



Report to the People

SECOND YEAR



NATIONAL INNOVATION COUNCIL
GOVERNMENT OF INDIA
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Foreword

Innovation is the engine that is driving the world around us: it finds solutions where they do not exist, it challenges and pushes conventional norms, it unlocks growth and development, and it enables individuals and communities to aspire and achieve more.

As a cultural ethos, innovation has been inextricably linked to the Indian system. We were the pioneers of many important concepts in the world and were leaders in knowledge creation. However, as a nation of a billion people, with a burgeoning young population of 550 million below the age of 25, we have not been able to harness or strengthen our innovation capabilities effectively to meet basic human needs related to poverty, hunger, energy and environment, and create new structures for sharing benefits. It is time for us to unleash the latent innovative potential of our people to move towards the next generation of development which not only enables us to envision new possibilities, but also allows many more people to partake in this growth.

In this context, the National Innovation Council (NInC) was set up by the Honourable Prime Minister of India to lay a roadmap for transforming the country into an innovation nation, with a focus on inclusive growth. In keeping with the Government's commitment of turning the next decade into a 'Decade of Innovation', we are delighted to present the second annual 'Report to the People' 2012 of the National Innovation Council which highlights the activities and initiatives we have undertaken to strengthen the innovation eco system in the country. The Report builds on our previous work and details our new initiatives in the past year.

The National Innovation Council is focused on encouraging and facilitating the creation of an **Indian Model of Innovation** by looking at five key parameters: Platform, Inclusion, Eco system, Drivers and Discourse. The aim is to redefine innovation to go beyond formal R&D parameters, and look at it as a broader concept that breaks sectoral silos and moves beyond a high-tech, product-based approach to include organisational, process and service innovation. The core idea is to innovate to produce affordable and qualitative solutions that address the needs of people at the Bottom of the Pyramid, eliminate disparity and focus on an inclusive growth model. NInC's initiatives are also aimed at fostering an innovation eco system across domains and sectors to strengthen entrepreneurship and growth, to facilitate the birth of new ideas and enhance collaboration. While conceptualising these initiatives, the key drivers will be parameters of sustainability, affordability, durability, quality, global competitiveness and local needs. Finally, through its various initiatives, NInC will aim to expand the space for disruptive thinking, dialogue and discourse on innovation.

We also want to be mindful that our model of development and innovation must tread its own path that meets India's unique needs and challenges and is geared towards inclusion, affordability, scalability and sustainability. Our efforts at NInC have been aimed at developing an inclusive innovation strategy geared towards creating 'more from less for more'. India needs more 'frugal, distributed, affordable' innovation that produces more 'frugal cost' products and services that are affordable by people at low levels of income without compromising the efficiency, and quality of such products. This pervasive model of innovation for/of and by the people can truly empower our nation and make people stakeholders in wealth creation. Further, globally, environmental constraints around climate, energy, water and other resources will call for more frugal models of production and consumption. We feel that the Indian approach of inclusive innovation can also emerge as a model for the world to emulate.

India is also uniquely poised to reap the advantages of unprecedented connectivity. Mobile phones and the broadband plans of the Government will alter the technological landscape of the country. These new technology platforms will have a massive impact on organisational structures, delivery models and business processes, where innovation will be critical. We as a nation must be ready for this new wave of innovations.

In the past year NInC has been working on giving shape to some of its core ideas with a focus on implementation. We are in the final stages of launching the **India Inclusive Innovation Fund** to finance innovative enterprises focused on the bottom of the pyramid. In the long term, the Fund will aspire to an eventual size of Rs 5000 crore, but will initially be operationalised with an initial corpus of Rs 500 crores with contributions from the Government of India, banks and financial institutions, and multilateral agencies. We have also been working on creating an eco system for seeding innovations in regional industry with a focus on MSMEs, by facilitating the creation of **Industry Innovation Clusters** to drive job creation and productivity. Currently, we are in the process of compiling learnings from seven industry clusters to fine tune our model with the aim of replicating it across other industry clusters in the country. We have also been working on implementing **broadband connectivity to 250,000 panchayats** in the country to democratise information and enhance citizen participation in governance. To test connectivity and associated local applications for the same, pilots are underway at 58 Panchayat locations in the country. We are also working with the Ministry of Law and Justice, the Judiciary and the Ministry of Home Affairs on **ICT interventions in courts, police stations and prisons** to improve access to justice and reduce pendency in the legal system.

NInC has also been taking steps to nurture **innovation in the education system** through action in schools and colleges by intervening in curriculum, talent-spotting of innovators among students and award of **Innovation Fellowships**. I am pleased to inform you that the Ministry of Human Resource Development will be launching 1000 Scholarships under the National Innovation Scholarship Scheme from 2013. To excite young minds in schools with demonstrable, hands-on learning, we are also experimenting with conducting **'Tod Fod Jod'** workshops across schools. Through these workshops the aim will be to encourage students to dismantle and re-assemble everyday products to understand the concepts behind them in a practical and fun manner. We are also working with the Ministry of Human Resource Development towards the creation of a **Meta University**, as a global first, that rides on the National Knowledge Network to promote multi-disciplinary learning. The Ministry has already facilitated the establishment of a Meta University in Delhi in which Jawaharlal Nehru University, Jamia Milia Islamia, Delhi University and Indian Institute of Technology Delhi are participating. To drive innovation at the university level, the National Innovation Council is facilitating the creation of innovation eco systems at Universities through **University Innovation Clusters**. We are also working with the Ministry of Human Resource Development for setting up twenty **Design Innovation Centres** co-located in existing institutes, an Open Design School as well as a National Design Innovation Network that will leverage the National Knowledge Network. The Ministry of Human Resource Development, in consultation with the National Innovation Council and the planning commission has identified institutes where 5 new Design Innovation Centres will be co-located and started in the year 2012-13.

Efforts are also underway to create an institutional framework for innovations in Government by facilitating the setting up of **State Innovation Councils** in each State, and **Sectoral Innovation Councils** aligned to Union Government Ministries. Currently, 22 States have set up State Innovation Councils and 23 Sectoral Innovation Councils have been set up and some have also submitted their roadmaps. We have also focused on encouraging cities to set up City Innovation Councils. We are also in the process of conducting stakeholder discussions to provide inputs for **national level policies on innovation and entrepreneurship**. Our inputs have also formed the basis of the perspective on innovation in the Planning Commission's 12th Five Year Plan. Further, we have also conceptualised an initiative where Members of Parliament of Lok Sabha will promote the **'One MP One Idea'** competition where they will look to award the top three innovations in their constituency to spur and capture innovative thinking at the grassroots. We are also working with the state Governments of Kerala and Madhya Pradesh on several innovative development activities for their states.

Our aim is also to involve a larger constituency of people in the innovation movement by setting challenges for the Indian imagination to come up with solutions, especially those that relate to inclusive innovation. As part of this, we are launching the **India Grand Challenges** in November 2012 focused on solutions for the bottom of the pyramid. The Grand Challenges will be widely publicised and will be hosted on the India Innovation Portal

(www.innovation.gov.in). We also want to focus on promoting co-creation and sharing of knowledge through global knowledge partnerships. To encourage this knowledge sharing we hosted the first ever **Global Innovation Roundtable** in November 2011, where heads of innovation policy from 15 Governments around the world came together to exchange ideas and outline possible collaborations. This year we will be hosting the second Global Roundtable on Innovation where representatives from 50 Governments would be joining.

We have also been taking steps for promoting an innovation culture through action in areas of communication and advocacy by engaging with mass media and social media platforms. The Honourable Prime Minister launched the India Innovation Portal created by NInC in November 2011 as a repository of innovation content and a platform for knowledge sharing exchange. We also held the first ever virtual conference on twitter to engage with a wider cross-section of people.

In the past two years, we have been overwhelmed by the support and enthusiasm in India for innovation and have been tremendously encouraged by the latent talent and entrepreneurial energy in our midst. The National Innovation Council aims to play the role of a catalyst to unlock this potential through undertaking various initiatives at the national and regional levels, providing policy inputs for developing an eco system for innovation, creating various mechanisms of collaboration in the system, and above all by encouraging an innovative mindset. Through all these efforts, the Innovation Council is triggering a movement towards innovative thinking that will transform this nation to a nation of problem solvers and solution providers. The efforts of the Council were also recognised by the European Institute for Creative Strategies and Innovation in Paris when India's Decade of Innovation Programme spearheaded by the National Innovation Council was announced the winner of the Hermes Award 2012 for being the 'Best Humanistic Policy of Innovation'.

However, challenges still remain. We still need to sensitise an ever increasing number of stakeholders to the need for innovation. We also especially need to create improved mechanisms of collaboration among Government, industry, R&D institutions, academia and the community at large to drive long-term transformation through innovation. Despite these challenges, I am very hopeful about the future of innovation in the country.

I would like to thank all the members of the National Innovation Council for their support, encouragement, leadership and vision in this exciting journey and in realising our ambitious agenda. I would also like to extend my thanks to all the Government Ministries, The Prime Minister's office, the Planning Commission, organisations and individuals who have worked and collaborated with us in the past year.

We feel that for innovation to become a truly pervasive movement, all stakeholders must champion its cause and hence we would like to call upon citizens, Government, schools, colleges, universities, the academic community, industry associations, industry clusters, entrepreneurs, innovators, civil society, the scientific community and domain experts from various fields to engage with us to make India globally competitive, to expedite growth and to innovate towards new solutions that focus on affordability, scalability and sustainability.

Sam Pitroda

Chairman, National Innovation Council



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Executive Summary

In the last year, the National Innovation Council (NInC) has worked on the following ideas, including the implementation and follow up related to some of the initiatives conceived in the first year. The current status of progress recorded is given below.

Developing an India Inclusive Innovation Fund

To promote inclusive innovation and entrepreneurship focusing on the needs of people in the lower echelons of society, an India Inclusive Innovation Fund (IIIF) was conceptualised. One of the first of its kind in the world, the Fund is conceived as a SEBI-registered venture capital fund that will back creative new solutions to developmental challenges – projects that innovatively improve quality of life for poorer Indian citizens. Fund investees will simultaneously deliver social impact (in healthcare, agriculture, education, energy, and more), while generating moderate commercial returns for their investors. Given its focus on harmonising social with commercial returns – rather than merely maximising financial gain – the Fund will seek investors with similar operating philosophies. It is proposed to be seeded by the Government of India, which will provide 20% of the Fund's corpus, and draw the remainder of its financing from banks, insurance companies, financial institutions, and bilateral and multilateral development agencies. The Fund would be operationalised when it reached a corpus size of Rs 500 crores. The Fund will be capitalised to an eventual target size of Rs 5000 crores to be achieved in phases.

Progress

The Fund proposal was announced at the Council's First Report to the People on 15 November 2011. In this last year, NInC has collaborated with the Ministry of Micro, Small, and Medium Enterprises to steer the Fund towards its final stages of approval. The Government of India has included its contribution of Rs 100 crores to kick-start the Fund in the Union Budget 2012. NInC has developed an innovative structural design for the Fund, suited to its unique remit and investor base. NInC has also reached out to potential investors to make the case for innovation investments that are simultaneously social and commercial, and is successfully raising the Fund's initial corpus.

Creating New Products, Increasing Jobs and Improving Competitiveness: Industry Innovation Clusters

Small and Medium enterprises (SMEs) are among the largest job creators in the country. They contribute to 40% of export and are recognised as engines of economic growth. They need to innovate to stay globally competitive, grow in scale and thereby become significant contributors to national growth. To seed and strengthen innovations in small and medium industry clusters, NInC initiated the Industry Innovation Clusters initiative in 2011. Leveraging collective strength of a cluster, as one association or collective, the initiative aims to attract stronger and longer-term partners in the innovation eco system to collaborate with small and medium industries.

The Innovation Cluster initiative is a Public-Private-Partnership (PPP) with NInC seeding innovation eco systems in the clusters by helping establish Cluster Innovation Centres (CICs). The CIC will catalyse and manage collaborations, bringing together industry, academia, research institutions, professional service organisations, Government, non-Government agencies and society.

Progress

The Pilot Phase of this initiative has been operational in 7 clusters across the country which include Auto Components, Faridabad, Haryana; Ayurveda, Thrissur, Kerala; Bamboo, Agartala, Tripura; Brassware, Moradabad, Uttar Pradesh; Food Processing, Krishnagiri, Tamilnadu; Furniture, Ernakulam, Kerala; Life Sciences, Ahmedabad, Gujarat. Over the past year, NInC has been able to bring together local innovation eco systems at these clusters consisting of a total of 39 public and private institutions. By the end of the pilot phase the aim is to successfully demonstrate 10-12 new products, 7-10 process improvements and 2 new centres at the clusters.

NInC has been collaborating with State Governments, Ministry of Micro, Small, and Medium Enterprises, Ministry of Textiles, the Council of Scientific and Industrial Research, and industry partners such as IL&FS in this effort. With help from concerned stakeholders NInC will work towards replicating the Innovation Cluster model in 80-100 clusters by the end of 2013.

Nurturing Innovation through Education

To promote creativity and nurture innovations NInC has been working with the Ministry of Human Resource Development (MHRD) and other institutional stakeholders on the following proposals.

- (a) Creation of a separate scholarship stream of National Innovation Scholarships analogous to the National Talent Search Scheme; with the MHRD. This will help identify talented children at the school level who think creatively, laterally and innovatively on issues that they perceive as important in their local environment. It is expected to have a multiplier effect of valuing creativity and innovation by parents, teachers and the learning system.
- (b) Setting up an Innovation Centre in each DIET (District Institute of Education and Training) to enhance teacher training and enable them to become facilitators of creativity and innovative thinking; with the MHRD. This could be done by tapping local creative talent on part-time basis into DIETs.
- (c) Mapping of Local History, Ecology and Cultural Heritage by each high school in the country to create critical thinking on their local environment by students, with the MHRD.
- (d) Setting up a Meta University, as a redefinition of the university model in the 21st century by leveraging India's National Knowledge Network to enable multi-disciplinary learning and collaborative knowledge creation; with the MHRD.
- (e) Setting up twenty Design Innovation Centres co-located in Institutes of National Importance, an Open Design School (ODS) and a National Design Innovation Network (NDIN). It has been proposed to include these initiatives in the 12th Plan for consideration by the MHRD. Co-location of Design Innovation Centres in campuses of national repute like IITs/NITs will help leveraging of academic and industry resources and give a boost to design capacity in the country. ODS is envisaged as a multi-disciplinary design school that, besides running its own classes in a model of collaborative education, provides free access to design education and learning material through the internet. NDIN is envisaged as a network of design schools, research organisations, academic institutions, NGOs, government bodies and the public working together to promote design innovation.
- (f) Setting up pilot University Innovation Clusters. NInC proposes to identify and facilitate the development of university-based innovation clusters across the country where innovation would be seeded through Cluster Innovation Centres (CIC). The CIC will provide a platform for the university and its partners to forge linkages between various stakeholders from industry and academia, initiate and assist innovation activities,

encourage innovations in curricula and act as a catalyst and facilitator. It will also work closely with other industry clusters in its region. An initial pilot with University of Delhi has commenced and received overwhelming response from the student community.

- (g) Creating 'Tod Fod Jod' (TFJ) Centres in schools and colleges. The aim is to provide a hands-on learning environment where students can de-construct, re-construct or re-purpose everyday objects that they see or use.

Progress

- (a) *MHRD will be launching the National Innovation Scholarships in 2013, wherein 1000 students across the country will be awarded Rs. 25,000 per year. These student-awardees will be from classes 8th to 12th or from the same age group (for children not attending regular schools or children out of school) and the scholarship will continue up to class 12, or age 18 (for those out of school). Thus, in the fifth year, there would be up to 5000 students getting this scholarship. The scholarships are aimed at encouraging innovative thinking and problem-solving, rather than open-ended creativity. Annual Innovation camps will be organised to nurture, mentor and network these young innovators.*
- (b) *MHRD is currently in the process of framing guidelines for the Centrally Sponsored Scheme on Teacher's Training to be included in the 12th Five Year Plan. These guidelines have detailed steps on re-positioning of DIETS in the country. As part of the guidelines it has also been agreed to develop Resource Centres in each DIET which could also double up as Innovation Centres.*
- (c) *MHRD has approved the inclusion of local history, ecology and cultural heritage mapping as part of the Rashtriya Madhyamik Shiksha Abhiyan (RMSA) scheme.*
- (d) *Under MHRD's guidance, a Meta University has been established in Delhi with the participation of Jawaharlal Nehru University, Jamia Milia Islamia, the University of Delhi, and the Indian Institute of Technology, Delhi. These institutions have identified three principal areas viz., climate change, public health and education to concretize the concept of Meta University, with each institution utilising its existing infrastructure and capabilities. Meta Universities are proposed to be set up in Kolkata, Pune and Hyderabad as well.*
- (e) *The National Innovation Council is working closely with the Planning Commission and MHRD to create a concept paper on design education. The Concept Note emphasises a "Hub and Spoke" model on the proposed Design Innovation Centres, with the Lead Institute acting as the mentor while synergising and leveraging the potential of the Institutes at the field level. The Ministry of HRD has now approved the following Lead Institutions which could act as a "Hub" for the first five Design Innovation Centres to be set up in the financial year 2012-2013: IIT-Bombay, IIT-Delhi, IIT-Guwahati, IISC-Bangalore, and the University of Delhi. This paper will also be the basis for MHRD to create a detailed implementation plan for ODS and NDIN by December 2012. The Implementation plan will be discussed in the coming months in broad based stakeholder consultations, to be held by MHRD, in order to create a workable framework.*
- (f) *University of Delhi and MS University, Baroda have set up University Innovation Clusters as pilots which have been widely welcomed. Central ministries and departments, State governments, and universities are showing interest in learning from this initiative. Owing to the interest, NInC envisages replicating the Innovation Cluster model in fifteen universities by the end of 2013*
- (g) *The Tod Fod Jod initiative is being piloted in various locations across the country. As part of the pilot, NInC is conducting workshops in identified schools in Delhi, Vadodara, and Karnataka, as well as in Manav*

Rachna University, Faridabad. These pilots are expected to be expanded to another three to five locations across the country over the next six months. The pilots are aimed at school students from classes 5-8, and first and second year college students, with different levels of sophistication and hands-on experience.

Connecting India for Innovation: Rural Broadband and Applications

To accelerate the reach of connectivity and to enhance development and innovation at the grassroots, NInC has followed up on the Government's proposal to provide optic-fibre based broadband connectivity to 250,000 panchayats in the country, which are at the core of governance and service delivery at the last mile. The aim is to not only leverage this connectivity to improve service delivery by bringing in due transparency and accountability, but also to provide a platform for collective solution building and knowledge sharing for local populations through relevant applications and an associated eco system.

Progress

The Government approved the proposal to connect all panchayats through optic fibre and the rural broadband plan on 25th October 2011. The total cost of the scheme is estimated to about Rs. 20,000 crores. The project will be funded by the Universal Service Obligation Fund (USOF). The project is being implemented by a Special Purpose Vehicle (SPV) named Bharat Broadband Network Limited incorporated for this purpose. To test the connectivity issues as well as locally relevant applications that could leverage this broadband access, pilots in 58 Panchayat locations in Rajasthan, Andhra Pradesh and Tripura are currently underway. The pilots will be completed in a timeframe of 3 to 4 months.

NInC is also working on applications for rural broadband in collaboration with relevant Ministries. Lessons on community adoption of ICT are also currently being collated in a pilot project in Ajmer district in Rajasthan.

Developing an Institutional Framework for Innovation

To create a cross-cutting system to boost innovation performance in the country, NInC is facilitating the setting up of State Innovation Councils in each State. These Councils would enlist non-government expertise and are expected to drive the innovation agenda in the States. NInC is also encouraging the setting up of Sectoral Innovation Councils aligned to Union Government Ministries to promote innovation eco systems across sectors and domains.

NInC is also working with relevant Ministries and other stakeholders to prepare drafts of national level policies for innovation and entrepreneurship. The Council has also been involved in providing inputs for the chapter on innovation for the Twelfth Five Year Plan of the Planning Commission, Government of India.

Progress

Currently 22 states have constituted State Innovation Councils and 24 Sectoral Innovation Councils under Union Government Ministries have been set up. These will contribute to developing the innovation roadmap for the decade.

Inspiring Imagination for Inclusive Innovation through Grand Challenges and Awards

The National Innovation Council (NInC), as part of its strategy to create an Indian model of innovation and development, has been encouraging the use of prizes, challenges and crowdsourcing as tools for promoting Inclusive Innovation. NInC conceptualised the 'One MP – One Idea' annual competition and launched the anti-drudgery challenge in October 2011. It is in the process of launching the India Grand Challenge programme where NInC will be outlining challenges in areas such as education, health, agriculture, energy, water, etc. in order to find

innovations that will impact the lives of the bottom 500 million. These challenges will be widely publicised and will be hosted on the India Innovation Portal (www.innovation.gov.in).

Progress

The 'One MP – One Idea', proposed by the NInC in 2011, has been approved and welcomed by the Lok Sabha, and is under the consideration of the Rajya Sabha. Accordingly, the Ministry of Statistics and Programme Implementation has modified the MPLADS guidelines to make provisions for the 'One MP – One Idea' competition.

NInC had called for proposals to improve work tools, innovate on products and processes that reduce drudgery of the working class population in October 2011. 468 proposals were received in a period of four months and finally six proposals were shortlisted after several rounds of screening. These proposals were sent by institutions and individuals from all backgrounds such as students, engineers, government officials, professionals, and teachers, amongst others. The six winning innovations included a novel design of a rickshaw, a human powered motor, a display unit for street vendors, a low cost cycle for physically challenged, and devices to reduce the drudgery of construction workers and sanitation workers. The India Grand Challenge Programme will be launched this year.

Inspiring India's Scientific Temper for Innovation

The potential of Science centres across the country as instruments and agents of percolating scientific temper, innovation and thereby socio-economic development is underutilised. Though non-formal education through Science centres took its root in India more than 50 years ago, the impact of these institutions has been less compared to global precedents. Notwithstanding the need for more science centres in the country, NInC has recommended the creation of Innovation Spaces at Science Centres and also the creation of a virtual Science centre portal. These Innovation spaces will exhibit innovations, stories of innovators, sections exhibiting gadgets and emerging technology, industry sponsored sections, details of government innovation programs along with other sections.

Progress

The National Innovation Council is currently discussing the idea of piloting the Innovation Space concept with the National Council of Science Museums (NCSM); National Museum of Natural History, New Delhi and other centres like Vikram Sarabhai Community Science Centre, Agastya Foundation and others. NInC also conducted, for the first time ever, a virtual conference via the National Knowledge Network on 30th January 2012 with more than 30 science centres from all across India, to discuss Innovation spaces at science centres. NInC has also launched a Virtual Science Museum channel on Youtube available at <http://www.youtube.com/VirtualScienceMuseum>.

Innovation in the Judicial System: Technology adoption for delivery of timely justice

In the last decade, the Government has made several efforts to improve access to justice by introducing ICT interventions in Justice Administration. In order to synergise the existing efforts for reducing pendency in the Justice delivery system and for creating a coherent vision and coordinated action amongst the various stakeholders, the Courts of Tomorrow project has been conceptualised.

Progress

The Courts of Tomorrow initiative is set for a state-wide pilot at Madhya Pradesh. We are collaborating closely with the High Court of Madhya Pradesh, Madhya Pradesh State Government, and the National Informatics

Centre to implement the vision of the Courts of Tomorrow.

Pilots at the Delhi High Court are also being conducted, which include the use of the e-Office software for administrative uses; delivery of summons by using the postal system; new hardware configurations for ICT enabled court rooms, etc. The office is working closely with the e-Committee of the Supreme Court, the Ministry of Law and Justice, the Ministry of Home Affairs to define data models, interfaces and exchange protocols for integration of courts, police and prison systems.

Partnering For Innovation: Collaboration and Networks

NInC is also focused on facilitating and leveraging platforms for international collaboration for driving innovation and research. To exchange ideas on fostering international collaborations for innovation, NInC hosted the Global Innovation Roundtable on 14th-15th November 2011 in New Delhi where heads of innovation policy from 15 Governments across the world came together to share cross-country experience. This year NInC will be hosting the Second Global Innovation Roundtable 2012 on 1st and 2nd of November 2012 where representatives from 50 Governments have been invited.

Joint collaboration projects have also been undertaken with other countries. India and the US collaborated to develop an Open Government Platform (OGPL) to promote transparency and greater citizen engagement by making more government data, documents, tools and processes publicly available in useful machine-readable formats to develop new applications for citizen benefit. OGPL combines and expands the best features of the U.S. "Data.gov" and India's "[India.gov.in](http://india.gov.in)" sites, and will be offered freely to other governments using the open-source model.

The National Knowledge Network of the Government of India which is a high-speed multi gigabit network is not only connecting educational and research institutes in the country, but is getting connected to global research networks to enable real time collaboration and research. These include the TEIN 3 and CERN.

Progress

The Second Global Innovation Roundtable will be held on 1st and 2nd November in New Delhi which will be a platform for discussing new collaborations and partnerships around the theme of inclusive innovation.

OGPL's initial version was released on 30th March 2012. In India, simultaneously, a National Data Sharing policy has been announced by the Government of India wherein within 6 months each Government Department would release at least five data sets to be made public. Currently, pilot testing of OGPL in interested third countries has begun. The aim would be to ensure global availability of OGPL by the middle of 2013. In India the data portal (<http://data.gov.in>) has been built using OGPL and is already live.

The National Knowledge Network has connected around 877 nodes in the country. NKN also plans to reach the US and connect to various other research networks like Internet2 / CANARIE/ GLORIAD/ NYSERNET/ in the US and similar RENs in the Asia Pac region.

Financing Innovation: The India Inclusive Innovation Fund

Background

Successful inclusive innovation needs finance. Innovators who develop creative, economically sustainable solutions to developmental challenges will need funds to survive the difficult process of seeding, incubating, and developing their ideas. Unfortunately, India's innovation eco system cannot always help these innovators. Traditional enterprise financiers – like banks, and venture capitalists – can efficiently muster talent and dynamism around profitable new ideas; however, they are incentivised to drive commercial, not social impact. On the other hand, subsidy and philanthropic financing (which remains largely grant-based) prioritises social impact, but is not designed to encourage self-sustainability. A gap remains between the two: one that aspiring inclusive innovators risk falling into. This gap needs to be bridged by financing mechanisms which combine social impact with reasonable economic returns.

The India Inclusive Innovation Fund

The India Inclusive Innovation Fund is the National Innovation Council's attempt to accomplish this. The first of its kind in India of its size and range of activity, the Fund is conceived as a SEBI-registered venture capital fund that will back creative new solutions to developmental challenges – projects that innovatively improve quality of life for poorer Indian citizens. Fund investees will simultaneously deliver social impact (in healthcare, agriculture, education, energy, food and nutrition, and more), while generating reasonable commercial returns for their investors. The Fund will invest directly in these projects, and will also contribute to the corpus of Funds with similar objectives.

Given its focus on harmonising social with commercial returns – rather than merely maximising financial gain – the Fund will seek investors with similar operating philosophies. It is proposed to be seeded by the Government of India, which will provide 20% of the Fund's corpus, and draw the remainder of its financing from banks, insurance companies, financial institutions, and bilateral and multilateral development agencies. The Fund would be operationalised when it reached a corpus size of Rs 500 crores.

Structural Design Development

The Fund will need to combine venture capital's traditional flexibility (which allows investment into promising early-stage innovation) with the accountability that must accompany social investment. Over this last year, the Council has developed an organisational design for the Fund that seeks to bridge the two: one that is based on the established venture capital format, with additional oversight and protection built into key decision-making elements.

Together with the Ministry of Micro, Small, and Medium Enterprises, the Council has proposed the following structure:

Trust and Governing Council. The Council proposes to create a Trust under the provisions of the Indian Trusts Act, 1882, which will serve to house the Fund's capital. The Trust will be registered with the SEBI as a Category IAIF – VCF under the Alternative Investment Fund Regulations, with Government of India representatives serving as sponsor and settlor. An established trustee services firm would administer the Trust.

Major policy decisions would be taken by a Fund Governing Council, consisting of some of India's most respected figures from the worlds of finance and public service, and permanent representatives of Government. The Governing Council will ensure that the Fund stays true to its social impact remit, and will have the right of final disapproval over any investment proposal.

Professional Investment Manager. In view of the high risk nature of the projects to be supported, an Investment Manager Company is being set up which will be staffed by professional fund managers. These managers will have the independence they need to discover and evaluate projects most capable of generating social and commercial impact. In view of the unique nature of the Fund, the Fund's Investment Manager will be registered under Section 25 of the Companies Act.

The Investment Manager will also be tasked with development activity, managing the mentoring and incubation of promising social innovation start-ups in their early stages – giving them the best chance of survival and success. The Investment Manager's management fee would vary between 2.5% and 2% of the corpus, depending on the stage of its investment activity. It is proposed that 30% of this fee would be used to fund the company's mentoring, incubation, and development activity; as will any surplus it generates (after payment of fund managers' compensation).

Investment Committee. The Section 25 Investment Manager Company would establish an Investment Committee, consisting of Fund contributors and highly regarded investment professionals, to make decisions in relation to investments, dispositions, and distributions. The Committee would consider the investment cases put up by the Investment Manager company, and make investment decisions – subject to reporting to the Governing Council.

Fundraising

The Council is successfully engaging government and commercial investors, with the Ministry of Micro, Small, and Medium Enterprises, to evangelise the Fund and its basic premise, and to raise capital.

Government Capital. At the launch of the Council's First Report to the People on 15 November 2011, the Hon'ble Finance Minister at the time Shri Pranab Mukherjee announced a Government of India contribution of Rs 100 crores to kick-start the Fund. This Government seed investment was allocated in the Union Budget 2012. The Ministry of Micro, Small, and Medium Enterprises is currently processing the approvals needed for final investment to take place on Fund operationalisation.

Commercial Investments. The Council has received much support for the Fund from public sector banks and financial institutions. A total of Rs 145 crores has been raised at time of writing, through in-principle commitments from major public sector banks and financial institutions, with additional commitments anticipated.

Bilateral and Multilateral Investments. Significant interest has been received from bilateral/multilateral development institutions and agencies. The Council and the Ministry of MSME are working with the Department of Economic Affairs to explore the possibility of associating the Fund with these organisations.

Progress

The Fund proposal was announced at the Council's First Report to the People on 15 November 2011. In this last year, the Council has collaborated with the Ministry of Micro, Small, and Medium Enterprises to steer the Fund towards its final stages of approval. It has developed an innovative structural design for the Fund, suited to its unique remit and investor base (as outlined above). The Council has also reached out to potential investors to make the case for innovation investments that are simultaneously social and commercial, and is successfully raising the Fund's initial corpus.

The Fund, after obtaining in-principle commitments for Rs 500 crores and receiving final government approvals, will be registered with SEBI. The initial investment prospects are being identified. A specialised core team is also expected to be in place before the first closure. It is anticipated that the Fund would be operational by the beginning of next year.

Creating New Products, Increasing Jobs and Improving Competitiveness: Industry Innovation Clusters

Background

Small and medium scale industries worldwide are acknowledged as national engines of job growth and economic progress. India has over 1500 industry clusters, and over 3000 handloom/ handcraft clusters producing everything from automobile components to agarbatti sticks. However, our small and medium scale industry clusters have limited access to resources, talent, research and development (R&D) capacity and funds they need to create new products, enhance productivity, improve competitiveness and expand operations.

To develop capabilities and capacities within small and medium industry to innovate, it is vital to nurture innovation eco systems that bring access to R&D, technology, finance, skilled manpower, mentors, domain expertise and others facets. By partnering and collaborating with both public and private players in their innovation eco systems, industries can leverage mutual strengths and exploit opportunities for innovations in products, services, business models and organisational models.



The Industry Innovation Cluster Initiative

To seed and strengthen innovations in small and medium industry clusters, NInC initiated the Industry Innovation Clusters initiative in 2011. Leveraging the collective strength of a cluster as a single association or community, the initiative aims to attract stronger and longer-term partners in the innovation eco system to collaborate with small and medium industries.

The Innovation Cluster initiative is structured as a Public-Private-Partnership (PPP); with NInC helping establish Cluster Innovation Centres (CICs) to seed innovation eco systems in the clusters. The CIC will promote collaboration bringing together industry, academia, research institutions, professional service organizations, Government, non-Government agencies and society. Initiating closer ties in the eco system, the CIC will link demand to supply – acting as a catalyst, to aid the entire cluster in effective implementation and management of innovation-driven and growth activities.

NInC is now driving pilot projects at seven Cluster Innovation Centres around the country. In the past year, it has been able to bring together local innovation eco systems at these clusters consisting of a total of 39 public and private institutions. Representing a cross-section of industry sectors, geographies and scale of economies, these clusters collectively consist of 85,000 small and medium scale industries, employing over 10 lakh people across 6 states, and generate revenue of approximately INR 20,500 crores.

Progress

The objectives of the NInC Innovation Cluster pilots are to :

- Foster local innovation eco systems at clusters (by establishing CICs and forging partnerships)
- Provide capacity building related to innovation (through Innovation Enabler Sessions)
- Seed innovation projects

However, with interest from clusters, the scope has been expanded to include product development, prototyping and commercialisation of innovations coming out of the innovation projects. Therefore, the Pilot Phase has been extended by 6 months.

Table 1 presents a snapshot of the Pilot clusters and the collaborating partners who are participating in the Pilot Phase.

Table 1 : Pilot Clusters & Collaborating Partners

Cluster	Location	NInC Collaborating Partners				
		Association	R&D / Technology	Universities	Government	Others
Auto Components	Faridabad, Haryana	IamSMEofIndia	CISR-CMERI	MRIU	Dir. of Industries Haryana	CII, FICCI, IL&FS, MSME Foundation, TMTC
Ayurveda	Thrissur, Kerala	CAReKeralam	CISR-NIIST			
Bamboo	Agartala, Tripura		CISR-CIMAP CISR-CMERI	NIT Agartala	TBM	
Brassware	Moradabad, Uttar Pradesh	MCIDS	CISR-CIMAP CISR-CMERI		MHSC, Min. of Textiles (GOI)	
Food Processing	Krishnagiri, Tamilnadu	KrishmaaCDS	CISR-CFTRI CISR-NIIST	TNAU		
Furniture	Ernakulam, Kerala	KFC	CISR-NIIST, RRI			
Life Sciences	Ahmedabad, Gujarat	IDMA	CISR-CLRI, CISR-NDRI		GSBTM	

Expected Results

NInC expects the successful demonstration of 10-12 new products, 7-10 process improvements and 2 new centres at the clusters by the end of the Pilot Phase. These innovations will help introduce new products, increase productivity, improve product quality, reduce wastages, make the industries eco-friendly, support entrepreneurs and increase income of artisans/farmers/workmen in the clusters. The following are examples of innovations and socio-economic benefits expected:

Table 2 : Example Innovation Activities & Benefits

Cluster	No. of Projects	Example Innovation Activity	Expected Benefit	Type of Innovation
Auto Components	3	Entrepreneurship Facilitation Cell	Complete hand-holding of Entrepreneurs	Service
Ayurveda	2	Standardization of Nishakathakadi Kashayam	Standardisation leading to acceptance in export market	Process
Bamboo	3	Machines for Agarbatti stick making	Increase in income of artisans	Process
Brassware	5	Efficient design for Coke based furnace	Increase in income of artisans	Process
Food Processing	6	Cold storage protocols for fruits and vegetables	Increase in income for farmers	Process
Furniture	3	Furniture Design Hub	Improved product portfolio	Product
Life Sciences	2	Technology transfer from R&D institutions	New products	Product

NInC will release case studies which will capture and document the lessons from the Pilot Phase clusters and the socio-economic impact of the innovations at individual level (for artisans, farmers, and workers), at industry unit level, and at the cluster level.

Future Scope

Central Ministries and Departments, State Governments, industry bodies and cluster associations are already showing interest in learning from this initiative. Owing to this interest, NInC envisages replicating the Innovation Cluster model in 80-100 clusters by end of 2013.

NInC will work with interested parties, which will act as Lead Partners, and help them adopt and execute the Innovation Cluster model. NInC recently conducted a Sensitisation workshop for the Council of Scientific and Industrial Research (CSIR), where scientists from all 38 labs under CSIR were present, which culminated in CSIR showing strong interest in becoming a Lead Partner.

NInC is actively seeking more Lead Partners to scale the initiative across the country. To aid these Lead Partners, NInC is developing supporting documentation such as program guides, training material for cluster operatives and will provide knowledge support to these partners. NInC will also facilitate collaborations between various public and private institutions, both domestic and international, for the benefit of the initiative.

Nurturing Innovation Through Education

Background

Education is the foundation for creating the next generation of innovative thinkers. It can provide the platform to mould and shape the future of our youth to enable it to take advantage of the opportunities of an innovation nation. Inculcating and promoting the spirit of innovation in educational institutions can lay the groundwork for enhancing the impact of innovation in society and in realising our demographic dividend. Apart from fostering innovation in educational institutions, we also need to leverage innovation to bring about generational change in the education system. This is especially critical in view of the massive demand on the education system in India which far surpasses the limited supply. Today, new technology platforms which can alter delivery models and define new approaches to collaborative and multidisciplinary learning are challenging traditional paradigms of learning and providing an unprecedented window of experimentation to move towards the next phase of education.

Recognising the fundamental role of education in nurturing and fostering an eco system of innovation the National Innovation Council is engaged in a series of initiatives to encourage innovations in existing educational institutions – universities, colleges and schools, as well as promoting new educational models and innovative platforms for knowledge creation, dissemination and application.

Some of the key initiatives taken up by the National Innovation Council in its first year to nurture innovations through education are given below.

Creation of a separate scholarship stream for National Innovation Scholarships analogous to the National Talent Search Scheme

To complement the current National Talent Search Scheme (NTSE), NInC had proposed the introduction of a parallel stream of National Innovation Scholarships. These scholarships, under the Ministry of Human Resource Development (MHRD), will be launched in the year 2013. 1000 students across the country will be awarded Rs. 25,000 per year. These student-awardees will be from classes 8th to 12th or from the same age group (for children not attending regular schools or children out of school) and the scholarship will continue up to class 12, or age 18 (for those out of school). Thus, in the fifth year, there would be up to 5000 students getting this scholarship.

The National Innovation Foundation, which has prior experience in conducting selection-cum-search process for young innovators will be the nodal agency to operationalise this scholarship. The scholarship will encourage innovative thinking and problem-solving, rather than open-ended creativity; selected children will also be nurtured to understand the innovation value chain. Annual Innovation Camps will be organised to groom, mentor and network these young innovators. These camps will also support these young innovators in taking their innovations to the next level.

Progress

The National Innovation Council and the Ministry of Human Resource Development have set up a joint committee to develop the modalities of the National Innovation Scholarships. The Ministry is currently working out implementation details needed to launch the first batch of 1,000 scholarships.

Setting up an Innovation Centre in each DIET - District Institute of Education and Training

To institutionalise thinking on innovation through the most critical resource of teachers, an ideal opportunity exists in re-imagining the District Institutes of Education and Training (DIETs) as hubs for promoting innovation and creativity. A good DIET will make teachers value creativity and give them the ability to spot it in their students, whom they could encourage to pursue their academic passions. DIETs then begin to play a pivotal role in creating an eco system of innovation in schools by turning teachers into real educators - “leading them to light”, in the original Latin meaning of the word.

NInC has proposed creating an Innovation Centre in each DIET. A District level Innovation Centre will pool in the best teachers in Math, Science, and Social Sciences to lead innovation in the schools of the district. They will develop modules for teacher education, spot talent, improvise on curricula for innovation-promoting activities, and so on. DIETs must provide for taking in part-time faculty to involve local talent in teacher training – creative artists, retired award winners from the teacher category and so on. Private sector professionals and organisations, educational NGOs etc. interested in the area of innovative education may also be considered to assist in the setting up of innovation centres in DIETs.

Progress

Ministry of Human Resource Development is currently in the process of framing guidelines for the Centrally Sponsored Scheme on Teacher's Training to be included in the 12th Five Year Plan. These guidelines have detailed steps on re-positioning of DIETs in the country. As part of the guidelines it has also been agreed to develop Resource Centres in each DIET which could also double up as Innovation Centres. The guidelines state:

'DIET can emerge as a hub of educational value through a vibrant resource centre and a centre for teacher learning at the district level. It could bring to use the local knowledge, build on its competencies and integrate the use of educational technologies to facilitate processes of maintaining and disseminating knowledge and skills.'

Detailed Guidelines for MHRD's Centrally Sponsored Scheme on Teacher's Training are available with the Ministry.

Mapping of Local History, Ecology and Cultural Heritage by each High School in the country

To create critical consciousness among students about their local economy, local ecology, local history and local cultural heritage, it is proposed that one week each year should be designated for learning from “society” as against learning “within the classrooms” from teachers. The initiative will drive the local discovery of “jal, jangal, zameen” by students based on observation.

For example, students of Class IX may be engaged in an exercise of 'Aas Paas ki Khoj'. The students will be assisted by a volunteer teacher, and follow a structured format as they undertake a tour of the village around the school. The students could piece together local history, local ecology, map local bio-diversity, local culture, and heritage. The result would be a resource on local history, ecology, and cultural heritage, created by these Class IX students: the Report of the Class of 2012, which the students of 2013 can build on. Support material for such exercises already exists, as do source documents to build on: for mapping local biodiversity, for example, a template exists with the Indian Institute of Science through the work of Dr. Madhav Gadgil; UNESCO has developed a template for local heritage conservation.

The greater value of the exercise lies in its ability to create societal engagement for students and gives them an understanding of their rootedness in their local context. The pedagogic value of the exercise is in reinforcing a

notion that sources of learning can be multiple: village elders, local crafts persons, local medicine practitioners, traders in markets, socially and culturally disadvantaged groups and so on. This is expected to be an exercise that can pay rich dividends to both students and society.

Progress

The Ministry of Human Resource Development has approved making the mapping exercise part of the Rashtriya Madhyamik Shiksha Abhiyan (RMSA) scheme.

Setting up a Meta University as a Global First to promote collaborative and multi-disciplinary learning using the National Knowledge Network

India pioneered the idea of the university with Nalanda and Taxila to explore a life of the mind and undertake an exploration of ideas. Today India is poised to reinvent the university of the 21st century as a new adventure of cross-cutting ideas facilitated by technology. In doing so it seeks to position the university as a cradle of innovation. The National Knowledge Network connecting India's major knowledge institutions is already in place and provides a platform to facilitate this endeavour, further the fact that most of these major knowledge institutions in India are part of a public system, makes collaborative effort easier. Technology offers unprecedented opportunities to “disrupt the classroom” as traditionally understood, provide for individualised and customised learning and radically alter pedagogic systems to move towards collaborative and multi-disciplinary learning.

Seizing these new opportunities and leveraging the platform of the National Knowledge Network, the National Innovation Council has put forward a proposal to create the first global Meta University. The idea of a Meta University was first conceptualised by Charles Vest and later developed by Don Tapscott and Anthony Williams as a Global Network of Higher Learning to be realised in several stages. The basic idea of a Meta University as a collaborative platform where a network of Universities offers students a customised learning experience is eminently applicable in the Indian context.

The National Knowledge Network (NKN) initiated by the National Knowledge Commission, is already being implemented to connect all our universities, research institutions, libraries, laboratories, hospitals and agricultural institutions across the country with a high speed (multi gigabit) fibre based, broadband network. Currently, 877 institutions are connected on the NKN (A list of institutes is provided in Annexure 1). The NKN by networking all knowledge institutions and providing them with high speed connectivity aims to facilitate flow of information and create a platform for collaboration between researchers, academic faculty and students from diverse backgrounds and geographies. In addition, the Ministry of Human Resource Development aims to eventually provide connectivity to colleges and schools as well as support content creation through its initiatives. Further, the proposed Universities for Innovation Bill recognises flexibility as its DNA to facilitate innovation. India therefore provides unique opportunities for innovating with this idea of a 'Meta University' given the enormous unmet demand for high quality education in an environment of limited resources and the availability of a dedicated national network. It will enable the breaking down of silos of academic disciplines and help students to gain multi-disciplinary understanding to be able to create more “rounded” intellectuals for society.

The Meta University riding on the NKN envisages a collaborative and multi-disciplinary learning platform, where students enrolled in a primary college or university will be able to take courses available in other universities and colleges. This would allow students, with the help of Mentors, to customise their learning experience and select options from a wide menu of choices, leveraging the specialisation of individual institutions. It will therefore be possible for example, for an engineering student from the Indian Institute of Technology, Kanpur to also enrol for a

course in ancient history from Jawaharlal Nehru University; or for a mathematics student from the Indian Institute of Science to pursue a course in comparative literature from Jadavpur University.

The Meta University will reinterpret the concept of a University as not just a traditional, physical space of learning, but as a repository of knowledge and information that can be delivered in multiple ways, and can be accessed from anywhere and anytime. It will seek to enhance the learning experience through new and innovative delivery models of education that allow students and institutions to collaborate in unprecedented ways. This model is low-cost, requires no brick-and-mortar, leapfrogs over conventional bottlenecks of non-availability of a talented faculty pool, and works within existing legal systems. The National Innovation Council is working closely with the Ministry of Human Resource Development and other stakeholders to shape this initiative.

Progress

Under the guidance of the Ministry of Human Resource Development, a Meta University has been established in Delhi with the participation of Jawaharlal Nehru University, Jamia Milia Islamia, Delhi University and the Indian Institute of Technology, Delhi. These institutions have identified three principal areas viz., climate change, public health and education to concretise the concept of Meta University, with each institution utilising its existing infrastructure and capabilities.

Meta Universities are proposed to be set up in Kolkata, Pune and Hyderabad as well. In Kolkata, the University of Calcutta, Indian Institute of Management and Jadavpur University will be collaborating on the project. Further, Viswa Bharati University, Shantiniketan will join the other institutions of Kolkata to set up a Meta University. Similar arrangements will be put in place by participating institutions in Pune and Hyderabad also. In Hyderabad, the University of Hyderabad has been identified as the lead institution for the purpose.

The University Grants Commission (UGC) has been asked by MHRD to develop guidelines for universities to set up Meta Universities.

Setting up of 20 Design Innovation Centres by co-locating them with Institutes of National Importance, an Open Design School and a National Design Innovation Network

Design is a key element of the innovation process and will be critical for driving innovation in the new knowledge economy. Design-driven innovations can ensure sustainable competitive edge, enhance industrial productivity and also address crucial challenges by harnessing design thinking for needs-based solutions. Design thinking is especially important for solving key problems because it works with a different set of processes: repeatedly reframing the problem, engaging with stakeholders, prototyping and testing solutions, exploring alternatives, visioning scenarios and so on.

The major bottleneck in clearance of setting up of Design Institutes across the country is availability of land, as well as access with an ambience conducive to professional education and trained and talented faculty. One such campus needs a minimum of 30 acres of land for construction of about 20,000 sq meter area of class rooms, studios, hostels, offices, faculty residences etc.

Design Innovation Centres

In this context, NInC has suggested a model of setting up Design Innovation Centres in twenty select locations to be included in the 12th Plan for consideration by the Ministry of Human Resource Development. These could be through co-location in campuses of national repute to ensure maximum convergence, optimum utilisation of existing resources and infrastructure, and to leverage a context of academia-industry interaction. The National Innovation Council is working closely with the Planning Commission and Ministry of Human Resource

Development (MHRD) to create a concept paper on design education, which emphasises a “Hub and Spoke” model for the Design Innovation Centres and envisages inter alia that:

- (i) Some of the Design Innovation Centers (DICs) will be set up by co-locating them in existing publicly funded Institutes of national repute to optimally utilise the existing resources and to address the issue of availability of faculty and land. This would also help in networking and will reduce the start-up time. MHRD has approved 5 such Design Innovation Centres to be set up in the current financial year 2012-13.
- (ii) The mandate, structure course content, and course design, shall be innovative and tailored to the needs and requirements of the DIC, keeping in mind factors such as the existing institution's core function, socio-economic challenges, opportunities and realities in the local geographic region, and industry requirements.
- (iii) The DICs shall be free to network and partner with other Institutes depending upon their area of work.
- (iv) Each Centre will offer courses in design and innovation which will be unique and different from those offered by individual departments. The courses to be offered by the Centre will be multi-disciplinary and participatory in nature.
- (v) They would adopt a “Hub and Spoke” model with the Lead Institute acting as the mentor while synergising and leveraging the potential of the Institutes at the field level.

Open Design School

NInC has also proposed that an Open Design School (ODS) be set up to provide free access to design education and learning material for all and is working with MHRD to realise this. ODS would be a technologically forward looking and responsive centre for design innovation and research, as a unique model of transdisciplinary and collaborative education that encourages community participation.

Apart from being a multi-disciplinary design school itself, ODS would follow the Open Course Ware model, whereby design courseware would be uploaded and shared on the web, ensuring free access to learning material (which would include video lectures and transcripts, sample student projects, recommended reference material, etc.). This would empower individuals and communities in powerful ways; for example, a village of traditional carpenters could keep abreast with the latest developments in wood fabrication tools and techniques and teach themselves design management practices for small businesses through free access to OCW material.

ODS would support trans-disciplinary and collaborative learning – enabling design students at ODS to take their classroom projects into a collaborative mode or turn them into live projects in the field – by working together with students and faculty from other design schools, academic institutions, social or governmental bodies, industry or NGOs. Such an approach has the potential for tremendous social impact, as classroom projects are transformed into actual implementable solutions, through the inclusion of qualified professionals and organisations in the project team, and through collaborative problem solving.

The National Design Innovation Network

The National Design Innovation Network (NDIN) is envisaged as a network of design schools that would work closely with other leading institutions of industry, academia, NGOs and government to further the reach and access to design education, and would be open for interaction with the general public.

Government of India is already implementing a plan to connect 250,000 panchayats through a rural broadband network.

Students would be able to use this Network to access other academic disciplines, industry and policy making bodies to broaden the scope of their university education and go beyond the limitations of their prescribed curricula. For example, a student of textile design with interest in animation could sign up for open electives in a partner animation film school to learn the fundamentals of animation; or an exhibition design student could actively pursue his/her passion for history by jointly engaging with students of history from Jawaharlal Nehru University in co-creating an exhibition space on Indian folk music traditions.

Design schools would use NDIN to work in collaborative, multi-disciplinary teams along with other academic institutions, to bring multiple perspectives and skills to bear on a problem, thereby creating the conditions for innovative design solutions. As this process is adopted in more institutions across the country, we hope that the incremental multiplier effect will result in massive social impact, by encouraging broad-based design innovation in areas addressing the many challenges facing India today.

ODS and NDIN will leverage the National Knowledge Network (NKN) to connect various design, academic, research and governmental organisations and individuals to build a virtual community of design experts, resources and new business models for the future.

Progress

The National Innovation Council is working closely with the Planning Commission and Ministry of Human Resource Development on an integrated proposal to create 20 new Design Innovation Centres, an Open Design School (ODS) and a National Design Innovation Network (NDIN) for its concept paper on design education.

The concept paper will be discussed in the coming months in broad based stakeholder consultations, to be held by MHRD, in order to create a workable framework, by December 2012.

MHRD has completed the process of identifying the initial 5 'hub' institutions for setting up of the Design Innovation Centres in the financial year 2012-2013 and these include: IIT- Bombay, IIT-Delhi, IIT-Guwahati, IISC-Bangalore, and University of Delhi.

Creating University Innovation Clusters for applying knowledge for innovation and growth

Successful universities across the world have shown us that such institutions can be epicentres of connected eco systems; where formal and informal interaction between academic institutions (including teachers and students), industry, R&D institutions, experienced professionals and mentors, sources of funds and policy makers allow for creative friction, application of knowledge and innovation thereof.

The University Innovation Clusters initiative of the National Innovation Council envisages fostering such vibrant eco systems at our universities by seeding Cluster Innovation Centres (CICs). The CIC, acting as a networking hub, will help in establishing collaborations with other local/regional bodies that will open new avenues for their host universities. The CIC will provide a platform for the university and its partners to forge linkages between various stakeholders from industry and academia, initiate and assist innovation activities, encourage innovations in curricula and act as a catalyst and facilitator. As a result, universities will be able to apply their know-how to create new products, new services and new business models joining hands with the eco system partners. Such application of knowledge will help solve key societal challenges including access to healthcare, shortage of energy, environmental concerns, and more - in a frugal and sustainable manner.

Progress

NInC has operationalised Innovation Cluster pilots at two universities. At these two pilots – located at Delhi University, Delhi, and Maharaja Sayajirao University, Baroda – NInC is working with universities to explore new ways of applying, generating and disseminating knowledge.

The CICs in the pilot phase will aim to:

- a) Foster collaborations
- b) Promote, support and incubate innovators
- c) Facilitate technology transfer and commercialisation

The table below provides a summary of the activities being undertaken by these Universities:

Table 3 : Pilot activities at Universities

Delhi University	Launch of new degree programme on innovation
	Collaboration with Defence Research & Development Organisation (DRDO)
	Community oriented projects with students seeking to solve real-world problems
	Programs to promote and fund innovations in affiliated colleges
Maharaja Sayajirao University	Pre-incubation support to entrepreneurs
	Research based on industry demand and with their collaboration
	Collaboration with Association of Biotech Led Enterprises
	Courses on IP, global standards & others to 'fill the gaps' for innovators

With interest from the universities, the scope of the activities of the CIC has also been expanded to include development of new courses, in conjunction with industry to meet skill requirements and demand from the job market.

Central ministries and departments, State governments and universities are showing interest in learning from this initiative. Owing to the interest, NInC envisages replicating the Innovation Cluster model in 15 Universities by the end of 2013.

Igniting innovation with Tod Fod Jod Centres at schools and colleges

To foster innovation at an early stage and to create an innovative mindset in the youth, NInC has proposed the creation of Tod Fod Jod (TFJ) Centres in schools and colleges. The aim is to provide a hands-on learning environment where students can de-construct, re-construct or re-purpose everyday objects that they see or use.

TFJ will not only allow students to understand the scientific principles behind everyday products they use, but also help them expand their horizons to larger concepts and applications to enable them to solve real world problems. For instance, student typically do not know the inside of a ceiling fan; TFJ workshops help them understand how

mechanical, airflow and electric concepts and components are used together to solve the common problem of cooling.

NInC has conducted a few TFJ workshops in some schools and early feedback from students who have undergone a TFJ experience reveals a complete change in perception towards machines and devices. An increase in curiosity and inquisitiveness has also emerged among these students – critical for nurturing an innovative mindset. It is hoped that Tod Fod Jod centres will develop as a way to excite and challenge young minds in a fun learning environment.

Progress

The TFJ initiative is being piloted at locations across India, with NInC workshops being held at selected schools in Delhi, Vadodara, and Karnataka, as well as at Manav Rachna University, Faridabad. These pilots are expected to expand in scope, incorporating another three to five locations across the country over the next six months. The pilots are aimed at school students from classes V to VIII, as well as first and second year college students, with different levels of sophistication and hands-on experience.

The pilot objectives are to:

- *Create awareness about the initiative among various stakeholders: line ministries, State and City Innovation Councils, educational institutions, colleges, middle schools, Government schools, educational agencies, NGOs etc.;*
- *Generate lessons about the impact TFJ can have on triggering innovation at an early age;*
- *Motivate and enable schools and colleges to have Tod Fod Jod Centres at their institutions;*
- *Demonstrate and provide case-studies to educational institutions, agencies and organisations to:*
 - *Highlight the importance and benefits of TFJ in the learning process;*
 - *Create a sense of excitement in the learning process, through hands-on experience with daily use objects, rather than just rote learning and recall;*
 - *Understand the role of TFJ to help develop creativity, exploration and an experimental mindset in students;*
 - *Understand how TFJ can enable students to learn better and apply concepts and principles;*
 - *Outline methodologies to conduct and scale the TFJ programme successfully.*

Connecting People and Technology for Innovation through Rural Broadband

Background

Governments across the world today are recognising the impact of ICT tools in transforming governance capabilities, organisational processes, service delivery models and citizen engagement. India today is uniquely positioned to take advantage of new ICT tools and platforms which can impact health, education, agriculture, and public services. Key among them is broadband access for Internet, which has tremendous potential to democratise information, enhance citizen participation in governance and herald innovation at the grassroots.

According to a recent World Bank Report, a 10 per cent increase in broadband penetration leads to a 1.38 per cent increase in per capita GDP in developing economies. To accelerate the reach of connectivity and to enhance development and innovation at the grassroots, there is a plan to provide optic-fibre based broadband connectivity by the Government of India to 250,000 panchayats in the country, which are at the core of governance and service delivery at the last mile. The aim is not only to leverage this connectivity to improve service delivery by bringing in due transparency and accountability, but also to provide a platform for collective solution building and knowledge sharing for local populations through relevant applications and an associated eco system.

Creating Rural Broadband Infrastructure: NOFN

With 70 per cent of India's population residing in villages, the inclusive growth agenda of the Government can only be successfully realised by addressing the growth and development issues in rural India. As the Government plans to further its agenda of inclusive growth geared towards rural India, there is an urgent need to build effective and efficient governance mechanisms which are scalable, reliable, and sustainable. For the rural community to be truly empowered, information has to be placed in their hands to create a sense of ownership, awareness of rights and the ability to question the system for inefficient delivery.

At the core of the governance structure in rural India are the 250,000 panchayats which form the foundational nodes of information collection and dissemination and the service delivery points for Government administration. The successful implementation of the various development programmes of the Central and State Governments at the grassroots level is inextricably tied to the panchayats. Panchayats are also critical for community participation in development, growth and prosperity as well as for tapping their innovation potential. Broadband access at the panchayats can play a pivotal role in realising the agenda of improved governance, service delivery, as well as creating needs-based applications to strengthen the innovation potential of the local communities and engaging a larger cross-section of people in generating collective local solutions.

Optical fibre is capable of providing high data rates with low latency over long distances and hence qualitatively is a far superior technological option. In this context, the Government has approved the proposal to connect all 250,000 Panchayats through optic fibre to build the National Optical Fibre Network (NOFN). The Department of Telecom in the Ministry of Communications and Information Technology is spearheading the project under the guidance of a High Level Committee co-chaired by Mr Sam Pitroda and Mr Nandan Nilekani, Chairman, UIDAI.

Currently, the optical fibre predominantly reaches State capitals, districts and blocks. To connect the 250,000 Gram Panchayats in the country through optical fibre the aim is to utilise the existing fibres of PSUs such as

BSNL, Railtel and Power Grid, and lay incremental fibre to connect to the Panchayats wherever necessary. This network will enable the prevailing connectivity gap between Panchayats and Blocks to be filled. To leverage the real benefits of broadband connectivity it is essential to also develop appropriate applications platform for government services, education, health, agriculture, employment, etc. Along with this, it is necessary to provide hardware, software, and trained staff to assure utility and sustainability. This means that the panchayats will have to be equipped with not just broadband connections, but also with computers, software and people to create, organise, distribute and deliver relevant information and provide needs-based applications which could be developed by understanding local needs, context and applicability. Services such as birth certificate, death certificate, land records, police reports, school admissions, health records, court papers, government documentation, renewal of licenses, tax submissions, etc. can be facilitated through broadband connectivity. It will thus enrich G2C (Government to Citizen) and B2C (Business to Citizen) interactions leading to greater collaborations.

Keeping this in mind, it is proposed to also commence work on building locally relevant applications at the Panchayat level, in collaboration with concerned Ministries like Ministry of Rural Development, Panchayat Raj, Health, Education etc. and State Governments. Further, non-discriminatory access to the NOFN will be provided to all the telecom service providers. These access providers like mobile operators, ISPs, Cable TV operators and content providers can also aim to launch various services and applications in rural areas.

To test connectivity issues as well as try locally relevant applications that could leverage this broadband access, pilots in 58 Panchayat locations in Rajasthan, Andhra Pradesh and Tripura are currently underway. The pilots will be completed in a timeframe of three to four months and are being monitored by the Department of Telecom and the Universal Service Obligation Fund (USOF) which is providing the funding for the NOFN project.

Further, to gain a deeper understanding of how well-designed community ICT adoption strategies could transform government social scheme management and service delivery, NInC is also working with the Government of Rajasthan on the E-Panchayat Experimental Sites (EPES) initiative. This initiative aims to generate a field-validated, context-specific corpus of useable evidence, information, and strategy on community ICT adoption to enable government decision-makers. The project has created ten panchayat trial sites in Ajmer district, equipping them with internet access and ICT equipment. IT Managers have been appointed in each panchayat, to anchor ICT-enabled services for citizens. These Managers will be assisted by a corps of volunteers selected from and by panchayat Communities.

A range of adoption mechanisms for digital literacy, education, healthcare, and governance will be tried out in these sites, documented, and assessed. The initiative will result in a knowledge base of useable community ICT adoption techniques, accessible to Rajasthan community and government decision-makers at local, district, and State level.

Progress

The National Optical Fibre Network scheme has been approved by the Government of India and the total cost of the scheme is estimated to be about Rs. 20,000 Crore. The plan for Broadband access to Panchayats is to be completed in a timeframe of two years. The project will be funded by the Universal Service Obligation Fund (USOF) and is being implemented by a Special Purpose Vehicle (SPV) named Bharat Broadband Network Limited incorporated for this purpose.

Institutional Framework for Promoting Innovation: State and Sectoral Innovation Councils

Background

Innovation is increasingly being seen as the currency of the 21st century. Innovative solutions will impact not only competitive advantages in business and markets, but will provide answers to the most significant challenges facing the world we live in. Governments across the globe are making a concerted effort to design focused strategies for driving innovation.

While innovation has to permeate all sectors and aspects of the economy, special measures have to be taken at the policy level to create the right eco system to drive innovation with a focus on financial incentives; regulatory, institutional and competitive steps; and strengthening the knowledge and research base.

As part of its efforts to create a cross-cutting system to boost innovation performance in the country, NInC is recommending State Governments to set up State Innovation Councils which would suggest policy interventions to spur innovation in respective states. It is also recommending creation of Sectoral Innovation Councils aligned to Ministries in the Union Government to address targeted innovation needs of specific sectors ranging from agriculture, food, environment, education and health to IT, supercomputing, textiles, and many more. This initiative was also underlined in the Budget Speech of the Finance Minister (28th February 2011): “In order to promote innovations, the National Innovation Council, under Dr Sam Pitroda, has been instituted to chalk out plans for promotion of innovations in India. Activities for setting up of the State Innovation Councils in every State and Sectoral Innovation Councils aligned to Central Ministries are also underway”.

Initiative

While innovation is a result of networks and collaborations among multiple actors, Governments can play a key role in creating the right framework in which these actors can interact. They can create conditions for innovation to flourish, create markets where they may not exist, provide political will, facilitate innovation through development of human capital, investment, policies and processes and create the right vision and partnerships.

Through the setting up of multiple, decentralised Councils, the National Innovation Council aims to create a framework at the regional and sectoral levels to support innovation activities with a focus on devising strategies for inclusive growth, developing co-operation between the different actors involved, understanding the needs of different places and people, with mechanisms for coordination across administrative boundaries and a framework for evaluation. The core ideas, strategies and recommendations devised at the national, State and Sectoral levels will contribute to creating the innovation roadmap for the decade.

The Councils would outline the right combination of interventions in diverse domains that impact innovation including education, trade, investment, finance, and decentralisation – to create the right eco system for innovation. The Councils will bring unique insight and expertise, encourage the creation of a collaborative and inclusive framework and work towards generating better solutions and better opportunities. In the process they will unleash the huge innovation potential in the country.

National Innovation Council expects that State councils will both deepen the support system for innovation, as well as identify state-specific themes for innovation and address them. Sectoral Councils will address national

challenges faced by the sector which require incremental or breakthrough innovations to be able to address them effectively. Both will identify critical constraints and map both opportunities and potential collaboration for collective solution-building. This exercise will create a spin-off organisational culture by being able to recognise that solutions emerge through collaborative action and not by working in silos.

Through these multiple councils the aim would also be to integrate innovation in the long term development strategies and to leverage localised successes to shape innovation initiatives on a broader scale.

The **State Innovation Councils** will replicate at the State level what NInC is undertaking at the national level. The aim is to drive the innovation agenda in the State and harness the core competencies, local talent, resources and capabilities to create new opportunities. The State Innovation Council will support State Government to promote innovation in the State; Encourage young talent and local universities, colleges, Medium and Small Scale Industries (MSME), R&D Institutes; Map opportunities for innovation in the State; Identify and reward talent in innovation and disseminate success stories; organise seminars, lectures, workshops on innovation; create State innovation portal to educate; and input into the Innovation Roadmap 2010-2020 for the State.

NInC is encouraging the State Governments to especially look at some of the national level innovation initiatives which could be replicated at the State level: State level venture funds for promoting innovation and enterprise; Innovation units in regional clusters to address technology, marketing and design challenges; Posing State level Grand Challenges to create an innovation mindset and tap the latent innovation potential in the State; Turning District Institutes of Education and Training (DIET) into District Institutes of Education, Training and Innovation (DIETI); and Leveraging rural broadband.

The **Sectoral Innovation Councils** will drive the innovation agenda in the country across various sectors and harness the core competencies, local talent, resources and capabilities to create new opportunities. The Councils will also give inputs for the roadmap for the decade as well as a make a roadmap for the decade for the particular sector. The Sectoral Innovation Councils would also look at cross-cutting themes that impact the sector and hence work collaboratively with other Councils in that domain.

The focus would be on undertaking activities that improve the innovation quotient of the State or the sector going forward, with a special emphasis on inclusive and sustainable innovation. The policy interventions and recommendations would be outlined in a Roadmap for Innovations for 2010-2020. Simultaneously, the Councils would also undertake initiatives to promote innovation in the State or in the specific sector which have emerged out of the insights captured in the recommendations.

Implementation

NInC is working with representatives of State Governments and Union Government Ministries to set up these Councils and has outlined broad indicative organisational guidelines to ensure that the Councils are aligned to the aims and goals of the effort. NInC has recommended that the Councils create a lean and flexible structure of 7-11 members which would include representation from all stakeholders. While the Councils would be set up under the aegis of the Government (Chief Secretary of the State/ or Secretary of the Department), NInC envisions it to be an autonomous, time-bound body which will act as a platform for incorporating voices from outside the Government to enrich the knowledge base of the Government. The focus would be on recommending enabling policies and concrete strategies for action for spurring the innovation effort in the State or Sector. In this context, the Councils could co-opt domain experts to give inputs for creating an innovation eco system in the State or Sector. These may include persons with demonstrated ability to innovate and established track record of driving innovations.

Since this is a novel concept in the Government system, NInC has also created a framework for assisting and guiding the work of the Councils. The framework offers an analytical tool to examine the innovation eco system in

the State or the Sector through 10 strategic lenses of Governance; S&T; markets; Education, Research & Skills; Global Competitiveness; Information; Land, Climate & Environment; Enterprise Development; Finance; Citizen Expectation and Service Delivery. Each of the lenses will enable insights into the condition and quality of innovation in that domain and capture the aspects which need to be addressed to improve the innovation effort through significant policy inputs or plugging implementation gaps.

The output of the work of the Councils will be in the form of a Roadmap for Innovation in the State/ Sector for 2010-2020 as outlined above, within a time period of 6 months.

The National Innovation Council's initiative to set up multiple innovation Councils, both at the State and sectoral level, is a first of its kind Government effort where a large constituency is being galvanised around the idea of innovation. The Councils are not only recommending strategies and policies for driving innovation, but by expanding the discourse on innovation and by empowering domain experts across areas, an innovation movement is being created. Further, by sensitising State Governments to the idea of innovation, the Councils are also ensuring that innovation becomes a focus area in the long term development agenda of the States.

Other Initiatives

Apart from the focus on State and Sectoral Innovation Councils, NInC is also working with relevant Ministries and other stakeholders to develop **national level policies on Innovation and Entrepreneurship**. For this purpose, it has already initiated several rounds of brainstorming to get inputs from a wider cross-section of people. NInC has also provided inputs on the innovation chapter for the Twelfth Five Year Plan of the Planning Commission, Government of India. Further, NInC has also been engaged with the Performance Management Division of the Cabinet Secretariat to engender innovation in Government, which is also reflected in the Results Framework Document (Annexure 2).

NInC is also advising the Governments of Kerala and Madhya Pradesh on several state level development initiatives. In Kerala, NInC has been working with the state Government on a ten point development agenda which includes plans for connectivity through Coastal waterways, creating a Knowledge City in the state, positioning Kerala as the Global Capital for Ayurveda, developing a Mobile-Based micro-health insurance scheme at zero-cost to Government, strengthening E-Governance, focusing on Waste Management using green technologies, initiatives for Skill Development using ICT and rural broadband, using Creative Potential of the young retiring work force, steps for Modernisation of traditional industries and a plan for a High Speed Rail Corridor connecting north to South Kerala.

In Madhya Pradesh, the High Court and the state Government are keen to implement the Courts of Tomorrow initiative in order to promote innovations in the Justice administration for reducing pendency and delay. NInC is also advising Madhya Pradesh for setting up a Knowledge City in Ujjain and on developing Bhopal as a Global Environment City.

Progress

Till date 22 States have constituted State Innovation Councils and 24 Sectoral Innovation Councils have been constituted. Their details are given in Annexure 3. Roadmaps of the Sectoral Innovation Councils of the Department of Telecommunications (DoT) under the Ministry of Communications and IT (MOCIT) and the Ministry of Information & Broadcasting have been submitted to the National Innovation Council and can be accessed at www.innovationcouncil.gov.in

The development initiatives with the state Governments of Kerala and Madhya Pradesh are underway.

Inspiring Imagination for Inclusive Innovation

Prizes, Challenges and Crowd Sourcing as tools for promoting Inclusive Innovation

“Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution.”

– Albert Einstein

Background

Prizes, challenges and crowd sourcing can be powerful agents of social change. In a very short time, they can focus public attention on particular problem areas; excite individuals and communities to innovate; influence public perception; and celebrate innovations and the efforts of innovators. Traditional problem solving approaches and abilities are fast disappearing and giving way to these new methods because of new tools, technology and particularly the internet and social media. Governments across the globe are making concerted efforts to design focused strategies around Prizes, Challenges and Crowd Sourcing for driving innovation to accelerate the pace of change and development.

The National Innovation Council, as part of its strategy to create an Indian model of innovation and development, has been encouraging the use of Prizes, Challenges and Crowd Sourcing as tools for promoting Inclusive Innovation. NInC conceptualised the 'One MP – One Idea' annual competition; launched the anti-drudgery challenge in Oct 2011 and is in the process of launching more such challenges; and is experimenting with various platforms for crowd sourcing ideas and action.

Initiatives and Progress

NInC has undertaken a number of initiatives to inspire the imagination of citizens.

One MP – One Idea

Indian democracy is hailed as one of the most successful political models around the world. Drawing inspiration from it, the 'One MP-One Idea' leverages the power of India's people through their chosen representatives. This competition will generate and select ideas by galvanizing all constituencies through the Members of Parliament (MP). The MPs will become champions of innovation in their constituencies by campaigning for innovative ideas that have the potential to solve regional and national challenges.

- The Competition, held annually, will invite innovative solutions in the areas of education and skills, health, water and sanitation, housing and infrastructure, agriculture, energy, environment, community and social service, etc.
- Solutions can be submitted by any individual or teams or institutions from the constituency.
- The format for submission of application is given at Annexure-IV.

- The Selection Committee will select the three best innovations for cash awards and next five best innovations for certificate of appreciation.
- Cash awards of Rs. 2.5 lakhs, Rs. 1.5 lakhs and Rs. 1 lakh will be awarded to the first, second and third prize winner respectively (funded from MPLADS).
- The awards shall be given away by the Hon'ble MP in a public function with adequate media coverage.

The 'One MP–One Idea' initiative, proposed by the NInC in 2011, has now been approved by the Lok Sabha and is under the consideration of the Rajya Sabha. Accordingly, the Ministry of Statistics and Programme Implementation has modified the MPLADS Guidelines (Annexure 4) to make provisions for the 'One MP – One Idea' competition.

Challenge to reduce Drudgery

NInC is also using national challenges to inspire inclusive innovation. The first challenge launched by the National Innovation Council was a call for proposals launched in October 2011 to reduce the drudgery of the working class population (Annexure 5). The challenge sought innovative ideas in the areas of design improvement of work implements, better processes, new equipment and techniques for different occupational groups like blue-collar workers, street-vendors, and construction workers. This went with the caveat that proposals should not be labour displacing.

468 proposals were received in a period of 4 months and finally 6 proposals were shortlisted after several rounds of screening. These proposals were sent by institutions and individuals from all backgrounds such as students, engineers, government officials, professionals, and teachers amongst others. The 6 winning innovations included a novel design of a rickshaw, a human powered motor, a display unit for street vendors, a low cost cycle for physically challenged, and devices to reduce the drudgery of construction workers and sanitation workers.

India Grand Challenge Programme

In an attempt to bring the attention of the best talent to challenging national priorities, the National Innovation Council has conceived the India Grand Challenge Programme. NInC will be declaring challenges in areas such as education, health, agriculture, energy, water, etc. in order to find innovations that will bring about change in the lives of the bottom 500 million. These challenges will be widely publicised and will be hosted on the India Innovation Portal (www.innovation.gov.in). NInC will reward the winning innovations with a package consisting of a monetary award and a dialogue with policymakers along with adequate publicity at the national level. These challenges will inspire the imagination of our young for solving problems of the people at the bottom of the pyramid.

Crowd Sourcing and Social Media

Crowd sourcing has emerged as a valuable technique, used by both public and private organizations across the globe to harness the wisdom of a large audience to address challenging problems. Simultaneously, social media provides for engaging the crowd, and making it an active participant in the process of change. NInC believes these paradigms have the power to change the status quo faster than ever before. Using social media to interact with the crowd and to source valuable insights from its diverse constituents, is at the heart of engaging a wider audience – and of thereby fuelling the discourse on innovation and bolstering the innovation movement.

NInC has been experimenting and showcasing ways of leveraging the power of networks, crowd sourcing and social media to bring communities together to discuss, debate and explore solutions to a variety of challenges. These experiments include:

- a) Leveraging the National Knowledge Network (NKN), NInC addressed 10,000 teachers from more than 150 locations across India on education reforms;
- b) Discussing the idea of Innovation Spaces at Science Museums, with representatives of more than 30 science centres across the country using the NKN - making it the first ever virtual meeting of all science centres in the country;

- c) Holding India's first ever Press conference on social media platform Twitter focusing on 'Democratisation of Information';
- d) Creating a Virtual Science Museum channel on YouTube, which has aggregated more than 500 videos that offering engaging content on science, technology and innovations [www.youtube.com/VirtualScienceMuseum];
- e) Capturing and sharing the entire effort and experience of the Tod-Fod-Jod initiative on a Facebook page – allowing participants (young and old alike) to engage in active discourse, become part of the journey and share experiences [<http://www.facebook.com/TodFodJod>].

All the above have been first steps in engaging with interested stakeholders using new age tools and techniques. NInC will continue these efforts in the future and hope to make such interactions popular, more engaging and move towards crowd sourcing for 'action' rather than just 'ideas'.

Inspiring India's Scientific Temper for Innovation

Background

At the Indian Science Congress of 1947, Pandit Jawaharlal Nehru said :

“It is a tragedy that when these enormous forces (of science) are available in the world for beneficial purposes and for raising human standards to undreamt of heights, people should still think of war and conflict and should still maintain social and economic structures which promote monopoly and create differences in standards of wealth between various groups and people. I invite all of you who are present here, young men and old in the field of science to think in these larger terms of India's future and become crusaders for a rapid bettering of the (condition) of the 400 millions in India. I do believe firmly that the only right approach to world problems and to our national problems is the approach of science, that is to say, of the spirit and method of science”.

Our first Prime Minister's words still hold true. The 21st century has brought with it major advances in science and technology. However, a large proportion of our population is yet to learn, utilise and reap its benefits for solving everyday problems. While the foundations of modern India were based on the vision of propagating science in the country, we still have much to do to inspire India's scientific temper.

So how does one ignite the scientific inquisitiveness of the 500 million young Indians? How does one make science relevant to local communities and excite communities to innovate to solve their problems? In its endeavour to promote India's scientific temper and to excite the young minds, the National Innovation Council is recommending creation of Innovation Spaces at Science Centres. Along with this effort, NInC, and the Ministry of Culture, will be building a Virtual Science Centre Portal to attract the growing number of internet users in the country.

Innovation Spaces at Science Centres

The potential of Science Centres across the country as instruments and agents of percolating scientific temper, innovation – and therefore socio-economic development – is underutilised. Though non-formal education through Science centres took root in India more than 50 years ago, the impact of these institutions has been less compared to global precedents. Notwithstanding the need for more science centres in the country, NInC has recommended creation of Innovation spaces at Science centres and also creation of a Virtual Science Centre portal.

The following are ten suggested ideas on creating an Innovation Space at Science centres:

1. **Hall of Fame: Innovations**

Showcase 10 innovations/discoveries in various domains, with focus on Indian/local innovations (for example: Transistor – ICs, Wireless – Telecom, DNA – Genetics, etc.)

2. **Hall of Fame: Innovators**

Present life stories of 5-10 innovators in various domains (for example: C V Raman, Albert Einstein, Steve Jobs, recent Nobel laureates, etc.). Special focus on Indian innovators.

3. Innovation Challenges for a Better Tomorrow

Present 3-5 (innovation) Challenges we face today, with focus on Indian/local challenges (for example: climate change, energy, water, food security, etc.)

4. Local Innovations and Traditional Knowledge

Present 3-5 local innovations and showcase ideas/applications of traditional knowledge (for example: Ayurveda, traditional water harvesting, traditional architecture, etc.)

5. Gadget Technology

Communicate the science and technology behind gadgets of daily use (for example: computers, washing machines, electric stoves, refrigerators, etc.)

6. Emerging Technologies

Showcase emerging technologies (for example: fuel cells, nanotech, green tech, etc.)

7. Industry Sponsored Section

Create a section run by prominent/local industry, showcasing the technology they use in their industry (for example: mining industry, petroleum industry, auto industry, etc.)

8. Innovation Programmes of Government

Showcase programmes and schemes of Central and State Governments promoting, supporting and fostering innovation (for example: National Innovation Council; programmes of DST, DBT, DSIR -TePP, OSD, TKDL; National / International Innovation awards.)

9. Annual Festival of Innovation

Hold inspirational talks, interaction with young and local innovators, screening of special films/documentaries, contests and competitions inviting solutions for specific local challenges

10. Access to portals and online resource materials

Provide access to online resource materials and interesting portals such as the India Innovation Portal, India Biodiversity Portal, India Water Portal, India Environment Portal, etc. A dedicated space should be created where several internet connected computer terminals must be provided by the centre.

Progress

The National Innovation Council is currently discussing the idea of piloting the Innovation Space concept with the National Council of Science Museums (NCSM); National Museum of Natural History, New Delhi and centres like Vikram Sarabhai Community Science Centre, Agastya Foundation and others. NInC also conducted for the first time ever, a virtual conference via the National Knowledge Network on 30th January 2012 with more than 30 science centres from all across India, to discuss Innovation Spaces at science centres. NInC has also launched a Virtual Science Museum Channel on YouTube available at <http://www.youtube.com/VirtualScienceMuseum>. More than 500 videos on various subjects (including science experiments, biology, chemistry, maths; how things work) along with videos on innovators and innovations have been aggregated on this channel.

NInC has also submitted these inputs for inclusion in the 12th Five Year Plan.

Innovation in the Justice System: Technology adoption for timely delivery of justice

Background

In the last decade, the Government has made several efforts to improve access to justice by introducing ICT interventions in Justice Administration. A number of schemes and programs including the e-Court Mission Mode Project, Modernisation of the Police Force Scheme (MPF), Crime and Criminal Tracking Network Schemes (CCTNS), e-COPS have been introduced with the goal of leveraging technology for enhancing the efficiency of these institutions. In order to synergise these efforts and reduce pendency and arrears in the Justice delivery system requires a coherent vision and coordinated action amongst the various stakeholders. It is to this end that the Courts of Tomorrow initiatives was conceptualised.

The foundation for the Courts of Tomorrow Initiatives was laid at the National Mission for Justice Delivery and Legal Reform which was established to realise the objectives set out in the Vision Document of the National Consultation for Strengthening the Judiciary towards Reducing Pendency and Delays. The initiative seeks to act as a force multiplier to the on-going ICT enablement initiatives of the Judiciary, Courts and the Government.

The Courts of Tomorrow initiative suggests the following ten interventions based on a study and analysis of existing initiatives in the Indian courts and with inputs from Judges and Registrars of the Delhi and Bombay High Court. These recommendations are directed towards technology adoption for delivery of timely justice.

1. Information Infrastructure for the Courts
2. Interconnection of Courts, Prisons and Police Stations
3. ICT enabled Court Rooms
4. Integrated Case and Document Management System
5. Digitisation, E-filing and E-Registry
6. E-orders, E-copies and E-causelists
7. E-service
8. E-administration
9. Provide Citizen Centric Services
10. Managed Services Model for the Judiciary

1) Information Infrastructure for the Courts

The on-going ICT enablement of the Indian Judiciary has highlighted the need for a highly secure, reliable and high speed network connecting all the courts in the country. It is suggested that all courts should be brought on to a unified network and a single national data centre. One suggestion is to connect via the National Knowledge Network.

Notes:

- I. As already seen in the Delhi High Court, there is a massive upgradation of their internal network to a high speed, secure and reliable intranet to enable faster transfer of case files, which clearly shows the necessity of a highly secure, reliable and high speed network.
- II. Last Mile Connectivity and WAN is to be provided under the e-courts mission mode project to all court complexes

2) Interconnection of Courts, Prisons and Police Stations

A number of institutions play a key role in the delivery of Justice in the country. Apart from the courts, these include the prisons, police, forensic labs, government hospitals, etc. To speed up exchange of information, all Courts, Prisons and Police Stations must be interconnected and suitable interfaces must be developed to facilitate easy exchange of information. Along with high speed network, suitable facilities for video conferencing, sharing of documents and for audio-video deposition and recording of evidence should be made available. This will allow witnesses (especially high - risk witnesses, child witnesses, old and infirm witnesses) to be present via video conference in the court. It will also encourage audio-video depositions of evidence (supplemented by digital transcriptions; authenticated by the witness and the judges using digital signatures/bio - metric devices such as signature pads and fingerprint readers). Video conferencing can also be used to bring in government officials and experts from the forensic sciences lab, hospitals, etc.

Additional Notes:

- I. The Bombay High Court is successfully communicating with its respective police stations through email since last one year. It gives them speedy access to the police station and vice versa. The communication between the Police Stations and Courts usually happens on the following accounts:
 - a. Police Station to Court: FIRs, any other information updated post the FIR is filed and the final report.
 - b. Court to Police Station: Orders passed and summons issued.
- II. The Delhi High Court has connected to the forensic sciences lab via video conference for several cases and shortly proposes to connect with all prisons in Delhi.

3) ICT enabled Court Rooms

ICT enabled court rooms will revolutionise the way justice is delivered in the country. It will not only decrease the hassles of the court staff, the litigants and the lawyers but also increase the efficiency of the Judges. ICT enabled court rooms will be equipped with touch screen tablets for Judges, along with case management software, access to e-library and other additional hardware and software to facilitate the court proceedings.

Additional Notes:

- I. The first complete paperless e-Court in the Delhi High Court (Court No. 24) started functioning as early as 15th December 2009. As of now 9 courts in the Delhi High Court are running as completely paperless e-Courts.
- II. Bombay High Court is already using video conferencing facility to bring in Judges from different locations in relation to cases.
- III. Additional tools/technologies which could be of use to the Judges in the court room need to be explored. For e.g. Judges could be provided with digital pens and corresponding software/hardware to make (digital) notes.

- IV. Need to move towards use of open source software solutions. Bombay High Court has been successfully using Open Office.
- V. Need to explore on the use of mobile technologies which can be harnessed for improved efficiency of the courts.

4) Integrated Case and Document Management System

An integrated case and document management system will enable smooth flow of case information, easy and any time access to all relevant documents. This system could also provide an inbuilt Case Tracking and Monitoring system along with a time table for each case.

Additional Notes:

- I. The Bombay High Court has developed an interesting mechanism for putting time lines against each case. This software has been developed in house and is an optional/additional functionality made available in the existing system.

5) Digitisation, E-filing and E-Registry

Digitisation: A dedicated effort towards digitisation is required across all courts, as a first step towards paperless E-courts. As detailed under recommendation no. 10, providing of trained manpower and digitisation equipment to the courts should be done by means of a managed services model. All existing cases and court records must be digitised in a phased manner as decided by the respective court. The digitised records must be search friendly and should be indexed by key parameters for easy retrieval of information.

E-filing and E-Registry: While old records and existing cases must be digitised, the next logical step for E-courts is to move towards E-filing, so that new cases need not undergo the tedious task of digitisation and the process of filing is simplified for the litigant and the lawyers. E-Registry is a pre-requisite to E-filing since the scrutiny and verification of the e-filed documents will have to be done by the court registry online. Online payment of court fees must also be made available to make the entire filing process e-enabled.

Additional Notes:

- I. E-filing should not be made mandatory in the beginning but the courts should move towards a complete paperless filing procedure in the next 5 years. Though, to begin with, e-filing may be made mandatory for the largest litigator – the government itself.
- II. According to estimates of the Delhi High Court, e-filing will save approximately 40,000 A4 size pages every day, which is equivalent to saving approximately 5 trees a day. They will also make unimaginable savings on the court real estate since there will be no need to maintain paper files once they completely digitise all old files and reach a stage of mandatory e-filing, thus becoming completely paperless e-courts.
- III. Online payment of court fees has been successfully going on in the Bombay High Court. The State Government of Maharashtra has created an e-payment platform for payments to be made to Government of Maharashtra, through <https://gras.mahakosh.gov.in/echallan/> - The Bombay High Court is encouraging the use of this platform for making e-payments to the High Court. The response to this initiative has been highly encouraging.

6) E-orders, E-copies and E-causelists

E-orders: Orders and judgments dictated in open court or in chambers will be keyed in by the typists onto their

computers which can be accessed by the Judge and corrected including with a digital pen via tablet/PC without requiring any draft being printed on paper. The finalized orders/judgments would be signed by the judge using his digital signature and would be added to the relevant e - case files.

E-copies: Digitally signed copies of orders and judgments would be uploaded instantly onto the court website. E-copies of entire e-case files would also be made available online to the parties or authorized personnel. Certified copies either in paper form or digital form would be provided by the court registry.

E-causelists: The courts should move towards online cause lists which would be made available through the court website and kiosks in the court complexes. Parties and their advocates could be alerted of their next dates via e-mail or SMS.

Additional Notes:

- I. The Delhi High Court has decided to not print any cauelists from 2013 onwards. This major step will make them save almost Rs. 1 Crore/year along with saving 66,000 A4 size paper every day, which is equivalent to saving 8 trees being cut every day.
- II. Almost all High Courts today are providing online cause lists. Some of them are also offering SMS alerts to the registered parties.

7) E-service

The service of summons is one of the principle reasons for delay in a case progressing through the courts. A hybrid system needs to be developed which will use multiple options such as email, SMS along with the use of post offices across the country. Appropriate technology solutions such as use of GPS enabled hand held devices will ensure authenticated and transparent delivery mechanisms.

Additional Notes:

- I. Service of summonses, notices, warrants can be done through use of the Post office for delivery of summons and making payments has been greatly appreciated. A pilot is currently underway at the Delhi High Court in close coordination with the Department of Posts, GoI.

8) E-administration

The court administration will also need to be ICT enabled along with the use of ICT in the courts. To turn the administration paperless, will need a document management system, a workflow based software (like e-office) and digitisation efforts to convert existing documents. Further, e-meetings should be encouraged, where members could participate virtually via video-conferencing and all meeting documents, agendas, etc. could be circulated online. Authentication of documents would be done by using digital signatures. The e-meetings could be fully archived in an indexed database for easy search and retrieval.

Additional Notes:

- I. E-office, a software product developed by NIC, may be used by the various courts to manage their administration and movement of e-files. The Delhi High Court is currently piloting this software for administrative use after appropriate configuration.
- II. The Delhi High Court has been successfully conducting e-meetings. They also have an intranet portal where the agenda, relevant documents and minutes of the meeting are uploaded and archived. They recently had their first full court e-meeting, wherein all Judges joined in through their tablets or iPads, and

all files were made available online. Just one such meeting saved more than 16,000 pages.

- III. The Bombay High Court has recently followed a complete online recruitment process for recruitment of clerks.

9) Provide Citizen Centric Services

Courts must develop an effective citizen interface for providing citizen centric services. Vital information can be made available to the citizens through emails, SMS, mobile apps, IVRS systems and an informative website. IVRS Systems can be used for public queries regarding case status and any other details on court processes. Informative Website should include General Court information; Cause lists; Roster; Display Board; Court fees; Case status; Orders and judgments; Online forms for applications for urgent listing, inspection, process fee etc.; Certified copies; Online filing; Office circulars; Map and directions; FAQ Section, etc.

Additional Notes:

- I. Maharashtra provides a host of citizen centric services through <http://court.mah.nic.in/>
- II. It may be suggested that court websites could be bilingual and should also follow the accessibility policy of the Government of India.
- III. Open source content management tools must be used for developing websites and also for the intranet.
- IV. A very detailed set of FAQs (59 Questions) is available on the Delhi High Court Website at <http://delhihighcourt.nic.in/faq.asp>

10) Managed Services Model for the Judiciary

It is recommended to turn to a managed services model under the functional control of the Courts to increase the efficiency of the system and speed up certain processes. The following human resource needs of the courts could be serviced:

- 1) For Digitisation (man and machine)
- 2) For encouraging and supporting e-filing
- 3) IT Manpower for maintenance, troubleshooting and support
- 4) Judges Support Centre providing secretarial and research support

Additional Notes:

- I. Managed services model has been supported by the Judges in the software sub-group under the National Legal Mission.
- II. The process of digitisation at courts across the country has been very slow or a non-starter because of lack of availability of in-house manpower at the courts. The managed services model will provide trained staff to the courts to enable the complete digitisation of all records of the court.
- III. The Delhi High Court has already set an example, wherein they have outsourced their digitisation work to a particular agency along with setting up of a process and quality parameters to evaluate their work. All digitisation work is done within the Delhi High Court premises by the trained staff of the outsourcing agency. However, a benchmark standard for digitisation must be established before it is rolled out across all courts.

Progress

1. *The Courts of Tomorrow initiative is all set for a state wide pilot at Madhya Pradesh. The High Court of MP; State Government of MP; Office of Adviser to the PM on Public Information Infrastructure and Innovations; and the National Informatics Centre are working closely to implement the vision of the Courts of Tomorrow.*
2. *Pilots at the Delhi High Court are being coordinated by the Office of Adviser to the PM on Public Information Infrastructure and Innovations. These include use of the e-Office software for administrative uses; delivery of summons by using the postal system; new hardware configurations for ICT enabled court rooms, etc.*
3. *The Office is working closely with the e-Committee of the Supreme Court, the Ministry of Law and Justice, the Ministry of Home Affairs to define data models, interfaces and exchange protocols for integration of courts, police and prison systems.*

Partnering for Innovation: Collaboration and Networks

Background

Platforms for collaboration and networking can have a significant impact on driving innovation in the knowledge economy. Globally, the value of creating shared pools of knowledge for collective solution building is being recognised. These platforms enable sharing of ideas for needs-based solution building, leveraging existing knowledge, sharing of real time information and cross-fertilisation of thinking. In an increasingly globalised world, these mechanisms of collaboration become even more significant to leverage the most innovative thinking from around the world to create global networks for research, cooperation and co-creation. Advances in information technology have further revolutionised the kind of collaborations and networks that are possible in the new knowledge economy and this holds unprecedented potential for the quality of innovation.

The Global Roundtable on Innovation

Most governments around the world are prioritising innovation as they realise that promoting innovation is the key for a nation to become more productive, stay competitive and sustain economic growth. To foster collaborations on innovation, exchange ideas and create a platform for knowledge sharing and collective solution building, the National Innovation Council hosted the first Global Roundtable on Innovation in New Delhi on 14th-15th November 2011, in collaboration with the World Bank Institute. The heads of innovation from 15 Governments were invited to come together to discuss the role of innovation in improving growth and welfare. The key objective of the Roundtable was to explore the relatively less charted road of broad-basing innovations to meet key development challenges, share cross-country experiences and develop a paradigm for inclusive innovation. The countries represented included the U.K., the United States of America, Australia, France, Canada, Mexico, Israel, Sweden, Netherlands, Brazil, Germany, Japan, South Africa, and EU.

The Roundtable focused on stimulating greater global cooperation across countries and formation of networks, sharing experiences to make innovations a prime driver for collective solution building, and discussing innovations that have addressed the needs of the Base of the Pyramid (BOP) population.

During the first day, four sessions on 'Global Innovation Eco systems,' 'Dreaming It and Doing It,' 'Learning from Global Good Practices,' and 'Developing an Innovation Eco system' were held. During the second day, three sessions on 'Taking Innovations to Scale,' 'Innovation and Intellectual Property,' and 'Global Collaboration on Innovation' were held.

The Roundtable gathered diverse perspectives and accessed global knowledge on innovation as a means to create sustainable and cost effective solutions for the BOP population. It also drew significant support from the Indian government. The Prime Minister of India, while releasing the National Innovation Council's 'Report to the People' on the second day of the Roundtable stated, “We view innovation as truly a game changer to move from incremental change to radical change. It is, therefore, our resolve to build an enabling environment for innovation to flourish in our country.”

The discussions echoed the need to have a long-term approach to fostering innovation. It was also stressed that the public sector, private enterprises, social sector and venture capital industry need to partner and support programmes and policies that enhance the national innovative capacity. In making this happen, universities, industry and research institutes need to play a multi-faceted role in cultivating innovation by creating public knowledge exchange platforms, promoting problem solving skills, and fuelling innovative research.

The Roundtable concluded with various global participants proposing further collaboration and knowledge exchange to mobilise resources, continuing the systemic focus on promoting inclusive innovation and convening a Second Global Innovation Roundtable in a year.

This year the National Innovation Council is hosting the Second Global Innovation Roundtable in November where heads of innovation policy from 50 Governments are coming together to discuss innovation perspectives and share best practices.

Open Government Platform (OGPL)

During US President Barack Obama's visit to India in November 2010, President Obama and Prime Minister Dr Manmohan Singh agreed to work together to exercise global leadership in support of open government and democratic values. The two leaders launched a U.S.-India Open Government Dialogue with a view to harness public-private partnerships, using new technologies and innovations, to promote their shared goal of democratising access to information and energising civic engagement, supporting global initiatives in this area, and sharing their expertise with other interested countries. The Dialogue was led by the Adviser to the Prime Minister, Mr Sam Pitroda, on the Indian side and then White House Chief Technology Officer Mr Aneesh Chopra on the US side (who has since completed his stint).

Subsequently, the two countries worked together to develop an Open Government Platform (OGPL) to promote transparency and greater citizen engagement by making more government data, documents, tools and processes publicly available in useful machine-readable formats to develop new applications for citizen benefit. OGPL combines and expands the best features of the U.S. "Data.gov" and India's "India.gov.in" sites, and will be offered freely to other governments using the open-source model and community to provide future technology enhancements, implementation practices and technical support.

The purpose of the platform is to enhance access and use of government data to foster innovation; improve delivery of government services for interested countries and cities around the world; and promote government transparency, accountability, and public participation. OGPL is more than just a software product – it also includes documentation to help governments create their own national data sharing policies.

OGPL's initial version was released on 30th March 2012. In India, simultaneously, a National Data Sharing policy has been announced by the Government of India wherein within 6 months each Government Department would release at least five data sets to be made public.

Currently, pilot testing of OGPL in interested third countries has begun. The aim would be to ensure global availability of OGPL by the middle of 2013. In India the data portal (<http://data.gov.in>) has been built using OGPL and is already live.

The core of OGPL is the data, documents, tools, processes that governments will share and an on-line community that engages citizens on their data and information needs. OGPL will then facilitate the development of new applications that will be created by developers around the world for benefit of citizens.

OGPL will enable Governments to:

- Develop applications and mobile apps to view, use, and merge various datasets;
- Create challenges or competitions to accelerate and promote applications and new businesses around government data;
- Offer online citizen services such as forms, registrations, and applications;
- Allow user-friendly links to regulatory, statistical, and other information compiled by government agencies.

Developers will be able to develop applications to view, use, and merge various datasets building from:

- OGPL's open source architecture to create new ways to view, compare, and use governance data enabling web-based innovative applications and lower cost, rapid development;
- Merging geographic data with agency data to create easy-to-understand maps showing employment, environmental, community health, or other data.

With the launch of OGPL comes the opportunity to engage the public in improving government transparency and accountability – not only for the governments of India and the United States, but any country seeking to open their data to the world. This is an excellent example of intergovernmental partnership in openly sharing capabilities and code, and forging a commitment to continue to operate into the future on a shared, open platform. The bilateral collaboration itself has innovated in government development programs by conducting a joint technical project using new media tools like Skype and GoogleDocs and open source technologies like GitHub to build OGPL software in less than 6 months (with only one face-to-face meeting of the US and India technical teams to kickoff the project).

On the Indian side, the support of the Ministry of External Affairs has been critical and the technical leadership has been provided by the National Informatics Centre, Government of India.

Innovation Partnerships

With the support of the Ministry of External Affairs, the National Innovation Council has also initiated several rounds of interactions with the Ambassadors of African and Latin American countries to chart out potential areas of collaboration on innovation – ranging from leveraging of India's expertise in the National Knowledge Network, to creating partnerships for setting up of knowledge and innovation institutes.

National Knowledge Network

The National Knowledge Network (NKN) is being developed by the Government of India as a high speed multi gigabit network which aims to connect the country's educational and research institutions for real time research and collaboration. Currently 877 institutions are connected on NKN. The NKN by networking all knowledge institutions and providing them with high speed connectivity aims to facilitate flow of information and create a platform for collaboration between researchers, academic faculty and students from diverse backgrounds and geographies. NKN also enables global collaboration by linking researchers from different educational and research networks from across the world, such as TEIN3, CERN, GLORIAD and so on.

NKN is already connected to TEIN3. TEIN3 is the third-generation Trans-Eurasia Information Network, a dedicated high speed regional research and education network in Asia and Europe. It provides a large-scale research and education data-communications network for the Asia-Pacific region. Its purpose is to extend and

encourage research and education IP connectivity, linking Asia-Pacific researchers to each other and to their counterparts in Europe. It does this via fast, direct links to Europe's multi-gigabit GEANT network, providing the Asia-Pacific countries with a gateway for global collaboration. Presently Australia, China, India, Indonesia, Japan, Korea, Laos, Malaysia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand and Vietnam are connected through TEIN3 network. TEIN3 plays a key role in the timely transmission of global meteorological data, which permits faster local weather forecasting. TEIN3 allows students across the region to attend remote lectures via interactive video-conferences.

The Large Hadron Collider (LHC) is a large particle accelerator near Geneva, spanning the border between Switzerland and France and located about 100 m underground. The system is being used by physicists to study the smallest known particles, the fundamental building blocks of matter. Physicists will use the LHC to recreate and study the conditions just after the Big Bang. LHC will produce roughly 15 petabytes (15 million gigabytes) of data annually. Data from the LHC experiments is being distributed around the globe, with a primary backup recorded on tape at CERN. After initial processing, this data is distributed to eleven Tier-1 centres which make the data available to over 160 Tier-2 centres for specific analysis tasks. Individual scientists can then access the LHC data from their home country, using local computer clusters or even individual PCs. NKN currently connects two Tier-2 centres namely the Variable Energy Cyclotron Centre (VECC) and the Tata Institute of Fundamental Research (TIFR). The ALICE AND CMS Experiments are now supported on the NKN, with many universities are participating on it.

GARUDA is a grid computing platform consisting of high performance computers which are now connected via NKN. 45 research and academic centres, including more than 36 partner institutions, centres of the Centre for Development of Advanced Computing (C-DAC) are participating in the GARUDA. Research has been initiated in Semantic Grid Services, Integrated Development Environments, Storage Resource Managers, Network Simulation and Grid File Systems.

C-DAC is also collaborating in the EU-India Grid project which will allow researchers and scientists across Europe and India to conduct simulation experiments on EGEE and GARUDA grids. Efforts are on to integrate the technology components of both the grids, which would enable the users to access the resources and services across the grids in a secure and seamless manner.

Remote Physics Experiment at ESRF (Experimental Synchrotron Research Facility), Grenoble, France on NKN

An experiment has recently been conducted accessing the Synchrotron at Grenoble, France from Homi Bhabha National Institute (HBNI), Mumbai, on NKN, for protein crystallography studies. Radiation produced in a third generation synchrotron is available only in a very few countries. This radiation has been used to determine the three dimensional structure of molecules by crystallography, enabling studies on structure-function relationships in biological macromolecules and design of new drugs.

NKN also plans to reach the US and connect to various other research networks like Internet2 / CANARIE/ GLORIAD/ NYSERNET/ in the US and similar RENs in the Asia Pac region.

Progress

The Second Global Innovation Roundtable will be held on 1st and 2nd November in New Delhi which will be a platform for discussing new collaborations and partnerships around the theme of inclusive innovation.

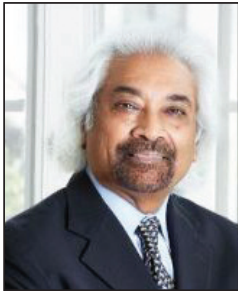
OGPL's initial version was released on 30th March 2012. In India, simultaneously, a National Data Sharing policy has been announced by the Government of India wherein within 6 months each Government Department would release at least five data sets to be made public. Currently, pilot testing of OGPL in interested third countries has begun. The aim would be to ensure global availability of OGPL by the middle of 2013. In India the data portal (<http://data.gov.in>) has been built using OGPL and is already live.

The National Knowledge Network has connected around 877 nodes in the country. NKN also plans to reach the US and connect to various other research networks like Internet2 / CANARIE/ GLORIAD/ NYSERNET/ in the US and similar RENs in the Asia Pac region.

National Innovation Council Members

National Innovation Council

Members



MR. SAM PITRODA
Chairman

Adviser to the Prime Minister
Public Information Infrastructure



MR. ARUN MAIRA
Member

Member, Planning Commission



DR. K. KASTURIRANGAN
Member

Member, Planning Commission



DR. RAMESH MASHELKAR
Member

Chairman, National Innovation Foundation



MR. KIRAN KARNIK
Member

Former President, NASSCOM



DR. DEVI SHETTY
Member

Founder, Narayana Hrudayalaya



MR. R. GOPALAKRISHNAN
Member
Executive Director, Tata Sons



MS. KIRAN MAZUMDAR SHAW
Member
Chairman & MD, Biocon



MR. SHEKHAR KAPUR
Member
Film Director & Producer



MR. SAURABH SRIVASTAVA
Member
Chairman, CA Technologies



DR. ANIL GUPTA
Member
Executive Vice Chair, National
Innovation Foundation



DR. SUJATHA RAMDORAI
Member
Professor, TIFR



MR. CHANDRAJIT BANERJEE
Member
Director General, CII



DR. RAJIV KUMAR
Member
Secretary General, FICCI



DR. SAMIR K. BRAHMACHARI
Member
Director General, CSIR



DR. SANJAY DHANDE
Member
Director, IIT Kanpur

R Gopalakrishnan

1955 - 2012

A Tribute

“Mr. R.Gopalakrishnan, a 1979 batch IAS officer and the Member Secretary of the National Innovation Council was a visionary thinker, a leader with immaculate intellect, and someone who worked tirelessly to translate our ideas into implementable actions on the ground. My long association with Gopal made me appreciate his immense integrity and dedication as a one of his kind person who displayed immense integrity and dedication in everything that he undertook.

We will feel his loss going forward.”

– Sam Pitroda

Chairman, NInC

“Mr. Gopalakrishnan was one of those rare civil servants who combined a profound respect for the sanctity of government processes with a deep insight into how businesses work and the practical imperatives of time, constantly arriving at outcomes in the best interests of the nation “

– Saurabh Srivastava

Member, NInC and Chairman, CA Technologies

“Mr. Gopalakrishnan was an astute bureaucrat and an exceptional human being. His exemplary work as Additional Secretary in PMO during the last decade, and in National Innovation Council lately, despite his prolonged illness, was highly inspiring and reflects his intellect and his passion to work for the people and development of the country. I feel privileged to have worked with Mr. Gopalakrishnan during my association with NInC as a member. We in CII would continue to translate his vision into action by integrating innovation into industry operations.”

– Chandrajit Banerjee

Member, NInC and Director General, CII

“One could not help be awed by the immense courage and humility of Mr. Gopalakrishnan. Courage to continue life and work with utmost normalcy while battling the life threatening forces that were engulfing him from within; humility for his ability to be compassionate to every point of view, despite his incredible intellect and achievements; to be open to anything new, exciting and innovative on the horizon.

It's been an honour, pleasure and a huge learning experience to have known and interacted with Mr. Gopalakrishnan over the years as a colleague, mentor and friend.”

– Shekhar Kapur

Member, NInC and Film Director and Producer

“Gopal was a man of integrity and deepest dedication to the causes he believed, which included the timeless ideals of humankind. I first met him when I was a member of the NKC and his quiet, gentle and professional attitude left a deep impression on me. It is a sad loss to the country that a person like him was snatched away at a time when people of his ilk are needed most.”

– Sujatha Ramdorai

Member, NInC and Professor, TIFR

“Gopal was one of the most authentic professionals I came across in last three decades. He would say what he meant and his heart was always in the right place. I met him first in 1982-83 at Alirajpur, then part of Jhabua district, Madhya Pradesh where Ravi Mathai was leading an action research project on similar people, dissimilar administrative systems. Gopal knew the limits of the system but always tried to transcend them for a larger social purpose. I am sure he will continue to inspire younger officers in the Indian administration and others to leverage their social privileges for the well-being of disadvantaged people.”

May his tribe grow.

– Anil Gupta

Member, NInC and Professor, IIM Ahmedabad

“Gopal was incredibly selfless. I often wondered whether he was real. God does not seem to make too many like him. I wonder why.”

– R. Gopalakrishnan

Member, NInC and Executive Director, Tata Sons

“Mr. Gopalakrishnan epitomised contribution of intellectual brilliance with an extraordinary compassion, a true Gandhian in spirit and practice, a champion of inclusive innovation, who will be missed in NInC always.”

– Samir K Brahmachari

Member, NInC and Director General, CSIR

Annexures

Annexure 1

Institutes Connected through National Knowledge Network (NKN)

Institutes By Categories				
S.No.	Name Of Category	Number of institutes	Number of Institutes commissioned	Number of Institutes to be commissioned
1	Army	3	2	1
2	Ayurvedic	8	5	3
3	Ayush	1	0	1
4	C-DAC	11	11	0
5	C-DOT	2	2	0
6	Central University	10	8	2
7	CSIR	45	45	0
8	DAE	42	37	5
9	DBT	14	14	0
10	Deemed University	12	11	1
11	DRDO	50	22	28
12	DST	23	21	2
13	Engineering	86	48	38
14	Ernet	10	10	0
15	Homeopathic	4	2	2
16	ICAR	50	46	4
17	ICFRE	12	7	5
18	ICMR	23	22	1
19	IIM	12	9	3
20	IIT	14	14	0
21	Institute	2	1	1
22	NIXI	1	1	0
23	ISI	3	3	0
24	ISRO	19	16	3
25	IISER	5	5	0
26	Management	6	5	1
27	Mass Communication	1	1	0
28	Medical	171	113	58
29	MOES	15	15	0
30	NIFT	13	5	8
31	NIT	13	11	2
32	NPTI	3	3	0
33	NTRO	7	4	3
34	Power Ministry	7	7	0
35	RBI	2	2	0
36	Research	14	14	0
37	SAU	19	11	8
38	SDC	18	14	4
39	State University	37	18	19
40	SWAN	20	17	3
41	UGC	4	4	0
	TOTAL	812	606	206

*5 entries are part of NIC circuits, therefore not included under the category list.

Institutes By Geography

S.No.	Name Of Category	Number of institutes	Number of Institutes commissioned	Number of Institutes to be commissioned
1	Andhra Pradesh	63	40	23
2	Arunachal Pradesh	1	0	1
3	Assam	22	21	1
4	Bihar	23	12	11
5	Chhattisgarh	14	9	5
6	Chandigarh(U.T.)	13	13	0
7	Delhi	79	65	14
8	Goa	8	6	2
9	Gujarat	31	16	15
10	Haryana	12	9	3
11	Himachal Pradesh	11	11	0
12	Jammu & Kashmir	9	6	3
13	Jharkhand	13	10	3
14	Karnataka	63	45	18
15	Kerala	48	36	12
16	Madhya Pradesh	33	21	12
17	Maharashtra	97	80	17
18	Manipur	5	5	0
19	Meghalaya	8	7	1
20	Mizoram	2	0	2
21	Nagaland	1	1	0
22	Odisha	22	13	9
23	Puducherry(U.T.)	6	3	3
24	Punjab	16	16	0
25	Rajasthan	23	15	8
26	Sikkim	1	0	1
27	Tamil Nadu	59	44	15
28	Tripura	2	1	1
29	Uttar Pradesh	63	52	11
30	Uttarakhand	17	8	9
31	West Bengal	52	46	6
	TOTAL	817	611	206

Overall Connectivity Status-Institutes			
S. No.	Particulars	Total	Total Commissioned Institutes
1.	No. of Institutes Commissioned	611	877
2.	No. of Institutes Commissioned in NMEICT	266	
3.	No. of Institutes Provisioned	54	
4.	No. of Institutes to be provisioned	158	
	TOTAL	823	

Institutes by Service Provider					
S.No.	Name of Service Provider	Total Institutes	Double Links	Commissioned	Provisioned
1.	BSNL	111	0	65	65
2.	MTNL	53	3	49	49
3.	Powergrid	277	9	236	250
4.	Railtel	316	10	209	260
5.	NKN	56	0	52	52
	TOTAL	813	22	611	676

*TSP allocation of 6 institutes is in progress

Annexure 2

Innovation in Government, reflected in Result Framework Document (RFD)

	Objective	Actions	Success Indicator	Unit	Weight	Excellent	Target / Criteria Value			
							Very Good	Good	Fair	Poor
1	Efficient Functioning of the RFD System	Timely submission of Draft for Approval	On Time submission	Date	2%	100% Mar. 5 2012	90% Mar. 6 2012	80% Mar. 7 2012	700% Mar. 8 2012	60% Mar. 9 2012
		Timely submission of Results	On Time Submission	Date	1%	May1 2012	May3 2012	May4 2012	May5 2012	May6 2012
2	Administrative Reforms	Implement mitigating strategies for reducing potential risk of corruption	% of Implementation	%	2%	100	95	902	85	80
		Implement ISO 9001 as per the approved action plan	Area of operations covered	%	2%	100	95	90	85	80
		Identify, design and implement major innovations	Implementation of identified innovations	Date	2%	Mar. 5 2013	Mar. 6 2013	Mar. 7 2013	Mar. 8 2013	Mar. 9 2013
3	Improving Internal Efficiency/responsiveness/ service delivery of Ministry/Department	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	2%	100	95	90	85	80
			Independent Audit of implementation of public grievance redressal system	%	2%	100	95	90	85	80

Annexure 3

Sectoral and State Innovation Councils

Sectoral Innovation Councils Update

- 1 Ministry of Communications and IT (2)
Department of Telecommunications
Department of Information Technology
- 2 Ministry Of Steel
3. Ministry of Commerce and Industry (2)
Department of Commerce
Department of Industrial Policy and Promotion
- 4 Ministry of Health & Family Welfare
- 5 Ministry of Heavy Industries
- 6 Ministry of Shipping
- 7 Ministry of MSME
- 8 Ministry of Law & Justice
- 9 Ministry of Civil Aviation
- 10 Ministry of Youth Affairs and Sports(1)
Dept of Youth Affairs
- 11 Ministry of Road Transport & Highways
- 12 Ministry of Labour & Employment (3)
Simplification and Amalgamation of Labour Laws
Rashtriya Swasthya Bima Yojana
Occupational Safety and Health
- 13 Ministry of Chemicals and Fertilizers (1)
Department of Fertilizers
- 14 Ministry of Petroleum & Natural Gas
- 15 Ministry of Information & Broadcasting
- 16 Ministry of Railways
- 17 Ministry of Power
- 18 Ministry of Science and Technology (1)
Department of Scientific and Industrial Research
- 19 Ministry of Tribal Affairs
- 20 Ministry of Drinking Water Sanitation & Rural Development
- 21 Ministry of Agriculture

Total No. of Sectoral Innovation Councils formed : 26

State Innovation Councils Update

- 1 Manipur
- 2 Himachal Pradesh
- 3 Arunachal Pradesh
- 4 Madhya Pradesh
- 5 Lakshadweep
- 6 Mizoram
- 7 Uttar Pradesh
- 8 Bihar
- 9 Karnataka
- 10 Puducherry
- 11 Rajasthan
- 12 Andaman and Nicobar Islands
- 13 Assam
- 14 Goa
- 15 Haryana
- 16 Meghalaya
- 17 Punjab
- 18 Kerala
- 19 Jharkhand
- 20 Tripura
- 21 Nagaland
- 22 Chattisgarh

Total No. of State Innovation Councils formed: 22

Annexure 4

One MP – One Idea

Circular No RG -4/2012

Member of Parliament Local Area Development Scheme



सत्यमेव जयते

भारत सरकार
सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय
सरदार पटेल भवन, नई दिल्ली-110001

GOVERNMENT OF INDIA
MINISTRY OF STATISTICS & PROGRAMME IMPLEMENTATION
SARDAR PATEL BHAWAN, NEW DELHI-110001
FAX : 011-23364197
E-mail : mplads@nic.in

-File No. C/17/2009-MPLADS

Dated.....17.09.2012

To

The Commissioners,
Corporation of Kolkata/Chennai/Delhi
Districts Collectors/District Magistrates /Deputy Commissioners.

Sub: - Modification of MPLAD Guidelines-one-MP -one Idea.

Sir/Madam,

In supersession of Para 3.36 and Para 14, 14.1, 14.2 of Annexure II A and Annexures X, X-A, X-B & X-C of the guidelines of MPLADS, issued in August 2012, the following may be replaced as Paras 3.36, 3.36.1 and 3.36.2 in the MPLADS revised Guidelines of August, 2012:-

“3.36 One MP- One Idea: In order to foster a grass-root bottoms-up approach to innovation and development and to arrive at solutions for local problems, which are sustainable and scalable, there is a need for seeking out and campaigning for ideas that have the potential to solve challenges. Accordingly, based on the innovative ideas received from the local people regarding developmental projects, a ‘One MP – One Idea’ Competition may be held in each Lok Sabha constituency annually to select the three best innovations for cash awards and certificate of appreciation for next five best innovations. These awards will be given on the specific request of Hon’ble MPs to promote such a scheme in their constituency. The announcement calling for applications in prescribed format would be made by the Nodal District Authority through various media viz. print, radio, television etc. It must be ensured that the announcement details are put up on the relevant website(s) as well. The Competition will invite innovative solutions in the areas of education and skills, health, water and sanitation, housing and infrastructure, agriculture, energy, environment, community and social service, etc. The innovative solutions can be submitted by any individual or by a group of individuals, industry, industry consortia, academia, NGO or other institution from the constituency. The format for submission of application is given at Annexure-I. All entries will follow the same screening process.

3.36.1 A Selection Committee may be set up with the mandate to screen all applications. The Selection Committee shall be headed by the DC/DM of the Nodal District and shall consist of eight members from (i) Engineering, (ii) Finance, (iii) Health and sanitation, (iv) Academia,(v) Industry (vi) Banking and Financial Institutions and (vii) two members from Social sector/NGOs to be nominated by

Hon'ble MP. The members from Engineering, Finance, Health and Sanitation sectors will be nominated by DC/DM and should be from the Central/State/UT Government. The members from Academia, Industry and Banking & Financial Institutions shall be of repute & distinction in their own field and shall be nominated by DC/DM. The Selection Committee will select the three best innovations for cash awards and next five best innovations for certificate of appreciation. In the event a large number of applications are received, DC/DM, in consultation with Hon'ble MP, may constitute a Screening Committee for initial screening of the potential applications for further evaluation by the Selection Committee.

3.36.2 Cash awards of Rs. 2.5 lakhs, Rs. 1.5 lakhs and Rs. 1 lakh will be awarded to the first, second and third prize winner respectively. In addition to the award money, other administrative expenditure involved in arranging such events including issuing advertisements, holding meetings, etc., subject to a maximum of 10% of the total awards' amount of Rs. 5 lakhs, Rs. 50,000/- will also be permissible under the MPLADS Guidelines. The total amount of awards of Rs. 5 lakhs and administrative expenditure of Rs 50,000/- will be debited to the MPLADS funds of the Hon'ble MP promoting the Scheme. In order to ensure that the scheme would be able to foster a spirit of innovation and grass-root level competitiveness and spur the innovation movement in the country by involving a large cross section of people, the award function should be given a wide publicity. The awards shall be given away by the Hon'ble MP in a public function with adequate media coverage. A Certificate of honour as per Annexure – II will be given to the awardees. The Certificate of appreciation as per Annexure - III will also be given to the next 5 best innovations.”

2. These instructions may be strictly adhered to.
3. This issues with the approval of Hon'ble Minister, Ministry of Statistics & Programme Implementation

Yours faithfully,



(R. Rajesh)

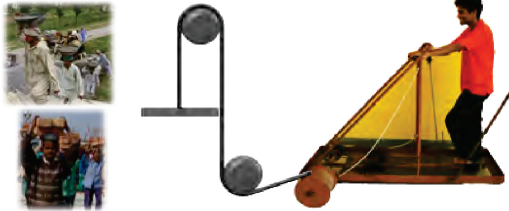
Director (MPLADS)

Copy for information to:

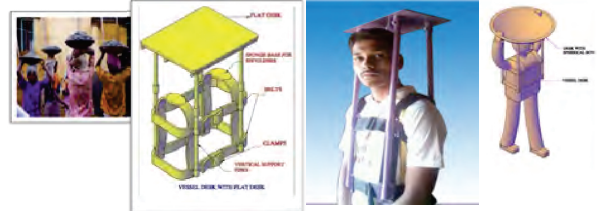
13. All Hon'ble Members of Parliament (Lok Sabha/Rajya Sabha).
14. The Secretaries, Nodal Departments, dealing with MPLADS (All States/UTs).
15. Rajya Sabha Committee on MPLADS, Rajya Sabha Secretariat, New Delhi.
16. Lok Sabha Committee on MPLADS, Lok Sabha Secretariat, New Delhi.
17. To all concerned in MPLADS Division.
18. NIC for uploading on the MPLADS Website.

Annexure 5

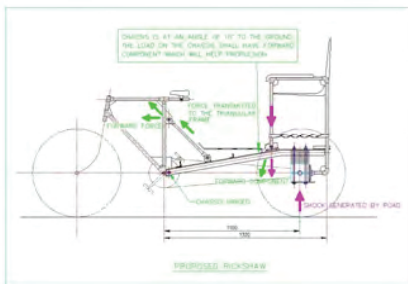
Innovation Challenge to Reduce Worker Drudgery Winning Proposals



HUMOTOR: A HUMANE WAY OF UTILIZING HUMAN EFFORTS
Dr. Sandipan Bandhopadhyay and team



VESSEL DESK FOR CONSTRUCTION WORKERS
Raghunath Pandurang Loхар



AN INNOVATIVE DESIGN OF A RICKSHAW
Pratik Kumar Ghosh



DISPLAY UNIT FOR HAWKERS/ STREET VENDORS
Manjunath Butta



CYCLE FOR PHYSICALLY CHALLENGED
Ajith T. Alex, Aanand Ganesh, Mahesh P.V



PICKING GRAB FOR SANITATION WORKERS
Jitendra Nath Das

Visit www.innovationcouncil.gov.in for more details.

Annexure 6

India Innovation Portal
www.innovation.gov.in

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GOVERNMENT OF INDIA
National Innovation Council



INDIA INNOVATION PORTAL
Decade of Innovations 2010-2020

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Platform
Inclusion
Eco-System
Drivers
Discourse

ROADMAP FOR INNOVATION

Discourse

Space for discourse will be critical to our Innovation Strategy to accommodate alternative views and voices and provide avenues for debate.

Innovation is increasingly being seen as the currency of 21st century. The future prosperity of India in the new knowledge economy will increasingly depend on its ability to generate new ideas, processes and solutions, and through the process of innovation convert knowledge into social good and economic wealth.

The India Innovation Portal(IIP) is envisaged to network people, ideas and experiences and resources to galvanise the innovation community in India. The portal offers each user the power to personalize the portal and also to connect with the other users through the Innovation Communities. The IIP is one of the key initiatives of the **National Innovation Council**.

The India Innovation Portal has classified various innovation resources under Knowledge, News, Events, Media and Directories. It gives you the flexibility to navigate the portal either through sectors, users or needs and provides you with further filtering mechanism in each of these sections.

Register with IIP and avail...

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- Bookmarking capabilities
- Innovation alerts
- Content upload

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This section presents to you resources on **innovations happening across 9 sectors**



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Users

This section offers innovation resources categorised for different users such as **Academia, Entrepreneurs, Industry, Government and Civil Society**



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Needs

This section offers resources for various innovation needs such as **Funding, Policy, Intellectual Property Rights and Innovation Toolkits**.



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Annexure 7

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Innovation Toolkit
National Innovation Council

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Innovation Toolkit

“Information repository for first-timers and practitioners to plug knowledge gaps and to enhance innovation quotient.”

<h3>CIC</h3>  <p>The Cluster Innovation Centre (CIC) is the hub of the cluster ecosystem. The CIC is envisaged to connect the various cluster stakeholders together foster the innovation quotient of the cluster.</p> <p>READ MORE >></p>	<h3>Innovation Mgmt.</h3>  <p>Proper processes are essential for efficient utilization of resources invested. These help in sustaining an innovation culture and in taking an integrated approach to growth and development.</p> <p>READ MORE >></p>	<h3>IPR</h3>  <p>IP protection and exploitation are important pillars for sustained growth. Understanding the intricacies of IP rights and various forms of IP protection thus becomes imperative.</p> <p>READ MORE >></p>	<h3>Tools</h3>  <p>Various tools and techniques are used by experts and practitioners globally to maximize outputs, for idea generation and to help concentrate efforts. These aid in improving productivity of the work being carried out as part of a process.</p> <p>READ MORE >></p>
<h3>Cluster Dev.</h3>  <p>Repository of information on cluster development for enhancing the productivity and competitiveness of SMEs.</p> <p>READ MORE >></p>	<h3>Govt./Agencies</h3>  <p>The Govt. and various agencies have varied institutional and policy mechanisms in place to support growth and innovation which can be leveraged.</p> <p>READ MORE >></p>	<h3>Directories</h3>  <p>Useful directories of professional Government and non-Government organizations and individuals.</p> <p>READ MORE >></p>	<h3>Library</h3>  <p>Good to know and good to have information on various topics including innovation, industry, management and entrepreneurship.</p> <p>READ MORE >></p>

CONTACT US



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