / collaborative research with academia; Industry's endowment to academia for research; Industry's research facility inside Institute's campus; Industry's research facility in Institute's research park; Industry's financial support to students for doctoral research; in incubating, mentoring and funding innovations / entrepreneurships etc. and come out with recommendations.



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4.3. The Task Force on Skills & Employability will look into successful models of industry-academia collaborations in the area of special training and skills imparted by industry to graduating / graduate students and also to school dropouts to cater to manufacturing and services sectors.

4.4 The Task Force on Institutional Mechanism will look into successful institutional models that effectively facilitate industry-academia collaborations in areas like research, innovation, entrepreneurship, skilling and employability development etc. including implementation of government programmes for forging linkages between industry and academia for mutual benefits.

Members of each Task Force will set up e-discussion groups to discuss till 10 April 2013 and prepare a draft recommendation by April 13, 2013.

2. An international workshop involving larger cross section of stakeholders will be held on April 15, 2013 where national and international successful models will be discussed in the focus areas and the Task Forces after their internal deliberations will present their recommendations.



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Composition of Task Forces

Task Force on Research, Innovation and Entrepreneurship <i>(Focus: Manufacturing Defense & Sustainable Development and Major National Goals Such as Social Development, Health and Water)</i>	Task Force on Skills & Employability <i>(Focus: Manufacturing & Services sectors)</i>	Task Force on Institutional Mechanisms for collaboration between Industry & Academia
<p><u>Industry Lead</u> Mr. Hari S Bhartia Co-Chairman & MD Jubilant Life Sciences Ltd</p> <p><u>Institution Lead</u> Dr. Ashok Jhunjunwala Department of Electrical Engg IIT Madras</p> <p><u>Members</u> Dr. V K Saraswat Director General DRDO</p> <p>Mr. K Venkataramanan Managing Director & CEO Larsen & Toubro Ltd</p> <p>Dr. Pawan Goenka President-Automotive Mahindra & Mahindra Ltd</p> <p>Mr. R Mukundan Managing Director Tata Chemicals Ltd</p> <p>Mr. Ashish Bharat Ram Managing Director SRF Ltd</p> <p>Mr. M S Unnikrishnan Managing Director & CEO Thermax Limited</p> <p>Dr. Naushad Forbes Director Forbes Marshal Limited</p>	<p><u>Industry Lead</u> Mr. K V Kamath Chairman, Infosys Limited & Non Ex Chairman, ICICI Bank</p> <p><u>Institution Lead</u> Mr. S Ramadorai Adviser to PM National Skills Council</p> <p><u>Members</u> Mr. B Prasada Rao Chairman & MD BHEL</p> <p>Mr. Dhruv M Sawhney Chairman & MD Triveni Engg & Industries Ltd</p> <p>Mr. Ravi Kant Vice-Chairman Tata Motors Ltd</p> <p>Mr. Kiran Karnik Nasscom</p> <p>Dr. A. C. Muthiah Chairman SPIC</p> <p>Dr. SS Mantha Chairman, AICTE</p> <p>Mr. Dilip Chenoy MD & CEO National Skills Development Corp</p>	<p><u>Industry Lead</u> Mr. R C Bhargava Chairman Maruti Suzuki India Ltd</p> <p><u>Institution Lead</u> Dr. Anil Kakodkar Chairman, BoG IIT Bombay</p> <p><u>Members</u> Mr. R S Pawar Founder & Chairman NIIT Group of Companies</p> <p>Mr. Venkatesh Valluri Chairman Ingersoll Rand India Ltd</p> <p>Mr. Deep Kapuria Chairman Hitech Group of Companies</p> <p>Dr. V Sumantran Vice-Chairman Ashok Leyland Ltd</p> <p>Prof. Arvind Gupta CEO and Scientific Director Mitacs Inc.</p> <p>Prof. Sujata Ramadorai University of British Columbia</p> <p>Mr. Pawan Agrawal Advisor, Higher Education Planning Commission</p>



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<u>Members</u>	<u>Members</u>	<u>Members</u>
<p>Mr. Satish K Kaura Chairman & MD Samtel Color Ltd</p>	<p>Mr Manish Sabharwal CEO Teamlease, India</p>	<p>Mr. Vinay Rai Adviser Rai Foundation</p>
<p>Prof. Devang Khakhar Director, IIT Bombay</p>	<p>Dr. Shubnum Singh Dean - Nursing, Allied Health, & Wellness Max Healthcare</p>	<p>Dr. Prahalada V-C, Defence Institute of Advanced Technology</p>
<p>Prof. U. B. Desai Director, IIT Hyderabad</p>	<p>Prof. Prem Kumar Kalra Director, IIT Jodhpur</p>	<p>Mr. Ajit Balakrishnan Chairman, IIM Calcutta</p>
<p>Prof. Indranil Manna Director, IIT Kanpur</p>	<p>Prof. I. K. Bhatt Director, MNIT, Jaipur</p>	<p>Prof. Pankaj Chandra Director, IIM Bangalore</p>
<p>Prof. Sudhir K Jain Director, IIT, Gandhinagar</p>		<p>Prof. R. K. Shevgaonkar Director, IIT Delhi</p>
<p>Prof. Rajeev Sangal Director, IIT BHU</p>		<p>Mr. Falguni Rajkumar Chairman, IIM Shillong</p>
		<p>Prof. Shailendra Mehta IIM Ahmedabad</p>
		<p>Mr. Srinu Koppulo</p>
		<p>Prof. Narendra Ahuja Ministry of Information Technology</p>
		<p>Mr. Sabyasachi Dasmohapatra CEO GITA</p>



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Programme

Day 1: 14 April, 2013 (Sunday) – Preparatory Sessions & Reception

1600-1900 Hrs	Parallel meetings of Task Forces Hall 1: Meeting of Task Force on Research, Innovation & Entrepreneurship Hall 2: Meeting of Task Force on Skills & Employability Hall 3: Meeting of Task Force on Institutional Mechanism
1900-1930 Hrs	Tea/Coffee Break
1930-2030 Hrs	Synthesizing Meeting of all the Task Forces together
2030 Hrs	Dinner
2200 Hrs	Close of day 1



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Day 2: 15 April, 2013 (Monday) – Public Session

0830-0930 Hrs	Registration	
0930-1025 Hrs	Opening Session	
0930-0935 Hrs	Welcome Address	Mr. Ashok Thakur Secretary Ministry of Human Resource Development
0935-0950 Hrs	Theme Address Academia-Industry Collaboration for Addressing National Goals	Dr. M M Pallam Raju Union Minister Human Resource Development
0950-1005 Hrs	Academia-Industry Collaboration for Sustainable Development	Mr. S Gopalakrishnan President Designate, Confederation of Indian Industry & Executive Co-Chairman, Infosys Limited
1005-1025Hrs	Academia-Industry Collaboration	Sir Mike Gregory Head, Manufacturing and Management Division University Engineering Department Institute of Manufacturing University of Cambridge
1025-1050		Prof. Peter Hodgson Australia Laureate Fellow Alfred Deakin Professor and Director, Institute for Frontier Materials Deakin University, Australia
1050-1400 Hrs	Case Studies of Successful models of Industry-Academia Collaborations	
	a) Research, Innovation & Entrepreneurship	
1050-1110 Hrs		Dr. Ashok Jhunjunwala IIT-Madras Research Park
1110-1130 Hrs		Dr. Naushad Forbes Director, Forbes Marshal Limited
1130-1150		Mr. Shlomo Nimrodi Chief Executive Officer Ramat (Commercializing arm of Tel Aviv University, Israel)
1150-1200 Hrs	Tea/Coffee Break	



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b) Skills & Employability

1200-1220 Hrs

Mr. Jay Notay
Dean, School of Transportation
British Columbia Institute of Technology

1220-1240 Hrs

Mr. S Mahalingam
CFO and Executive Director
Tata Consultancy Services

1240-1300 Hrs

Prof. V G Das
Director
Dayalbagh Education Institute

c) Institutional Mechanism

1300-1320 Hrs

Prof. Robert Hendrickson
Professor of Education
Penn State University, USA

1320-1340 Hrs

Dr. Sujatha Ramdorai
Professor, University of British Columbia

1340-1400 Hrs

Mr. Sabyasachi Dasmohapatra
CEO, GITA

1400-1445 Hrs

Lunch



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1445 -1830 Hrs	Recommendations of Task Forces; Open House Discussion & Valedictory Address	
1445 -1505 Hrs	Public, Industry and Academic Collaborations	Prof. Rajendra Srivastava Provost and Deputy President Singapore Management University Singapore
1505 -1550 Hrs	Recommendations on Institutional Mechanism and Open House Discussion	Mr. R C Bhargava Chairman Maruti Suzuki India Ltd & Dr. Anil Kakodkar Chairman, Board of Governors IIT Bombay
1550-1610 Hrs	Industrial Doctoral Training Centres, UK	Dr. Anup Patel Manager, Engineering Centre Efficient Fossil Energy Technologies Nottingham, UK
1610-1655 Hrs	Recommendations on Research, Innovation & Entrepreneurship and Open House Discussion	Mr. Hari S Bhartia Co-Chairman & MD Jubilant Life Sciences Ltd & Dr. Ashok Jhunjunwala Department of Electrical Engineering IIT Madras
1655-1740 Hrs	Recommendations on Skills & Employability and Open House Discussion	Mr. K V Kamath Chairman, Infosys Limited & Non Ex Chairman, ICICI Bank & Mr. S Ramadorai Adviser to PM National Skills Council
1740-1815 Hrs	Concluding Session Valedictory Address & Launch of Key Initiatives	Dr. M M Pallam Raju Union Minister Human Resource Development
1815-1830 Hrs	Vote of Thanks & Close (Followed by Cocktails)	