Vision of Japan – India Academic Collaborations

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IIT Kanpur

Then...

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Now...

What is the Indian Context? - I

- **India has the largest technical education system in the world (but quality is an issue, poor accreditation process)**
- **Multi-layer structure – IITs, IIITs, NITs, GECs, PECs**
- **1800+ institutions and growing**
- **India graduates 370,000 engineering graduates per year as against 270,00 for China and 72,000 for USA**

What is the Indian Context? - II

- **Shortage and poor quality of faculty**
- **Very little in terms of technology development and creations of IPRs**
- **One dimensional education as compared to n-dimensional development of mind**
- **Infrastructure suitable for effective delivery of knowledge and conducive for creation of knowledge**
- **Indian education has to be evaluated in the global context.**

What Japan – India initiative should NOT do

- Do not attempt to take on the whole system, seed some novel ideas and show the direction of future course of action
- Do not address the issues of S&T, address the issues of education and technology development via research
- Do not create non-sustainable initiatives
- Do not address issues of school education and other sub-systems

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India - Japan Initiatives

- Bilateral cooperation in S&T through Indo-Japan Science Council under the guidance of DST and JSPS (Japan Society for Promotion of Sciences)
  - Six areas of research including Manufacturing Sciences
- Collaboration with PDPM IIITDM Jabalpur for development of curriculum and design studio
- Visionary Leaders for Manufacturing Programme in cooperation with NMCC, MHRD, IIT Kanpur, IIM Calcutta, IIT Madras, CII and JICA
- Language initiative for learning Japanese at CBSE level

India – Japan Science Council

- JSPS and DST have established IJSC 15 years back
- Six areas of cooperation in science and engineering
- Manufacturing Science is one area in engineering
- Focus of collaboration is on nano-manufacturing, manufacturing management, precision manufacturing, composites
- Prof M Kiuchi and Prof S G Dhande are the conveners
- Every year, a joint workshop is organized
- Sponsored projects have been awarded for collaborative work
- Industrial visits are arranged during the workshop
- Visits of scientists and students are also funded
- Next workshop is scheduled in January 2008 at Tokyo

Visionary Leaders for Manufacturing Program

- Visionary Leaders in Manufacturing Program – 4 initiatives
- IIT – IIM come together for an academic initiative
- Leadership of Prof Shiba, Distinguished Honorary Professor at IIT Kanpur
- Professors from Japan to train on manufacturing management
- Industrial visit to Japan for two weeks
- Program approval from MHRD, NMCC
- Program participation from CII
- Active support from JICA
- Program Activity B started on August 27, 2007
- Program Activity A started in September 2007

What is the Context of VLFM ? - I

- **India is emerging as a manufacturing hub along with its domination in Information Technology and Services sectors**
- **India has the largest technical education system in the world (but quality is an issue, poor accreditation process)**
- **Manufacturing management is the key element required to improve the competitiveness of manufacturing industries**
- **National Manufacturing Competitiveness Council (NMCC) has been established**

What is Context of VLFM ? - II

- **NMCC in consultation with CII and MHRD has identified the activities of training and education as the key investment strategy**
- **CII and NMCC along with IIT Kanpur discussed with Prof Shoji Shiba the possibility of a program on Visionary Leaders for Manufacturing along the lines of the program of MIT- Leaders for Manufacturing started in 1988**
- **CII invited Prof Shiba as consultant on Breakthrough Management**
- **IIT Kanpur invited Prof Shiba as Distinguished Honorary Professor**

Four Activities of VLFM Program - I

- Activity A
  - One year program
  - Targeted for Senior Managers
  - CII shall conduct it
  - 7 Modules, each module of 2 weeks
  - 6 weeks gap between successive modules
  - Program started in September 2007
  - About 30 participants have been admitted
  - Program is being run in CII Center in Mumbai

Four Activities of VLFM Program - II

- Activity B
  - One year program
  - Targeted for young managers with experience of 5 to 8 years
  - IIT Kanpur, IIM Calcutta and IIT Madras shall conduct
  - First four months in IIM-C, next 2 months in IIT Kanpur followed by next 2 months in IIT Madras, this will be followed by a 2 week industrial tour of Japan and a 10-week industrial project wrapping up with a one month closure session at IIM Calcutta
  - Post-graduate Executive Program (PG-PEX)
  - Program started in August 2007
  - About 30 participants have been admitted
  - Program is being executed by MHRD Task Force

Four Activities of VLFM Program - III

- Activity C
  - One week program
  - Targeted for Managing Directors / Chairmen
  - NMCC shall conduct it
  - Program shall start in 2008
  - About 20 participants are expected
  - Program will be run in New Delhi
  - CII, IITs, IIMs will also participate

Four Activities of VLFM Program - IV

- Activity D
  - Two month program
  - Targeted for small scale industries
  - IIM Calcutta shall conduct it
  - Program shall start in 2008
  - About 50 participants shall be admitted
  - CII, IIT Kanpur, IIT Madras shall also participate
  - Ministry of Small Scale Industry will support

PDPM IIITDM Jabalpur

- Japan holds a leading position in the field of design and manufacturing
- India is emerging as a resource country in software and information technology
- IIITs are training manpower in the field of IT as well as one domain of knowledge – design and manufacturing
- Hence, IIIT Jabalpur project became a common agenda for India – Japan collaboration
- Five institutions from Japan are participating in establishing a novel academic program in IIIT Jabalpur
- Program is supported by MHRD and JICA

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What is the paradigm for 2007?

- **Creating the workforce for the education system**
- **Development of faculty who will develop other faculty members**
- **Development of creative minds**
- **Development of engineering education using information sciences**
- **Establishment and usage of modern tools of distance education using Internet.**

Thrust Areas

- Energy Technologies
- Earthquake Engineering
- Nanoscience and Nanotechnology
- MEMS – Micro Electro Mechanical Systems
- Natural Language Processing
- Biometrics and Cyber Security
- Environmental Science & Engineering
- Cognitive Radio and Wireless Networks
- VLSI, RFID and Devices

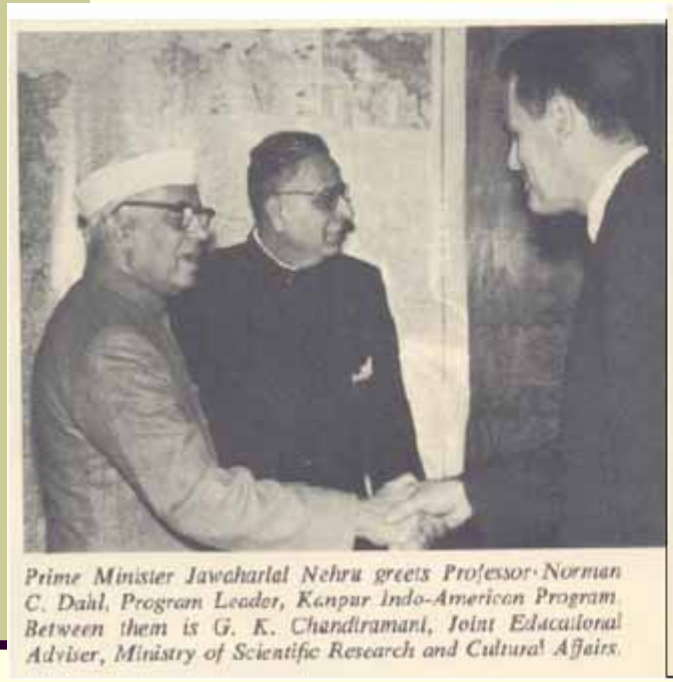
India – Japan Education Council

- A platform for collaboration in education is desirable
- Government of India and Government of Japan can provide funding for such a council
- Academic collaboration should be focused on research
- IJEC will foster collaboration between several academic institutions
- IJEC will complement the present activities of IJSC

Implementation of IJEC

- A task force is needed to formulate the detailed proposal of Indo Japan Education Council
- The proposal will be considered by Government of India and Government of Japan
- IJEC should hold some events to take input from academic community
- A calendar of events can be drawn up and administered
- IJEC will be a facilitator and not a funding agency

KIAP (1962-1972)



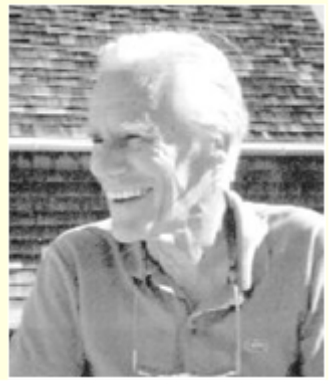
Prime Minister Jawaharlal Nehru greets Professor Norman C. Dahl, Program Leader, Kanpur Indo-American Program. Between them is G. K. Chandramani, Joint Educational Adviser, Ministry of Scientific Research and Cultural Affairs.

MEETING AT KANPUR. From left to right: Dr. Kelkar; John K. Galbraith, United States Ambassador to India; Professor Dahl; John Fobes, Deputy Director of the A.I.D. Mission, New Dehli; and Dr. Muthana, Deputy Director of the Indian Institute of Technology.

KIAP (1962-1972)

Appearing in foreground with Steering Committee members in New Delhi are: Dr. Kabir, Minister of Scientific Research and Cultural Affairs; the Minister of Education for Andhra Pradesh; Dr. P. K. Kelkar, Director of the Indian Institute of Technology at Kanpur, and Mr. G. K. Chandiramani, Joint Educational Adviser and ex-officio Joint Secretary, Ministry of Scientific Research and Cultural Affairs. From l. to r., Prof. Norman C. Dahl (M.I.T.) Program Leader at Kanpur; Prof. Arthur H. Benade (Case Institute of Technology); Dr. Kabir; Prof. Robert S. Green (Ohio State University); Prof. Erman A. Pearson (University of California at Berkeley); the Minister of Education at Andhra Pradesh; Prof. Robert M. Drake, Jr. (Princeton); Mr. Shepherd Brooks (ESI); Dr. Kelkar; Dr. Benedict Ray (USAID, New Delhi); Dr. Chandiramani.

Reminiscences



Concluding Remarks

- Establish a core team of “passionate” movers
- Hold “retreats” of like-minded faculty members
- Develop a methodology of education and research that is suitable and sustainable
- Sensitize the young faculty members from India for a year and let them loose back home
- Develop a strategy of multiplier effect to other institutions

Thank You