

GTU INNOVATION COUNCIL

moving towards establishing

25 INNOVATION SANKULS



Report

16th April 2011

Gujarat Technological University

(<http://www.gtu.ac.in/>)

2nd Floor, ACPC Building, L. D. College of Engineering Campus,

Navrangpura, Ahmedabad -380 015

Phone: +91-79-2630 0499; +91-79-2630 0599; +91-79-2630 0699

Fax: +91-79-4020 0644

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A New Model of Collaboration for Innovation

While the first objective of the Council is to nurture creativity and innovation within the University community, it is designed to act as a catalyst of change for the whole of the society. First, the Council is being set up as a collaboration between the technology community in the University and the corresponding community in the society. Secondly the very first task, set before the University community is to create a bridge, between the learning community at the University and the outside world, through a specific time-bound job, which is a requirement in the academic programs of the University. Thus from the beginning, GTU Innovation Council will not only seek to imbue the spirit of innovation within the ivory towers of the University institutions, it proposes to create an environment of thinking about innovation in the societal systems so that the systems can break themselves free from the cobwebs of past and move towards becoming creative and ever-new entities.

To establish a close and continuing inter-action between the industry and the students and faculty members of Gujarat Technological University, GTU has designed an action plan for creation of 25 Innovation Sankuls in Gujarat. (166 industry clusters+ 495 colleges of GTU have been divided into 25 innovation clusters of GTU Colleges and industries, called Innovation Sankuls). population of 250,000 in all the undergraduate and postgraduate courses like Engineering, Management, pharmacy, MCA and Diploma and 10,000 plus faculty members in GTU.

When in three years, every one of its more than 400,000 students and more than 20,000 faculty members are out in the field with the requirement that an innovative Final Year project is to be completed and put on the TechPedia, when there will be no way to hide the work, when good work will be awarded year after year, when thousands of small and big industries get the opportunity of thinking, jointly with young minds and faculty members about continuous improvements in their products & processes and when the law students work to make patent process and IPR processes easy, an entirely new environment of innovations will be created.

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Management Architecture:

The GTU Innovation Council: chaired by the Vice Chancellor. The Council committee (CC) will include Professor Anil Gupta, Techpedia, Chairs of State level Chambers and Vertical-associations, ASSOCHAM, GCCI and other associations, government officers, Registrar of GTU and others.

An Innovation Sankul: A Sankul is managed by two Co-Chairmen: one from a GTU College and the other from the industry, a Secretary and a Joint Secretary: an industry engineer and a student; the Sankul Committee (SC) with representations from Colleges, District Industry Officers, industries and prominent citizens. Each Sankul have been created taking about 20 colleges from multiple fields for developing an inclusive innovation ecosystem.

Udisha (Innovation Club) at each GTU College: An Udisha Executive Committee (EC) at each GTU College will co-ordinate with its Sankul.

Work In progress:

- Under this project 398 Udisha Clubs have been set up till today. The target is 495 by 30th April 2011.
- 25 Innovation Sankuls are at various stages of formation. This job will be completed by 30th April 2011.
- About a thousand students have gone on Shodh Yatras in Rajkot, Ahmedabad, Vadodara and Ahwa. Such Shodhyatras are conducted at the week-ends.
- About 30 thousand students are being mapped to industries and they will all be going to industries in June and July (after their pre-Final Year exams in May).

Objectives:

- To inculcate among students and faculty a spirit of enquiry and confidence in their ability as innovators
- To encourage the students to work with industries and businesses and R&D institutions with the help of Techpedia
- To facilitate innovations by MSMEs through support by GTU students and faculties
- To create appropriate eco-systems and environment to foster innovation by identifying the problems, designing and developing the product or improving the business / industrial processes, mentoring students/researchers during the project and evaluation of the project.

Report on the meeting of 16th April 2011:

The three Innovation Sankuls at Ahmedabad had been planned at a meeting on 3rd March 2011. On 16th April, a meeting for working out of 18 more Innovation Sankuls in various parts of Gujarat was organized. To the meeting were invited the Principals and Directors of some of the Colleges along with the Managing Trustees of the Colleges. The managing trustees of colleges were also key participant in this meeting along with Co-Chairpersons of the Sankuls. The meeting was chaired by the Honorable VC, GTU.

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The meeting of 16th April was initiated with a welcome address by Honorable VC, Prof Akshai Agrawal. He discussed the purpose of creation of the GTU Innovation Council. He outlined the action agenda for the Council for the next three months. A presentation on GTU Innovation Council was presented to the Sankul authorities by Mr. Hiranmay Mahanta from Techpedia. The stories of achievements and successes during the last six weeks of work of one of the Innovation Sankuls at Ahmedabad were narrated by Prof M.R.Patel (Co-Chairperson, Academic-Naroda Sankul). He presented both qualitative and quantitative aspects of achievements during the industrial shodh yatras carried out at various industry clusters in and outside the Sankul. An open discussion session involving the Sankul authorities and Honorable VC, GTU brought out a methodology, which can help develop a progressive knowledge ecosystem at GTU based on innovation. Prof K.N.Mistry, Prof J.V. Desai, Prof M.R.Patel, Dr S.S.Pancholi and other principals of respective Sankuls shared some significant ideas for further strengthening the innovation management system and for bringing each Udisha club at every GTU college into the main loop of action agenda. Prof Ved Vyas Dwivedi stressed on harnessing the technical potential of younger students even at very 1st year level and shared some exciting success stories based on his experiments at Junagarh. The managing trustees from various institutes like SCET, Surat, Parul Institute of Engineering and Technologies shared some critical thoughts which will ensure the productivity of each Innovation Sankul and help bring industries and academia a step closer. A detailed discussion was held on involving pharmacy student in solving the real life issues of related industry clusters. Prof Akshai Agarwal shared his thoughts on creating clusters of MBAs and associated disciplines by bringing service industries and IT/ITES industries into the loop. Mr Gandhi from SCET (Innovation Sankul at Surat) suggested the creation of new motivational factors for both students and faculties. These can create an environment of awareness on IPR so that the dream of bringing Laxmi and Saraswati together as envisaged by Padmabhushan R.A.Mashelkar (President Global Research Alliance and former DG, CSIR) may be realized. Every participant through this discussion agreed on creating a mindset for

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innovation by informing each of the GTU student and faculty about the objectives and action agenda of the Council at the college level. There was a consensus for making an effort for better utilizing the summer of innovation agenda and linking students to industries through industrial shodh yatras to obtain the Industry Defined Problems. IDPs will be evaluated in August when the first semester of Final Year starts. The best 1000 IDPs will be given awards by GTU. It is expected that the professionals from the industries will come forward to both mentor and nurture the creativity of students during both the semesters of the Final Year. GTU will assist the best student/faculty projects for protecting their IPR and will help the students use the existing incubators and venture capital firms for converting their projects to marketable products.

At the meeting, 18 Principals/ Directors of GTU Colleges, were appointed as Co-Chairpersons (academic) of the 18 Innovation Sankuls. Prof G. P. Vadodaria, Registrar GTU gave away the letters to various Sankul Co-Chairpersons (Academic). It was decided that the Chairperson (academic) of each Innovation Sankul will nominate five directors (academic) from each of the five domain: MBA, Pharmacy, Engineering, Diploma-Engineering and MCA, very soon. GTU will nominate a Co-Chairperson from the industry zone in each Sankul to assist the process of forging industry-academia relationships.

It was decided that the following meetings for disseminating the idea of GTU Innovation Council may be arranged by each Sankul without any delay: (i) A meeting of all the College Principals/ Directors in the Sankul: every College, which has not yet formed the Udisha Club will be asked to form it without any delay. (ii) A meeting of all its faculty members by every College Principal/ Director (iii) A meeting of the entire Sankul Committee consisting of all the Principals/ Directors of the Colleges in the Sankul and the industry personnel (iv) A meeting of all the Udisha Clubs of the Sankul to be hosted by the Co-Chairperson (industry zone). It was also decided that the information about software industries in the region of the Sankul will be collected by the two Chairpersons and sent to GTU. Moreover the two chairpersons will take steps to bring the software industries into the fold of the Sankul.

In addition at the meeting of 16th April was discussed the design of a roadmap for developing innovation culture in both industry and academia. It was decided that by the end of May, through shodh yatras or otherwise, all the pre-Final Year students will be mapped to some industry so that during June and July the students can all visit and study the processes at the industries and develop their plans for the Final Year project anchored in improving some product or process in some industry.

Prof M.R.Patel gave the concluding remarks and a vote of thanks.

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1. Vadodara - 1: appointed on 16th April 2011
2. Vadodara- 2: appointed on 16th April 2011
Co-Chairperson (Academic): Dr.Vilin P Parekh
3. VV Nagar-1: appointed on 16th April 2011
Co-Chairperson (Academic): Dr.V N Kamat
4. VV Nagar- 2: appointed on 16th April 2011
Co-Chairperson (Academic): Dr.F S Umrigar
5. Godhra: : appointed on 16th April 2011
Co-Chairperson (Academic): Dr.Bharat B Mistry
6. Ankeleshwar – Bharuch: : appointed on 16th April 2011
Co-Chairperson (Academic): Dr. J M Patel
7. Junagadh: : appointed on 16th April 2011
Co-Chairperson (Academic): Dr. Ved Vyas Dwivedi
8. Kutchh: appointed on 16th April 2011
Co-Chairperson (Academic): Prof. N G Hiranandani
9. Valsad-Vapi: appointed on 16th April 2011
Co-Chairperson (Academic): Sh. N M Patel
10. Navsari: appointed on 16th April 2011
Co-Chairperson (Academic):
11. Mahesana: appointed on 16th April 2011
Co-Chairperson (Academic): Dr.Prahlad Kulkarni
12. Himmatnagar: appointed on 16th April 2011
Co-Chairperson (Academic): Dr.Natavarlal M Patel
13. Chhatral : appointed on 16th April 2011
Co-Chairperson (Academic): Prof. M M Patel
14. Jamnagar: appointed on 16th April 2011
Co-Chairperson (Academic): Prof. Siddharth B Jadeja
15. Surendranagar: appointed on 16th April 2011
Co-Chairperson (Academic): Dr.Gopal R Kulkarni

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16. Rajkot-1 (Shaper Veraval) : appointed on 16th April 2011
Co-Chairperson (Academic): Dr. J V Desai
17. Rajkot-2 (Aji industrial belt) : appointed on 16th April 2011
Co-Chairperson (Academic): Dr.R B Jadeja
18. Rajkot-3 (Metoda GIDC) : appointed on 16th April 2011
Co-Chairperson (Academic): Dr.Sachin P Parikh
19. Surat: appointed on 16th April 2011
Co-Chairperson (Academic): Dr. K N Mistry
20. Morbi: appointed on 16th April 2011
Co-Chairperson (Academic): Prof. P C Vasani
21. Ahmedabad- Naroda: appointed on 3rd March 2011
Co-Chairperson (Academic): Professor M.R.Patel; Co-Chairperson (Industry): Sh. Sailesh Patwari
22. Ahmedabad- Vatva: appointed on 3rd March 2011
Co-Chairperson (Academic): Professor M.N.Patel; Co-Chairperson (Industry): Sh. Archit Shah
23. Ahmedabad- Gandhinagar: appointed on 3rd March 2011
Co-Chairperson (Academic): Professor J.V.Dave
24. Bhavnagar
25. Patan

Unique features of GTU Innovation council

- **Creating User Defined Innovation Eco-system-** To create value for the research work, that has already been done, and the research which is under process at GTU, a User defined innovation ecosystem has been designed. Students and faculties at GTU are now defining the user's need (User: industry, society, business) through Industrial Shodh Yatras which will be converted to a final year project /thesis in UG, PG, PhD level at GTU from July 2011.

Around 40,000 projects will be attempted based on real industry floor issues at GTU and even 1% success rate will deliver a few hundred solutions to MSMEs (Micro, Small & Medium Enterprises) every year.

- **Mapping of Industrial Needs and Academic research-** All GTU research works in UG and PG level are now being scouted from all colleges and are being put together at www.techpedia.in. This will map the mind of 1 lac technical students every year and innovation quotient of the university will go up in a single stroke. By scouting the IDPs (industry defined projects) from the floors of MSMEs, GTU students and faculties will map the industrial needs in 166 industry clusters of Gujarat from all the engineering disciplines.
- **Democratizing innovation management process-** To ensure the active participation of each student of GTU in various stages, GTU Innovation Council has devised a 3-stage system by creating GTU Sectorial Council, GTU Innovation Sankuls/Clusters and Udisha (Innovation) Clubs. 398 Innovation Clubs (Udisha) have already been established in GTU colleges by now and by 30th April 2011, 495 innovation clubs will be institutionalized in the entire GTU system. An udisha club consists of students and faculties of each stream of engineering. Sectorial Council at University has all vertical industry association representatives, who will take care of specific branch of engineering and technology in innovation clusters/Sankuls.
- **Industry-Academia cluster development involving GIDCs and GTU colleges-** Involving GTU colleges and MSME clusters, 25 GTU Innovation Sankuls are being set up in various parts of Gujarat. Every Innovation Sankul will have 18-25 colleges of engineering / MBA / pharmacy / polytechnic / MCA and a thousand MSMEs.

Some industrial clusters have been created to address the need of specific sectorial industries in state. However every technology college caters to a broad spectrum of industries and businesses. Hence in case of such clusters, the students of more than one Sankul may be associated.

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- **Creating sustainable motivation for students and researchers** - GTU will reward 2 credits in its academic system to define the real floor issues (Industry defined projects, IDPs) of MSMEs (Micro, small and medium enterprises) of the State. Best 1000 problem proposals which will be submitted to University in August after industrial Shodh Yatra in the summer will be supported by the university to drive the ideas to product format. Four academic credits will be rewarded for attempting to solve these IDPs (industry defined projects) in the final year of GTU students.
- **Developing relay model of innovation and student entrepreneurship module development**- Techpedia and GTU will document the progress of all research works at GTU for every industry defined project in real time. This will make it possible to crack the problem through a few cycles of attempts of research. Some set of students will be able to convert the raw IDPs (MSME industry problems) to products or solutions. GTU will support the best solutions to reach a product level conceptualization. Students will be encouraged to develop entrepreneurship at both the UG as well as the PG level. As a pilot project, some UG students were able to successfully solve some IDPs during august –December 2010. This proved that our students have the talent to be able to do what they have not yet been challenged to do. GTU Innovation Council will foster innovation fueled student enterprise modules and a few dozen student startups can certainly be realized at the end of the academic year 2011-12.
- **Emphasis on process innovation** – For the very 1st time GTU Innovation Council will not only focus on the desired production solution for industries but it is also emphasizing on documenting the best ways to succeed in specific type of research work and to note down the ways which increase the time cycle of developing solutions in corresponding research areas. Multiple teams of students and faculties at multiple places will attempt similar industry problems to develop a model of collaborative research and product designing in innovative ways. This will reduce the time cycle of developing innovative products and processes for industries.
- **Socializing Technologies**- GTU Innovation Council is not only addressing the floor issue of industries but also scouting and documenting the socio-technical issues of tribal people and the most backward districts of the State like Dang. Through Shodh Yatras, GTU students are interacting with the rural and tribal people to map their socio-technical needs and converting them as research projects like designing low cost solar application for tribal areas and designing machines to process Chironji seeds in Dang districts.
- **Protecting IPR, Intellectual property rights and bringing Saraswati and Laxmi together (promoting knowledge economy along with innovations.)**-GTU Innovation

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Council will help the best thesis/projects attempted by students and faculties to get promoted and the University will help them in protecting their intellectual property rights(IPR) so that research will lead to sustainable knowledge economy with proper credit protection for the innovators. Awareness will be created among students and faculties about IPR issues to increase the efficiency of the system at each Innovation Sankul and Udisha Club.

- **Promoting Frugal/Gandhian Innovations-** In an attempt to promote the concept of Gandhian engineering at university level in the state, Techpedia.in, in association with Gujarat Technological University (GTU), has initiated one of its kind of award to honour the best cost effective innovations at academic level that could benefit the masses. The categories for the awards have been instituted after the 32 engineering disciplines offered at GTU. Two awards will be given in each category of undergraduate, post-graduate and diploma courses. The awards will encourage and support students and faculty to design cost-effective and eco-friendly products and services for the larger section of society. The innovators will be motivated to put their efforts together in socializing technologies. Students and researchers at GTU will not only innovate to create value for money but also to create value for many. The innovation clubs will streamline the attempts aimed at creating more from less for more and more.
- **Harnessing the numerous months of efforts of research for productive innovation creation-** GTU students are putting some 10 months of effort in their final year in attempting to solve projects as a part of the curriculum. Around 1 lac students while putting 10 months of effort per year constitute nearly 1 million human months of efforts. Through this process GTU Innovation Council will effectively harness the students' inputs guided by some 15,000 faculties at GTU in a collaborative environment to create a sustainable knowledge ecosystem in a period of the coming 3 years with a "feel the difference approach".
- **Exchanging mentors from industry and academia-** GTU innovation Sankuls will exchange floor engineers from various MSMEs with corresponding faculties of particular stream which will further lead to design a road map in academia for a need based evolution. Students will get a practical insight and feedbacks from industry floors. This will enable them in blending their thoughts with proper orientation to adapt innovative approaches in solving real life issues.