Report to the People
FIRST YEAR

NATIONAL INNOVATION COUNCIL
GOVERNMENT OF INDIA

NOVEMBER 2011
“Uttishthata jagrata
Prapyavaran nibodhata
Kshurasydharana nishita”
Kathopanishad

“Arise, awake
Empower yourself through knowledge
As sharp as the razor’s edge”
Realising that innovation is the engine for national and global growth, employment, competitiveness and sharing of opportunities in the 21st century, the Government of India has declared 2010-2020 as the ‘Decade of Innovation’. To prepare a roadmap for innovation in the country, and formulate and implement a model of inclusive innovation, the Prime Minister constituted the National Innovation Council (NInC) in September 2010. The National Innovation Council began its work in November 2010 and is happy to present its first Report to the People which provides an overview of the activities and initiatives of the Council.

While India has a significant legacy of innovation evidenced in its imagining the “city”, the earliest “university” and path-breaking ideas in mathematics, there has been a disjuncture in the recent past in its quest for knowledge and failures in its education system to sustain the spirit of innovation. India has unique challenges and large unmet needs across diverse areas such as health, education, skills, agriculture, urban and rural development, energy and so on. The country also has significant challenges of exclusion and inequitable access due to multiple deprivations of class, caste and gender – all of which require innovative approaches and solutions, and looking beyond the conventional way of doing things. Innovation is going to be central to providing answers to the most pressing challenges in our country and for creating opportunity structures for sharing the benefits of the emerging knowledge economy and knowledge society. India is also uniquely poised to reap the advantages provided by a nation of a billion connected people, with over 800 million mobile phones, and global leadership in Information and Communication Technology and software. This connectivity as well as ICT talent is changing the nature of processes, business, industry, governance, education and delivery systems: and our innovation thinking has to leverage the unprecedented advantages provided by this changing landscape of connectivity, networks, openness, technology and collaboration.

However, the challenge before India is to develop an inclusive model of innovation that will move the country to become not merely a knowledge-producing economy but a knowledge-sharing society that will have relevance to many parts of the world. This is a challenge that the National Innovation Council has taken upon itself. In doing so, it seeks to reclaim India legacy in global thought leadership.

Innovations in the last two centuries have been driven by the needs of the developed world. India has continuing challenges arising from unmet needs in critical areas like health, education, employment and economic and social wellbeing. Its complex challenges cannot be addressed through incremental approaches. Instead it calls for massive change – in fact, tectonic shifts that only innovation can enable. Innovation for India and many such developing countries is therefore not just a need but an imperative.

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 safety, efficiency, and utility of such products. The Indian approach could also provide an innovation model for developing countries across the globe confronting similar challenges of inclusion.

NInC 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 re-define innovations to go beyond formal R&D parameters and look at innovation 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, and to facilitate the birth of new ideas. 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.

India, as Prime Minister Manmohan Singh repeatedly says, is a global experiment at promoting economic development along with political democracy for a billion plus people. Innovation holds the capacity to both accelerate economic development through cheaper and affordable products and services, but also share social opportunity. In doing so it can become the “tide that lifts all boats”, an orbit-changer and help radicalise its democracy to unleash the energies of over a billion people. This in turn can co-create a more prosperous, more informed, more humane and more equal society.

The National Innovation Council sees itself as a catalyst in this effort to break barriers that constrain us and enable us to see and seize new opportunities. To achieve this objective it is working with multiple agencies in Union and State governments, academia, professional groups, industry and collectives of communities. The Report presents an overview of the first year of our work in this direction. In this endeavor the support and commitment of all the members of the National Innovation Council, the Prime Minister’s Office, the Cabinet Secretariat and all the Ministries concerned has been critical.

Some key initiatives that NInC has focused on in the past year include: (a) Developing a framework to finance innovation for the Bottom of the Pyramid through the creation of an India Inclusive Innovation Fund; (b) 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; (c) Leveraging our demographic dividend for innovation by creating a connected India through the spread of rural broadband in two years time to all 250,000 panchayats; (d) Nurturing 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, creation of a Meta University, as a global first, that rides on the National Knowledge Network to promote multi-disciplinary learning, facilitating the creation of innovation ecosystems at Universities through University Innovation Clusters; (e) Promoting an innovation culture through action in areas of communication and advocacy through an Innovation Portal and
working through mass media organisations; (f) Creating 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; (g) Promotion of projects that create an innovation dividend like the setting up of a Rabindranath Tagore Knowledge City in Kolkata, setting up twenty Innovation Design Centres co-located in existing institutes; (h) Setting challenges for the Indian imagination to come up with solutions, especially those that relate to inclusive innovation; (i) Promoting co-creation and sharing of knowledge through Global Knowledge Partnerships, beginning with a Global Roundtable on Innovations for sharing ideas.

By creating a national level Council focused on innovation, we have attempted to mainstream the dialogue on innovation and taken the first step in creating an innovation mindset in the country as well as opportunities for the billion plus people. However, it is important to emphasise that innovation is a journey and our task is just beginning. The Government has demonstrated that it can bring in radical change through rights-based initiatives such as the Mahatma Gandhi National Rural Employment Guarantee Act, Right to Information, Right to Education, Aadhar or the Unique Identification Programme, and the proposed Food Security Act. We especially need to create mechanisms of collaboration among Government, industry, R&D institutions, academia and the community at large to drive long-term transformation through innovation.

The idea is to encourage, inspire and empower people to think, discover, deliberate, innovate and implement novel solutions at the local and national level to expedite the process of development for the benefit of the nation. We feel that such an innovation movement, with the involvement and commitment of the people at all levels, would not only be critical for solving challenges of inclusion in our society, but set India on the path of inclusive growth and sustainable development.

Sam Pitroda
Chairman, National Innovation Council
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EXECUTIVE SUMMARY

In the first year of its constitution, the National Innovation Council has worked on the following ideas and 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, detailed and is currently under discussion with the Ministry of Finance and leaders of industry. The Fund seeks to promote enterprises engaged in developing solutions in key areas such as health, education, agriculture, handloom, handicrafts and other small business enterprises. The Fund will combine commercial and social returns. The Fund will be capitalised to an eventual target size of Rs 5000 crores to be achieved in phases. It will be kick-started with seed investment from the Government and bilateral/ multilateral institutions and go to scale with private capital. The Fund will be an autonomous, professionally managed entity with a social investment focus.

PROGRESS

The idea of the IIIF has been proposed to the Ministry of Finance and its initial contribution will kick start the Fund in the fiscal year 2012-13.

Increasing Skills, Productivity and Competitiveness of Micro, Small and Medium Enterprises through Innovation

Micro Small and Medium enterprises (MSMEs) are among the largest job creators in the country. They contribute the 40% of export and are recognised as engines of economic growth. However, to keep up the pace of strong economic growth and to stay globally competitive, MSMEs need to innovate in all aspects of business. Recognising this need, NInC has envisioned the Industry Innovation Cluster initiative. By connecting and creating local eco-system encompassing actors and stakeholders who can bring in technology, financing, skills and mentors, the initiative will help enhance productivity, growth, and employability.

PROGRESS

Pilot activities have commenced at the Ayurveda cluster in Thrissur, and the Food Processing cluster in Krishnagiri. Activity at the Auto Components cluster, Faridabad; Bamboo cluster, Agartala; Brassware cluster, Moradabad; Furniture cluster, Ernakulam; and the Life Sciences cluster, Ahmedabad will begin in November 2011. NInC has been collaborating with State Governments, Ministry of MSME and the Department of Scientific and Industrial Research in this effort.
Executive Summary

Nurturing Innovation through Education

To promote creativity and nurture innovations NInC has so far made six proposals to the Ministry of Human Resource Development (MHRD). These include five proposals made in May 2011 and one in September 2011.

(a) Creation of a separate scholarship stream of National Innovation Scholarships analogous to the National Talent Search Scheme. 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. 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.

(d) Creation of a National Innovation Promotion Service to replace/add to National Service Scheme in Colleges to use college students to identify local innovations. This is a scheme of the Ministry of Youth Affairs and Sports which along with Ministry of HRD has been requested to examine its feasibility.

(e) 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.

(f) Setting up twenty Design Innovation Centres co-located in Institutes of National Importance. It has been proposed to set up these Design Innovation Centres in twenty select institutions and included in the 12th Plan for consideration by the Ministry of Human Resource Development. Co-location 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.

(g) Setting up a pilot University Innovation Cluster. NInC proposes to identify and facilitate the development of 20 University Innovation Clusters across the country where innovation would be seeded through Cluster Innovation Centres. 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.

PROGRESS

Ministry of Human Resource Development has green-lighted the following three proposals:

(a) Award of 1000 Innovation Fellowships at the School Level (Classes 9-12)

(b) Introducing the Mapping of Local History, Local Ecology and Local Culture and Heritage by all High Schools

(c) Setting up the first Meta University of the world for multi-disciplinary learning and collaborative
learning

All these three proposals will roll out in academic year 2012-13. Other proposals are also under consultation with Ministry of HRD.

(d) University of Delhi has set up a University Innovation Cluster as a pilot which has been widely welcomed

The 12th Five Year Plan will include all approved proposals. Most, except the proposal on Design Innovation Centres, can be done under existing policies and schemes by appropriate modifications.

Connecting India for Innovation: Rural Broadband and Applications

To connect people and technology for radically transforming the delivery of public services and increasing accountability in governance, NInC followed up on the proposal for connecting all 250,000 Panchayats through optic fibre connectivity. NInC has begun work on applications through a pilot in Ajmer district in Rajasthan and proposes to enlarge this to one district in each State.

PROGRESS

Government approved the proposal to connect all panchayats through optic fibre and the rural broadband plan on 25th October 2011. NInC will work on applications for rural broadband in collaboration with Ministries of Rural Development, Panchayati Raj, HRD, Health and the Prime Minister's National Council on Skill Development to develop applications so that even as hardware connectivity is under progress, applications also get addressed.

Communication and Advocacy for Innovation

NInC aims to undertake outreach activities to promote a culture of innovation. It has attempted this through multiple initiatives that include the India Innovation Portal for knowledge sharing on innovation, promotion of innovation by Members of Parliament through awards at constituency level, and action through the public broadcasting media and collaboration with media in general.

PROGRESS

India Innovation Portal has become operational and acts as a gateway for innovation resources and a platform for idea exchange. The portal would facilitate interactions, foster collaborations and provide a one-stop resource on innovations (www.innovation.gov.in). Lok Sabha Sub-Committee has approved the use of MPLADS fund for innovation awards that Members of Parliament can give and the matter is under consideration of the Rajya Sabha Sub-Committee. Doordarshan will initiate programming on innovation using multiple formats highlighting local innovations and their champions, showcasing India’s legacy of innovation, and iconic Indian innovations. The first of these would go on air on 26 January 2012.

Developing Institutional Framework for Innovation

State Innovation Councils: 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.
Executive Summary

Sectoral Innovation Councils: 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.

PROGRESS
Currently 19 states have constituted State Innovation Councils and 19 Ministries have set up Sectoral Innovation Councils. These will contribute to developing the innovation roadmap for the decade.

Complementary Action by Multiple Agencies of Government to Facilitate Innovation in Public Systems

This part captures action to promote innovation already underway in Ministries in Government of India. Many of them are prior to the formation of NInC but complement or buttress its agenda.

PROGRESS
(a) On the initiative of the Office of the Prime Minister, Cabinet Secretariat issued orders to have the agenda of innovation embedded in all proposals to the Cabinet where action on innovation is reported specifically in each proposal to the Cabinet (Annexure 1).

(b) The 13th Finance Commission which predated NInC provided for Rs one crore (Rs 10 million) for each of the over 600 districts as a District Innovation Fund in the country to promote innovation.

(c) Centre for Innovations in Public Services (CIPS): On the suggestion of the 13th Finance Commission, a new institution to create a “climate and nurture a culture of accelerating and diffusing innovation in public systems” has been set up in the Administrative Staff College (ASCI) in Hyderabad.

(d) Portal for Open Source Drug Discovery (OSDD): An initiative of the Council of Scientific and Industrial Research (CSIR), OSDD has been created as a platform for global partnership to provide affordable healthcare to diseases afflicting poorer people. It seeks to collaboratively aggregate the biological and genetic information available to scientists to use it to hasten the discovery of drugs.

(e) INSPIRE: The Department of Science and Technology has launched an INSPIRE programme to identify and reward young talent in science and covers students from high schools, Bachelor of Science and Master of Science levels.

(f) Flexi-funds: To encourage local responses to local problems and encourage local problem solving flexi-funds have become integral part of major flagship programmes like Sarva Shiksha Abhiyan (Elementary Education), and the National Rural Health Mission (Basic Health). The NREGA, the largest flagship programme, promotes local innovation by providing for comprehensive planning with funds directly given to panchayats.

Challenge Funds for Innovation

National Innovation Council seeks to set challenges for the Indian imagination to come up with solutions for challenges, especially those that relate to inclusive innovation.

PROGRESS
NInC has called for proposals to improve work tools, innovate on products and processes that reduce drudgery of the working class population. It is working on ideas for the India Grand Challenge Awards to be launched soon.

4 NATIONAL INNOVATION COUNCIL
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 is hosting a Global Roundtable on Innovation on 14th-15th November 2011 in New Delhi where heads of innovation policy from 15 Governments across the world will come together to share cross-country experience.

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, CERN, and GLORIAD.

PROGRESS
The National Knowledge Network has connected around 405 nodes in the country. The Global Innovation Roundtable is expected to lead to an agenda for new partnerships.

“In times of crises, imagination is more important than knowledge.”
Financing Innovation:
The India Inclusive Innovation Fund

Background

Financial capital – its availability, quality, and accessibility – defines the innovation success of countries. The world’s most successfully innovative companies owe their existence to being able to access the right kind of money at the right time. To help create a supporting environment for Indian innovation, the National Innovation Council has focused on finding ways of funding ideas that will impact people at the bottom of the socio-economic pyramid. The objective is to drive ideas that will generate social returns, while simultaneously maintaining commercial viability and profitability.

The India Inclusive Innovation Fund (IIIF)

Traditional innovation models have often focused more on addressing the wants of the affluent, rather than the needs of the deprived: a tendency that directs the best human and financial resources away from solving more basic developmental needs. A new template is needed: one of inclusive innovation, which will mobilise and deploy India’s best creative, human, and financial capital to serve our country’s poorer citizens, at the bottom of the socioeconomic pyramid (BOP).

For inclusive innovation to work, India will need to co-opt the dynamism and energy of its vibrant private sector. Enterprise and entrepreneurs bring powerful tools to any attack on poverty and deprivation. They have demonstrated outstanding ability in innovative problem-solving: exploring challenges, experimenting with responses, and selecting and delivering novel, workable solutions. Crucially, these solutions are scalable, and self-sustaining: by recycling profits into further development, enterprises can expand service delivery with just incremental investments of additional resources.

Indian enterprises could help bridge access gaps in core services for millions of disadvantaged Indians, offering them affordable education, healthcare, energy, and livelihood support. Significantly, some exceptional Indian companies have already shown the way to doing so: firms like Aravind EyeCare, Narayana Hrudayalaya, and SELCO use innovatively designed products, business models, and operating processes to bridge service gaps in healthcare and energy – while maintaining their own commercial viability. Enterprises like these can complement the work of government and aid agencies, expanding support for India’s inclusive growth agenda.

Inspiring as these examples are, they remain nonetheless isolated – too few, in the Council’s view.
India’s developmental challenges are substantial, diverse, and faced by millions – and need thousands of bottom-of-the-pyramid companies to engage them. We lack, however, a business ecosystem that can support wider emulation of such examples. India’s business environment does provide finance and talent to conventional commercially-focused companies; however, bottom-of-the-pyramid companies find it much harder to access these same resources – in particular, risk funding, with which to seed early-stage ideas and expand successful ones. If innovative, socially-focused ideas are to make it to market (and to citizens who will benefit from them) they will require a funding ecosystem to back them.

The India Inclusive Innovation Fund is a step towards addressing this funding need. The Fund will finance such companies with the capital they need to take their ideas to market. Fund-backed enterprises will target core sectors (such as education, healthcare, and agriculture, among others), and combine social and commercial returns. The outcome of the Fund’s work will be a generation of innovative solutions, directing India’s most creative thinking towards solving her most significant challenges.

Objectives of IIIF

The India Inclusive Innovation Fund will be guided by four driving objectives.

a. To Focus on India’s Poor. The India Inclusive Innovation Fund will back enterprises developing innovative solutions for customers who lie in the ‘bottom 500 million’ in India’s society. These customers will largely reside in under-served rural and semi-urban areas, with limited physical and institutional access to basic services. The ‘pain-points’ these enterprises address will reflect the realities and needs of these customers: largely involving service, affordability, and access gaps in education, healthcare, agriculture, water, sanitation, and other, similar areas.

b. To Combine Social and Commercial Returns. The Fund and its investee enterprises will not only address developmental needs, but will do so in a commercially viable fashion. The Fund will therefore operate as a for-profit entity with a social investment focus and seek to provide its investors with reasonable financial returns. These returns will be lower than those typically provided by conventional, profit-maximising enterprise financiers like traditional private equity and venture capital funds. However, in providing these returns, the Fund will depart sharply from grant-based development aid and philanthropy models that have traditionally been used to serve deprived citizens.

c. To Drive Employment and Livelihood Generation. Wherever possible, the Fund will back enterprises that employ India’s poorer citizens, or enable them with the capacities they need to build successful livelihoods.

d. To Help Establish a Model for Wider Inclusive Innovation Funding. It is hoped that the Fund, by investing in BOP-focused enterprise, will establish an example for other Indian funds and financiers to emulate – leading to a new pattern of funding for commercially feasible, socially meaningful innovation.
Financing Innovation

The Fund’s Design

The India Inclusive Innovation Fund will provide funding to BOP-focused companies across the venture development cycle – both in early and in growth stages. Its design will include the following elements:

SIZE

The Fund will be capitalised to an eventual target size of Rs 5000 crores, to be achieved in phases. 80% of its capital will be sourced from private investors, philanthropists, and bilateral and multilateral institutions who share the Fund’s objectives. 20% is sought from the Government of India, in seed funding, and to kick-start investment into the Fund, Rs 100 crores is requested from the Government. The Council expects significant interest from bilateral and multilateral agencies, and from socially-focused private investors.

STRUCTURE

The Fund will be structured as an autonomous and professionally-managed entity. The Fund will seek to invest not just in enterprises focused on inclusive innovation, but also in other funds that currently back such enterprises. This will allow the Fund to maximise impact, expanding the wider funding ecosystem available for BOP-focused companies – by leveraging existing investments made by private and philanthropic investors in bottom-of-the-pyramid enterprises, across a wider base of investees. It will also allow the Fund to draw on the rich expertise and experience in social impact investing developed by existing funds – allowing it to enhance its own operational effectiveness. Preliminary discussions, seeking to explore the feasibility of such a structure with the appropriate government regulatory authorities, have been extremely positive.

TIME-FRAME

The Fund’s life has been proposed at 10 years, extendable by up to 3 years. It will be managed, during its life, by a highly professional management team – attracted and selected according to their experience and ability in driving commercial returns, and also according to their social commitment. The team will guide the Fund, and its investee companies, to achieving its target returns.

RETURNS

The Fund will seek to provide its investors with positive financial returns; while these returns would be lower than those of traditional venture capital funds, they would be accompanied by demonstrable and measurable social returns to its investors. To achieve this objective, the Fund will hold all investee enterprises to success criteria that relate both to social impact, and commercial performance. Investee firms will be assessed and monitored according to these criteria. Fund managerial decisions will also be guided by these parameters.

INVESTMENT SOURCING

To maximise its impact, the Fund will seek potential investees from four sources. The Fund will solicit interested enterprise through open broadcast: the outreach publicity activity surrounding its launch and initial operations is expected to attract a high level of demand from innovative
enterprises. *Angel and venture capital networks* with established investments in early and mid-stage SMEs, and institutionalised social-venture interest communities will prove an important source of potential investees. Given the developmental focus of the Fund, *community organisations* (such as non-profits and NGOs) are expected to prove a rich source of entrepreneurs and enterprises, given appropriate mentoring and incubation support. The Fund will also source investee firms from *other funds* focused on social enterprise, wherever possible and appropriate: either co-investing with these funds in commonly-held social enterprises, or *via* these funds.

**INCUBATION AND MENTORING**
To de-risk investee enterprises, and help them develop the ability to deliver social impact and financial returns, the Fund will create a *network of mentors* to support and guide innovators and entrepreneurs. The Fund will also establish an incubation programme to train entrepreneurs in domain areas such as finance, marketing, and operations. Capacity for these activities will be taken from existing incubation and mentoring organisations around the country (in academic institutes, and venture support organisations).

**EXIT STRATEGY**
Traditional venture capital firms realise their commercial returns from investee firms on *exit*: through mechanisms such as initial public offerings (IPOs) on the financial market, and buy-outs by other investment firms. These conventional mechanisms have typically been applied to purely profit-maximising enterprises. In some cases, where Fund-backed enterprises focus on social impact at the (limited) cost of financial performance, a range of other exit mechanisms may be considered.

**PROGRESS**
*Having developed a detailed concept for the Fund, the Council has forwarded a proposal to the Ministry of Finance for its consideration and approval with a view to beginning operations in fiscal year 2012-2013.*
Increasing Skills, Productivity and Competitiveness of Industry: Industry Innovation Clusters

Background

Micro, Small and Medium Enterprises (MSMEs) account for 45% of India’s manufacturing output, 40% of exports, employ 60 million and represent 17% of GDP in 2011 and are expected to grow strongly to 22% in 2012. Developed and developing nations worldwide view their MSME industries including emerging industries and start-ups as major job generation and employment engines, both in cities and rural areas. To expand India’s fast economic growth rate and be globally competitive, the industry needs focus on innovations to create new technologies, products, services, business models and organizational models to lay the foundation for a vibrant India in the future. At the same time, more interaction with educational and training institutions is needed to address the gaps in availability of skilled manpower.

The primary approach to kindle innovation in MSMEs is to use regional industry clusters as a platform to launch such initiatives. Cluster-based development has also been actively promoted by National/State government agencies in India, both in existing industry clusters or in engineered industrial ecosystems facilitating economies of scale. Programmes of the Ministry of Commerce, the Ministry of MSMEs and the Ministry of Textiles are examples of such focus.

However, innovation in MSME clusters in India suffers primarily from lack of access to technology, financing, skills, mentors and effective, collaborative ecosystems. Programmes and interventions of both Government and other agencies mostly focus on one of these elements and the effects tend to wither away once the implementing agencies support wanes. For long-term impact and sustainability various initiatives have to be the responsibility and be driven by the industry itself. The Government and other agencies should play the role of initiators, facilitators and supporters. Global examples of successful industry clusters show that industry leadership and participation in conjunction with government agencies are a must for innovation.

To seed and strengthen innovations in industry clusters NInC has initiated the Industry Innovation Clusters initiative. The aim is to bring together Local/State/National government agencies, R&D

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4MSME Annual Report 2010-11, Ministry of MSME, Government of India
labs/universities and private industry organisations, in a public private partnership effort, to collaborate, share and network towards innovation and do so in a self-sustainable manner. Such collaborations are expected to result in the industry innovation clusters giving birth to new products, services, business models and plugging gaps of finance, skill and others.

A Pilot Phase of this initiative is being carried out in 7 industry clusters across the country, which is proposed to be expanded to 30+ clusters across all States by the end of fiscal 2013. NInC’s partners for the Pilot phase are: the Ministry of MSME, the Department of Scientific and Industrial Research (DSIR), the Council for Scientific and Industrial Research (CSIR), State Governments, industry bodies such as Confederation of Indian Industry (CII), Federation of Indian Chambers of Commerce and Industry (FICCI) and professional organizations like Foundation for MSME Clusters, Infrastructure Leasing & Financial Services Ltd. (IL&FS) and Tata Management Training Centre (TMTC). Various other national and international organizations have shown interest in partnering and their participation is being welcomed to help scale the initiative for the future.

Industry Innovation Clusters Initiative – The Idea

Successful industry innovation clusters and their ecosystems worldwide possess the following characteristics. The intent of NInC’s Industry Innovation Cluster initiative is to promote and facilitate these characteristics and fill the gaps as quickly as possible.

- Innovation mind-set of risk taking leadership and the acceptance of failures as part of the journey of innovation
- Access and participation of skilled outside mentors and advisors who provide unbiased feedback and network the ecosystem further
- R&D capability with access to technologies, skills, resources, labs and R&D risk capital
- Extensive collaboration and cooperation through sharing and networking forums
- Extensive support for entrepreneurs who bring in energy, motivation and disruptive ideas
- Active early stage funding/investor community consisting of both institutions and individuals

Recognising the need for such connected ecosystems, the Industry Innovation Cluster initiative envisages creating role-models to showcase the benefits of innovation and inspire other industry sectors to create similar innovation models.

An Industry Innovation Cluster (Figure I) is a local nexus of actors, facilitating collaboration, networking and sharing for productivity, competitiveness and innovation capability gains. Such an Innovation Cluster is possible by expanding the role of the local industry body to act as the hub of the innovation ecosystem and become a facilitator and catalyst for collaboration. At the same time, the activities of the industry body have to be self-sustained, with minimal dependency on outside agencies. Following a PPP model, the Industry Innovation Cluster initiative will involve resource investments in various forms from the industry and the ecosystem to grow the cluster with relevant support of National/State Government agencies.
Industry Innovation Clusters

To transform an industry cluster into an Industry Innovation Cluster, NInC proposes the seeding and creation of a Cluster Innovation Center (CIC), as part of the existing industry body in the cluster (Figure II). The CIC is either a physical space or a virtual entity staffed by dedicated individuals in full-time or volunteer capacities to promote and facilitate innovation at the local industry cluster.

The Cluster Innovation Center (CIC) will promote collaborations bringing together industry, academia, research institutions, professional service organisations, Government, non-Government agencies and society. Initiating closer ties in the ecosystem, the CIC will link demand to supply acting as a catalyst and aid the entire cluster in effective implementation and management of innovation-driven and growth activities.

With a lean structure, comprised of a few individuals, this body will aid the ecosystem in connecting with each other, provide guidance, organise initiatives, channel available resources and act as an incubating body fostering the growth of the cluster.

The role of the CIC will be:
- The Connector: Networking and sharing hub between ‘internal’ units of the cluster and with ‘external’ organisations for innovation within the cluster
- The Innovator: Catalyse and manage innovation activities on a daily basis in the cluster
- The Channel: Facilitate the delivery of resources, R&D, skills, mentors, financiers and experts necessary for innovation in the cluster

Pilot Phase

Along with partner agencies and organisations, candidate industry clusters have been identified to be part of the Pilot Phase of the initiative.
The following were some key criteria for selecting Pilot Clusters:

- Needs assessment and opportunity for positive innovation impact on cluster
- Readiness and motivation for innovation to deliver new industry opportunities
- Industry cluster body & units leadership and support
- Willingness of industry cluster and ecosystem to invest in innovation activities
- NInC partner recommendations
- Cross-section of industries and geographies to learn broadly from Pilot

The Pilot Phase, lasting 6-9 months, will seek to showcase successful innovation initiatives in these clusters, made possible by collaborations within the ecosystem and managed by the CICs. Table 1 gives details of the Pilot Clusters identified.

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<tr>
<th>Sector</th>
<th>Location</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Components</td>
<td>Faridabad, Haryana</td>
<td>Min. of MSME, CSIR, DIC-Haryana</td>
<td>FSIA</td>
</tr>
<tr>
<td>Ayurveda</td>
<td>Thrissur, Kerala</td>
<td>CSIR</td>
<td>IL&amp;FS, CAR Keralam</td>
</tr>
<tr>
<td>Bamboo</td>
<td>Agartala, Tripura</td>
<td>Min. of MSME, CSIR, TBM</td>
<td>IL&amp;FS</td>
</tr>
<tr>
<td>Brassware</td>
<td>Moradabad, Uttar Pradesh</td>
<td>Min. of MSME, Dept. of Handicrafts, CSIR</td>
<td>FICCI</td>
</tr>
<tr>
<td>Food Processing</td>
<td>Krishnagiri, Tamilnadu</td>
<td>Min. of MSME, CSIR</td>
<td>CII, Krishmaa</td>
</tr>
<tr>
<td>Furniture</td>
<td>Ernakulam, Kerala</td>
<td>Min. of MSME</td>
<td>KFC</td>
</tr>
<tr>
<td>Life Sciences</td>
<td>Ahmedabad, Gujarat</td>
<td>Min. of MSME, CSIR</td>
<td>MSME Foundation, IDMA</td>
</tr>
</tbody>
</table>

Table 1 Pilot Industry Clusters

Building an innovation mind-set is one of the most important aspects of fostering a culture of innovation. For this, the CIC and the Innovation Cluster need orientation and guidance on various aspects which enable and aid effective innovation. To enhance the innovation capabilities of the clusters, NInC, in partnership with various entities, will be conducting Innovation Enabler Sessions at the clusters. Table 2 shows examples of innovation sensitization and training sessions which will be carried out in the Pilot Clusters depending on the needs. The sessions will target the CIC and industry cluster unit members, along with participation from all organizations in the ecosystem.

<table>
<thead>
<tr>
<th>Innovation Management and Culture</th>
<th>Intellectual Property Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster Management for Innovation</td>
<td>Innovation Project Management</td>
</tr>
<tr>
<td>Sensitisation to programs and schemes of Government and private functionaries</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 Innovation Enabler Sessions
The Pilot Phase will involve the following activities at each of the identified clusters:

- Creation of CIC: The CIC will facilitate connectivity, provide a channel for directing resources and will lead the innovation initiatives being taken up
- Innovation Enabler Sessions: To enhance capability of successfully conducting and managing innovation best of breed training and sensitization will be conducted
- Pilot Innovation Initiatives: Showcase in Comprehensive Report, Proof-of-Concept or Prototype form how innovations could potentially deliver new products, techniques, services to improve productivity and competitiveness of the industry cluster. These will be conducted under the auspices of the industry body in the cluster and will showcase results of collaboration in the ecosystem.

The following table (Table 3) shows the proposed Innovation Initiatives in the Pilot clusters:

<table>
<thead>
<tr>
<th>Pilot Cluster</th>
<th>Proposed Initiative(s)</th>
<th>Proposed Collaborating Partner(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Sciences Cluster, Ahmedabad, Gujarat</td>
<td>Training of SMEs on non-conventional drugs and New Drug Delivery Systems (NDDS)</td>
<td>DST, IDMA, MSME Foundation</td>
</tr>
<tr>
<td></td>
<td>Biotechnopreneur Programme</td>
<td>DST, CSIR, GSBTM, PERD</td>
</tr>
<tr>
<td>Food Processing Cluster, Krishnagiri, Tamilnadu</td>
<td>Storage life extension of mangoes and packing technology</td>
<td>CSIR, Min. of MSME, TNAU</td>
</tr>
<tr>
<td></td>
<td>Solid waste management</td>
<td>CSIR, Min. of MSME, TNAU</td>
</tr>
<tr>
<td>Ayurveda Cluster, Thrissur, Kerala</td>
<td>Establishing action pathway mechanism of Nishakatakadi Kashayam</td>
<td>CSIR, KSCSTE</td>
</tr>
<tr>
<td>Bamboo Cluster, Agartala, Tripura</td>
<td>Semi-automated machines for agarbatti rolling</td>
<td>Min. of MSME, TBM, BCDI</td>
</tr>
<tr>
<td></td>
<td>Research alternatives for Jiget used in agarbatti making</td>
<td>CSIR</td>
</tr>
<tr>
<td></td>
<td>Recycling and management of Bamboo waste</td>
<td>CSIR, Min. of MSME</td>
</tr>
<tr>
<td>Brassware Cluster, Moradabad, Uttar Pradesh</td>
<td>R&amp;D on brass and new alloys for improving quality and life of products</td>
<td>CSIR, Min. of MSME, Dept. of Handicrafts</td>
</tr>
<tr>
<td></td>
<td>Design and development centre for creating new, modern designs</td>
<td>Min. of MSME, Dept. of Handicrafts</td>
</tr>
<tr>
<td></td>
<td>Electroforming technology</td>
<td>CSIR</td>
</tr>
<tr>
<td>Furniture Cluster, Ernakulam, Kerala</td>
<td>Skill development and training of workers</td>
<td>ITIs</td>
</tr>
<tr>
<td></td>
<td>Common marketing cooperative</td>
<td>IIMK</td>
</tr>
<tr>
<td></td>
<td>Infusion of IT for effective management</td>
<td>NIC</td>
</tr>
<tr>
<td>Auto Components Cluster, Faridabad, Haryana</td>
<td>Information hub for SMEs in the region</td>
<td>SIDBI, TiE</td>
</tr>
<tr>
<td></td>
<td>Common design centre</td>
<td>CSIR</td>
</tr>
</tbody>
</table>

Table 3 Proposed Innovation Initiatives
Current Status and Future Scope

Current Status
Work has already commenced in 2 pilot clusters and pilot activities in the other clusters will begin in November 2011. As preparations for the same, the following activities are being carried out in the Pilot clusters:

- Creation of the CIC with 1-2 domain experts
- Initiation on Innovation Enabler Sessions
- Resource mobilization and kick-off of Innovation Initiatives

NInC and its partners will actively monitor the progress of each of the activities and lessons learnt will be captured and documented for analysis after the Pilot phase.

Models for the Innovation Cluster ecosystems, an operational CIC and recommendations to Government/non-Government organizations for improving the efficacy of existing programs and launch of new programs are expected outcomes of the Pilot Phase, apart from successful impact of the activities on the Pilot Clusters themselves.

Future Scope
NInC is actively working with current partners and scoping partnerships with other interested organisations to expand the initiative 30 clusters across States during the financial year 2012-13 and beyond.
Nurturing Innovation Through Education

Background

Education is the crucible in which Innovations are forged. Promoting creativity and incentivizing innovations through our educational institutions is a first step towards broadening and deepening the impact of innovations in our society and economy. In large scale education systems such as ours, catering to a vast population with relatively limited resources, this is a major challenge. At the same time, with rapid advances in new technologies, changing needs of the economy, and the very presence of the challenges identified above, the sector itself presents a fertile ground for pioneering innovations. Recognising the fundamental role of education in nurturing and fostering an ecosystem 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.

Initiatives

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

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

To complement the government’s National Talent Search Scheme, the NInC has proposed the introduction of a parallel stream of National Innovation Scholarships to be administered by NCERT and conducted through the decentralised management system it has put in place. This will help identify talented children at the High School and Secondary School level (Classes 9-12) who think creatively, laterally and innovatively on issues that they perceive as important. It will have a multiplier effect of valuing creativity and innovation by parents and teachers and will gradually evolve into a culture of valuing innovation in the schooling system. It is proposed that 1000 scholarships be considered for awarding each year under this scheme with 50% earmarked for innovations by students in schools located in non-urban areas and at least 33% earmarked for children from the field of liberal arts.

(b) 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. DIETS can train and shape teachers to become facilitators
of creativity and innovative thinking in students. A good DIET will make teachers value creativity and give them the ability to spot that 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 (a word meaning “leading to light” in Latin).

The 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, talent-spotting, improvise on curricula for activities that promote innovation 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 / 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.

(c) 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. It will be a local discovery of “Jal, Jangal, Zameen” by students based on observation. Students of say Class 9 may be engaged in this exercise of ‘Aas Paas ki Khoj’ (nomenclature may be revised). Students will be assisted by a volunteer teacher and follow a structured format to undertake a tour of the village around the school. The purpose is to piece together local history, local ecology, map local bio-diversity, local culture, and heritage. For mapping local biodiversity, a template exists with IISc through the work of Dr. Madhav Gadgil, while for local heritage conservation, a template has been created through UNESCO. These could be referred to as source documents to build on. It will end up creating a local history/ecology/cultural heritage by the particular 9th class of that school as the Report of the Class of 2012. For 2013, the Report of the Class of 2012 becomes a base document to build on.

The greater value of the exercise is that it creates 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. It will enrich the students’ understanding of biodiversity. It can help make heritage conservation a people’s movement (Under 73rd Constitution Amendment, preservation of cultural heritage is a function assigned to panchayats). The potential will unfold as we begin the exercise.

(d) Creation of a National Innovation Promotion Service to replace/add to National Service Scheme in Colleges

The National Service Scheme (NSS) is a Centrally Sponsored Scheme providing for outreach for college students for community services. Launched in 1969, it is operated by the Ministry of Youth Affairs and Sports and is presently reportedly functioning in 206 universities, 41 Senior Secondary
Nurturing Innovation through Education

Councils and Directorates of Vocational Education, covering more than 10,313 colleges/institutes of higher and technical education, and 7542 Secondary Schools all over the country. The activities they have worked on are rural development, community health, disaster preparedness/relief, literacy etc. To make NSS more attractive two more streams have been added – Mega Camps and Adventure programmes in which annually a small number, about 2000 students participate.

The National Innovation Council has suggested refocusing the Scheme on the theme of Innovation. A model already exists where the National Innovation Foundation undertakes “Shodh Yatras” to identify and document local innovation with students. The challenge is to use NSS creatively or alter it as a National Innovation Promotion Service to undertake mapping and where possible promotion of local innovation.

(e) 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. 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 HRD 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. Thus India 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
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/university will be able to take courses available in other universities and colleges. With the help of Mentors, students will therefore be allowed to customise their learning experience and select options from a wide menu of choices, leveraging the specialisation of individual institutions. So it will be possible for an engineering student from,
say IIT Kanpur to also enroll for a course in ancient history from the Jawaharlal Nehru University or a mathematics student from Indian Institute of Science pursue a course in comparative literature from the 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. It innovates on both the content and form of the twenty-first Century University and offers a unique model for the proposed fourteen Universities of Innovation mooted in India. It is hoped that this would become a model for the world to emulate to move towards collaborative and multi-disciplinary learning that redefines knowledge-creation and knowledge-sharing in the twenty-first century.

Though the internet and technology are fundamental to this conception of the Meta University, at the crux is not a new technology but a ‘new pedagogy’ that is more in tune with the requirements of the knowledge society of the twenty-first century. In such an environment there is a greater focus on moving from the chalk and talk model with the teacher at the centre, to a learner-centric, collaborative model that allows continuous learning from the environment. The web/internet therefore provides both a platform for communication and collaborations as well as a source of content.

The learning platform of the Meta University will incorporate these principles of collaborative and multi-disciplinary knowledge sharing, knowledge creation, openness and flexibility in its design. It will in effect be a test bed for experimenting with a new model of teaching and learning that may show the way for a new education model for the future. The detailed design of the Meta University will be undertaken by a core group of academics, heads of institutions and experts who would constitute the Board of Governors of this new Meta University. The National Innovation Council is working closely with government departments concerned and other stakeholders to implement these initiatives at the earliest.

(f) Setting up of 20 Design Innovation Centres by co-locating them with Institutes of National Importance

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.

In the last fifty years the world has seen dramatic changes and design has also transformed significantly along the way. Design and Design thinking are increasingly about building in capabilities that
empower and enable people to use these resources, with quality of life and environment as the
guiding principles, not just economic factors which are also important. However, we as a nation do
not have enough state-of-the-art design institutes to enhance our innovation capabilities. 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.

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. These centres could be located in IITs, new IITs where there is
industry presence, the NITs, and select Technical and Liberal Arts Universities. Co-location will address
issues of availability of land and faculty, save costs, enable horizontal transfer of knowledge, as well as
offer a ready talent pool to enable timely execution of this initiative. Also, co-locating these schools
in institutes beyond IITs would also ensure that emphasis of design education is not on engineering
and technology oriented product design alone, but could extend to other faculties/disciplines related
to eco-friendly and green design for products and services, service design, communication design,
systems design etc. broadly integrating design intervention in different sectors supporting economic
growth and increasing employment opportunities. Further, existing National Institutes of Design could
play a mentoring role to these centres given their expertise in the field. The aim is to make these
Innovation Design Centres/Schools state-of-the-art institutions to enhance the innovation quotient
in the country and foster a design culture.

Out of the above, the Ministry of Human Resource Development has green-lighted the following
proposals: Award of 1000 innovation fellowships at the school level; Mapping of local history, local
ecology and local culture and heritage by high school students; Setting up the first Meta University
of the world for multi-disciplinary learning.

(g) Creation of Cluster Innovation Centres (CICs) at Universities
Over the years universities in India have become increasingly focused on their teaching function,
imparting and disseminating knowledge and training to a large number of students. With a few notable
exceptions research by and large has moved out of academic institutions to stand alone research
centres and laboratories. Further, university linkages with industry and society have at best been weak
and under developed. As a result, our Universities have not been at the vanguard of innovations that
solve real world problems and result in creation of products and processes that boost the economy
and help the common man. While far reaching systemic reforms in higher education are required
and the government is committed to them, one significant way to revitalise the university system
in the context of innovation is to strengthen its linkages with industry and society.
Recognising that educational institutions must be at the centre of the innovation process, in the last decade or so renewed efforts have been made by various stakeholders to promote innovations and entrepreneurship in our educational institutions. The Government has taken up various initiatives like setting up Innovation and Entrepreneurship Development Centres (IEDC) in educational institutions, Science & Technology Entrepreneur Parks, and Technology Business Incubators, in order to promote knowledge based and innovation driven enterprises. Other initiatives include creating better incentive structures to reward innovations, encouraging young talent through scholarships, making available risk/venture capital and other necessary ingredients to strengthen the institutional capacity for innovation in the country.

In order to strengthen these efforts and to make Universities hubs of innovation the National Innovation Council seeks to create Cluster Innovation Centres (CIC) at Universities with an aim to foster an ecosystem of innovation, and connect research with application for the benefit of society. 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. The CIC will provide a range of services and facilities, starting from evaluating an idea for its innovation potential, advice on technical and commercial viability, advice on IPR issues, guidance on relevant schemes and grants, helping innovators find partners and collaborators including funding, business development and finally taking the products and processes to end users. The CIC will have an appropriate institutional structure to enable it to undertake a range of functions, and a lean management team with expertise in guiding stakeholders in innovation management.

The NInC aims to catalyse the creation of at least 20 such Cluster Innovation Centres at Universities and provide support for the clusters to bear fruit and sustain. The NInC is currently working with a few select academic institutions to showcase the potential of Cluster Innovation Centres and will scale up this activity to a larger number of educational institutions in the coming year.

University of Delhi and Maharaja Sayajirao University of Baroda have currently come forward to create CICs. The CICs at the University of Delhi encompasses the following components:

**Degree Programmme on Innovation:** University of Delhi is offering a 4 year B.Tech/B.S programme with the primary objective of enabling students to realise their true potential in terms of innovation for real world applications that shall be largely driven by the engine of mathematics and IT. The programme shall also relate to innovation and technology management, entrepreneurship, business, and communications.

**Establish linkages between industry and the University for innovation aimed for practical ends:** This will ensure a fruitful exchange of ideas and programmes that will connect
meaningfully with teaching and research programmes of the University, as well as bring benefit to society through input from the CIC where students of the degree programmes as well as other UG/PG/Research students shall take part along with faculty and members from the world of industry as well as from the corporate world.

**Innovation Schemes for Undergraduate Students and College Teachers:** Recognising undergraduate education as being fundamental for the welfare of our university education system, University of Delhi will institute Innovation Schemes for undergraduate students in the form of scholarships and challenges.

**Linkage with a village and/or an urban slum/low income area:** University of Delhi proposes to work closely with villages and/or slum clusters/low income neighbourhoods so as to focus on solving local problems.

The Maharaja Sayajirao University of Baroda has also initiated activities involving industrial studentships, collaborative research and intellectual property rights (IPR) sensitisation for students and faculty.

“All new empires will be empires of the mind”
Connecting People and Technology for Innovation through Rural Broadband

Background

The world today is faced with growing challenges — in poverty, health, education, agriculture and so on, but we also have unprecedented advantages offered by ICT tools in helping us meet these challenges. Key among them is broadband access for Internet, which is creating a revolution in processes, service delivery and civic engagement in the governance process, leading to social capital development, creation of knowledge communities and speeding innovation across diverse areas such as education, healthcare and social networking. In this context, nations around the world are increasingly recognising the contribution of broadband infrastructure to jump-start economic growth and spur national development. Most nations such as the US and Australia are investing heavily in broadband infrastructure and some countries have also legislated broadband as a right.

According to a World Bank Report\textsuperscript{2} a 10% increase in broadband penetration leads to a 1.38 per cent increase in per capita GDP in developing economies. Broadband, most importantly, enables technology and people to come together to unleash innovation, collaboration and new thinking. However, India still lags behind on broadband indicators compared with global indices. In absolute terms, China and USA had about 120 million and 85 million connections respectively by June 2010 in comparison to India’s 10 million. 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 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 ecosystem.

Creating Rural Broadband Infrastructure

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

\textsuperscript{2} “Information and Communication for Development 2009: Extending reach and increasing impact”, World Bank
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. The key hence, is to democratise Information and make it freely and easily available to the people at large to improve transparency, accountability, collaboration, cooperation, productivity and efficiency.

At the core of the governance structure in rural India are the 250,000 panchayats which are 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.

To leverage the real benefits of broadband connectivity it is essential to 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.

Broadband is increasingly being transformed from a means of high-speed connectivity into a platform for interaction which allows content creation and sharing among users. The prime driver to define broadband is minimum average speed, which can support popular applications, and it is a relative concept, which is used variably by different nations. The figure below summarises various applications in the Indian scenario and the bandwidth required to support such applications.

The next wave of broadband connectivity will be driven by bandwidth intensive applications such as e-medicine, e-education, geospatial planning, audio/video monitoring of government programmes and service delivery.
National Innovation Council

Connecting People and Technology for Innovation through Rural Broadband

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 parallel, it is proposed to commence work on building applications overseen by NInC in collaboration with relevant Ministries like Ministry of Rural Development, Panchayat Raj, Health, Education etc. with State governments being requested to cover at least one district in each state.

PROGRESS
Government has approved the proposal to connect all 250,000 Panchayats through optic fibre and the rural broadband plan on 25th of October 2011 and the roll out will be overseen by a High Level Committee. NInC will work on applications for rural broadband in collaboration with Ministry of Rural Development, Panchayat, HRD, Health and the Prime Minister’s National Council on Skill Development so that relevant applications are developed along with optic fibre connectivity. Applications identified are internal tracking of funds (Govt. to Govt.) to panchayats and status of expenditure, transforming delivery of public services, training grassroot-level functionaries, skill training to communities, creation of e-reading room/library, crowd-sourcing feedback from the last mile. This initial set would be expanded through consultations.
Building an Indian innovation culture will require – as a crucial component – engaging India’s citizens in an expanding, dynamic dialogue about it. One of the key endeavours of the National Innovation Council is to develop a mindset of innovation among Indians – for Indian citizens to have the cultural stance and tools they need to address the country’s challenges in new and unconventional ways. For this to be achieved, the Council seeks to provoke and encourage awareness and thinking on innovation to enhance the discourse on innovation, and engage a larger community of people in the innovation movement.

The Council has commenced its communication and advocacy on innovations through several channels. The first, through the India Innovation Portal which focuses on information: providing Indians with an ever-evolving resource of knowledge, guidance, and advice on innovation. The second is the One MP One Idea, which concentrates on ignition: drawing on the leadership of India’s elected representatives, and to draw on new solutions for their constituencies’ challenges – sourced from their constituencies’ own citizens. The third is through Mass Media outreach projects, which will spread a culture of innovation and inspire people by showing their own record of innovation, past and present, to spur them to new ideas and creativity.

Informing India: The India Innovation Portal

The India Innovation Portal is envisaged to network people, ideas, experiences and resources to galvanise the innovation community in India. The portal is an information aggregator and is intended to become a one-stop-resource on innovations in the country. The Portal has classified various innovation resources under Knowledge, News, Events, Media, and Directories and offers each user the power to personalise the portal to suit ones needs. The portal presents to the users resources on innovations happening across various sectors, resources categorised for different users such as Academia, Entrepreneurs, Industry, Government and Civil Society and resources for various innovation needs such as Funding, Policy, Intellectual Property Rights and Innovation Toolkits. It gives the users the flexibility to navigate the portal either through sectors, users or needs and provides further filtering mechanisms in each of these sections.

The portal also offers collaboration space in the form of innovation communities, to foster cross-fertilisation of ideas and knowledge flows. The portal will host communities for various innovation users including innovation clusters and State and Sectoral Innovation Councils. The portal will thus act as a platform for developing multi-stakeholder partnerships and facilitate national and global collaborations. Chairman of the National Innovation Council, announced the alpha release of the portal on 15th August 2011. The Portal will be released to the public on 15th November 2011.
SNAPSHOT OF THE PORTAL

Igniting Innovation: The ‘One MP – One Idea’ Competition

For political leadership to become champions of the cause of innovation, NInC proposed an idea for a scheme of ‘One MP-One Idea’ to award on an annual basis, three best innovations in each MP’s constituency. Each MP will choose the three best innovations in the constituency in areas such as education, healthcare, agriculture, energy, governance, etc. The MP may set up a committee of 5-7 eminent persons from his/her constituency to shortlist these three best innovations with maximum impact. This committee should consist of the District collector, scientists, academicians, industry professionals, social workers, etc. The scheme would be widely publicized and innovations can be submitted by any individual, group of individuals, industries, industry consortia, academia, NGOs and other institutions from the constituency. The committee will judge the entries and select three innovations with maximum development impact. The winners will get cash awards of Rs. 1,00,000, Rs. 50,000 and Rs. 25,000 as first, second and third prizes respectively. It is proposed that the funds will be provided from the MPLAD Scheme.
The Lok Sabha Sub-Committee has concurred with this proposal, while the Rajya Sabha Sub-Committee is currently examining it.

**Inspiring Innovation: Mainstreaming Mass Media Support**

To foster a national innovation movement, one that will unleash Indian creativity to generate new thinking, new responses and thereby evolve new mindsets, there is an urgent need to enlist the support of mass media. Mass media organisations now have very wide viewership and are publicly and privately owned. They also have very fine minds working in this area which is undergoing disruptive transformations in both reinventing its tools and extending its reach. To spread the message of innovation and thinking differently, NInC has developed plans to use media talent in both the public and private sectors.

The Council has finalised with Doordarshan a plan to broadcast programmes relating to the themes of innovation – presenting India’s legacy of innovation, showcasing iconic Indian innovations (both past and contemporary). Doordarshan will also drive local programming by its stations which will identify and locate local heroes or champions of innovation. The Council is also extending knowledge support to private broadcasters if they take up such themes on their own. A series of programmes on the theme of innovation in multiple formats would commence with Doordarshan beginning 26 January 2012.
Institutional Framework for Promoting Innovation:
State and Sectoral Innovation Councils

Background

As part of its efforts 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 and Sectoral Innovation Councils aligned to Union Government Ministries. These Councils would outline policy interventions to promote innovations and create an innovation eco-system in the State or in the respective Sector. 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”.

The aim is to create a framework at the regional and sectoral levels, where activities to support innovation are focused on devising strategies for inclusive growth, developing co-operation between the different actors involved, are geared towards 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 roadmap for the decade.

Initiative

Through these Councils the endeavour is to create a cross-cutting institutional framework to drive innovation in the State or in key sectors by creating multiple champions. 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.

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 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.
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. Each State Innovation Council will support its respective State Government to promote innovation in the State; encourage young talent and local universities, colleges, medium and small scale industries (MSME), and 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 a State innovation portal to educate and drive awareness or innovation; and provide input into the Innovation Roadmap 2010-2020 for the State.

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 and also give inputs for the roadmap for the decade as well as a make a roadmap for the decade for the particular sector.

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/ Sector. In this context, the Councils could co-opt domain experts to give inputs for creating an innovation eco-system in the State/ Sector. These may include persons by name with demonstrated ability to innovate and established track record of driving innovations.

The policy interventions and recommendations of the Councils would be outlined in a **Roadmap for Innovations** in the State/ Sector for 2010-2020. However, the focus should also be on initiating a parallel process where the State/ Union Government could begin to act on recommendations found worthy of action.

**PROGRESS**

_Till date 19 States have constituted State Innovation Councils and 19 Sectoral Innovation Councils have been constituted. Their details are given in Annexure 2._

> “The best way to have a good idea is to have lots of ideas and throw away the bad ones”
Complementary Action by Multiple Agencies of Government for Innovation

This section captures action to promote innovation already underway in Ministries and many of them are prior to the formation of NInC but complement or buttress its agenda. Innovations in public systems have been occurring over time though there has been no systemic effort at bringing innovation centre-stage. Very often innovation in government has been initiated by States and the Centre has been following them—some outstanding examples like Maharashtra’s Employment Guarantee Scheme which has now become MGNREGA, Rajasthan’s Antyodaya that led to the Integrated Rural Development programme between 1980-2000, Tamil Nadu’s Nutrition Programme that led to the Integrated Child Development Services and Mid May Meal Programme and so on. Planning Commission has recently begun documenting some of the practices that have elements of innovation. The decision to give Prime Minister’s Awards each year to pioneering work done by civil servants has also contributed to the spread of an innovation culture in government once limited within the R&D paradigm of Ministries dealing with areas of Science. These efforts fall into broad areas like flexi-funds inbuilt into major programmes, policy directives to embed innovation, crowd sourcing innovation and spotting and rewarding innovation etc.

Flexi Innovation Funds

a) **Sarva Shiksha Abhiyaan** – One of the largest flagship programmes of the government has decentralized planning for elementary education. In its project guidelines it has a provision for flexible funds to the extent of Rs 50 lakhs per annum per district in order to encourage innovative responses to local specific challenges for girls’ education, Early Childhood Care and Education, interventions for SC/ST community children, computer education for upper primary level children, including training.

b) **National Rural Health Mission** – Similarly the project guidelines of the largest decentralized health programmes in the country also provide for a provision for flexible funds to the extent of Rs 50 lakhs per annum per district in order to encourage innovative responses to local specific challenges in health delivery.

c) **XIIIth Finance Commission** – The XIIIth Finance Commission in its awards to the States has earmarked Rs 1 crore per district under District Innovation Fund (DIF) for innovations. It is expected that this will promote local innovations.

Policy Directives to Embed Innovation

(a) **Innovation made integral part of all Cabinet notes**: On the directive of the Prime Minister, all notes to the Cabinet have to report on how specifically the policy under consideration enhances innovation. This became operational from June 2009.
(b) **Centre for Innovations in Public Services (CIPS):** On the suggestion of the XIIIth Finance Commission the CIPS was created “to help create a climate and nurture a culture for accelerating and diffusing innovation in public systems”. It is located in the Administrative Staff College of India (ASCI), Hyderabad.

**Crowd Sourcing Innovation: CSIR Portal for Open Source Drug Discovery**

The Council for Scientific and Industrial Research has launched a portal for Open Source Drug Discovery. OSDD is a CSIR Team India Consortium with Global Partnership with a vision to provide affordable healthcare to the developing world by providing a global platform where the best minds can collaborate and collectively endeavour to solve the complex problems associated with discovering novel therapies for neglected tropical diseases like Malaria, Tuberculosis, Leshmaniasis, etc. It is a concept to collaboratively aggregate the biological and genetic information available to scientists in order to use it to hasten the discovery of drugs.

**Networks for Promoting Innovation: National Knowledge Network (NKN)**

The National Knowledge Network, it consists of an ultra-high speed pan India unified 10-100Gbps core network of optic fibre cable with the aim to synergise research collaborations between stakeholders from science, technology, higher education, health, governance, agriculture. This would encourage, enable, enrich and empower the user community to test and implement innovative ideas without any access constraints. While NKN will connect nearly 1000 nodes covering all universities, Ministry of Human Resource Development will connect all colleges to the NKN.

**Investing in Building Potential Innovators: The DST INSPIRE Programme**

The Department of Science and Technology has launched the INSPIRE programme to scout and identify young talent for careers in the science stream. It comprises of

a) 2,00,000 INSPIRE Awards per year, each of Rs. 5,000 per award. Every high school is provided with a minimum of 2 awards per school in 5 years, for children in the 10-15 age group. In Science project exhibition 5 to 10 percent of entries in Science Project Exhibitions will be selected by jury for State and national level prizes.

b) For children in the 16 to 18 age group, 50,000 INSPIRE Internships are awarded every year to the top 1% of students in class X, who get to interact in summer and winter camps with Nobel Prize winners.

c) 10,000 INSPIRE Scholarships of Rs 80,000 per year are awarded for 5 years to youth in the top 1% in their respective Class XII Board examinations courses in basic and natural science at the undergraduate and upto postgraduate levels.

d) 1000 Fellowships are provided to students who enrol in the doctoral course in the 22-27 age group and
e) 1000 Inspire Faculty positions in 27–32 age groups are offered to young inquisitive minds who would like to continue in the area of teaching.

> “If you dream alone it is a dream, if you dream together it is reality”
Challenge Funds for Innovation

Challenge Fund for reducing drudgery of the working class population

The first of the Challenge Funds to be initiated by the National Innovation Council was a call for proposals to reduce the drudgery of the working class population. It is an acknowledgement of our collective failure to use our scientific and technological manpower to address problems of the average citizen. The challenge is to provide decent conditions of work to labour and NInC proposes to support and reward proposals that improve the design of work implements, processes, and models that improve work conditions. This goes with the caveat that proposals should not be labour displacing. (Please refer to Annexure 3 for a copy of a recent Council call for proposals.)

India Inclusive Innovation Grand Challenge awards

NInC proposes to introduce an India Innovation Grand Challenge Award where it will pose a few national challenges and seek solutions. The work of identification of themes is in progress and this will soon be opened up for comments and for sourcing more ideas for the Grand Challenge. It is expected that about 6-10 India Grand Challenge Awards could be launched beginning FY 2012.

We welcome either from the people on which 5-10 challenges, the country should address on an urgent basis. Ideas may be submitted at our India Innovation Portal (www.innovation.gov.in).
Partnering for Innovation: Collaboration and Networks

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

To foster collaborations on innovation, exchange ideas and create a platform for knowledge sharing and collective solution building, the National Innovation Council is hosting the first Global Roundtable on Innovation in New Delhi on 14th-15th November 2011. The heads of innovation from 15 Governments have been invited to come together to discuss the role of innovation in improving growth and welfare. The key objective of the Roundtable is 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 focus of the Roundtable is to: Discuss innovations that have addressed the needs of those at the Bottom of the Pyramid and achieved scale; Explore possibilities in the new century for collaborations and network creation; Contribute, through such sharing of experiences, for making innovations a prime driver for collective solution building; and Leverage this Global Innovation Roundtable to stimulate greater global cooperation across countries and formation of networks.

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. 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 GÉANT 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 scientific instrument near Geneva, spanning the border between Switzerland and France about 100 m underground. It is a particle accelerator being used by physicists to study the smallest known particles, the fundamental building blocks of all things. 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 vECC and TIFR.

Further, the GLORIAD (Global Ring Network for Advanced Application Development) in the US is also currently under process to connect under NKN. GLORIAD is built on a fiber-optic ring of networks around the northern hemisphere of the earth, providing scientists, educators and students with advanced networking tools that improve communications and data exchange.

PROGRESS

While the above collaborations are at an advanced stage of development under NKN, several other collaborative research projects are also in the pipeline to enhance international research and data sharing.
National Innovation Council: Members

Mr. Sam Pitroda, *Chairman*
Adviser to the Prime Minister
Public Information Infrastructure & Innovations

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
National Innovation Council: Members

Dr. Samir K. Brahmachari, *Member*
Director General, CSIR

Mr. R. Gopalakrishnan, *Member Secretary*
Additional Secretary to the
Government of India

Dr. Sanjay Dhande, *Member*
Director, IIT Kanpur
Annexure

Annexure 1

Order of Cabinet Secretary to specifically report on Innovation in all Cabinet Proposals


Dear Secretary,

As you are aware, the procedural requirements to be met for preparing/submitting notes for consideration of the Cabinet/ Cabinet Committees/ Group(s) of Ministers, etc. have been specified in Annexure-I to D.O. letter No.1/16/1/2000-Cab, dated 15.04.2002, which is available on the website of the Cabinet Secretariat viz. ‘www.cabsec.nic.in’. Further modifications/clarifications in these guidelines including consideration of the proposals by the appraising bodies such as Expenditure Finance Committee (EFC), Public Investment Board (PIB), Expanded Board of Railways (EBR), Public Private Partnership Appraisal Committee (PPPAC) before such notes are placed before the Cabinet/ Cabinet Committees have been issued vide O.Ms, dated 25.03.2008, 15.07.2008 and 25.05.2009 by the Cabinet Secretariat which are also available on the Cabinet Secretariat’s website.

2. As you are aware, the President in her address to the joint session of Parliament on 4th June, 2009 in paragraph 31 of the of the address had stated that ‘An area of major focus for my Government would be reform of governance for effective delivery of public services. Reports of the Administrative Reforms Commission would guide the effort. Reform of structures in the higher echelons of government, increased decentralization, inclusion of women and youth in governance, process reform and public accountability would be key areas for focused action. As part of process reform, all proposals to the Cabinet will have to report on how the proposal under consideration will enhance the goals of equity or inclusion, innovation and public accountability”.

DR. MRUTYUNJAY SARANGI


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DR. MRUTYUNJAY SARANGI
3. With a view to ensuring that the three overarching public policy objectives of the Government are achieved, in partial modification of the existing guidelines/instructions on the subject, it has been decided that all notes for consideration of the Cabinet/Cabinet Committees shall henceforth indicate how the proposal under consideration will enhance the goals of equity or inclusion, innovation and public accountability. Accordingly, the existing instructions (referred to in paragraph 1 of this letter) for preparation and submission of Notes for the Cabinet/Cabinet Committees and various appraising bodies are hereby modified, as indicated in the paras below.

4. At present, under these instructions, in the penultimate para of the main Note the Ministry/Department is required to refer to the Implementation Schedule which is to be attached as Appendix. The Implementation Schedule would henceforth be Appendix I to the Note, while elaboration on the aspects of equity, innovation and public accountability would, to the extent relevant, be incorporated as Appendix II to the Note, as per the specimen format attached with this letter Appendix II is to be of one page only. The paragraph immediately preceding the penultimate para in the main note would provide a gist of the contents of Appendix II in a few sentences.

5. While reporting on how the proposal under consideration will advance the goals of equity or inclusion, innovation and public accountability, various aspects of these goals may be kept in view:
   (i) Equity could include geographical considerations, particularly for backward and special category regions, socio-economic equity in the context of disadvantaged communities, gender, poverty, etc;
   (ii) Similarly, the dimension of public accountability could include (but not be limited to) increased stakeholder participation, awareness campaigns, cost benefit analysis, social audit, independent evaluation and the provision for greater transparency or information disclosure. The proposal should also detail how it is using information tools for ensuring transparency and accountability as well as reporting in the public domain: and
   (iii) As regards innovation, there could be improvements in the existing schemes/structures/practices/procedures etc. In this context, there could be innovations in policy, in institutional arrangements, management innovations or technological innovations, and so on. Innovation could be conceived of in the scheme design itself or room could be left for innovation during actual implementation at the State level by in-built flexibility in the scheme for local innovations. Innovation could also include documentation, dissemination and implementation of the best practices.

6. It is appreciated that it may not be possible that every proposal being put up for consideration by the Cabinet/Cabinet Committee/Group of Ministers would necessarily be able to respond to these three criteria or be amenable to this format of reporting. Where none of the goals can possibly be addressed because these dimensions are not relevant to the proposal under consideration in the Note, the reason for this may be briefly specified in the Note as well as in Appendix II.

7. Care needs to be taken by the Ministries to ensure that reporting on these goals does not become perfunctory or stereotyped. Where, for instance, equity or inclusiveness is furthered,
Annexure

there should be some attempt to quantify the likely impact through suitable indicators. Similarly, where relevant, it should be specified what innovation is being introduced, or exactly how public accountability is going to be strengthened.

8. While considering the proposals, appraising bodies must deliberate on these goals in detail and the minutes of the meetings of these appraising bodies should appropriately reflect this. If for specific reasons, the proposal is in any way not likely to further the objectives of equity, or public accountability, or of promoting innovation, a clear statement to that effect needs to be reflected in the Minutes of the meeting of the appraisal body.

9. These instructions may be strictly adhered to in preparation of Notes for Cabinet’ Cabinet Committees. Motes received in deviation from these instructions will be returned by the Cabinet Secretariat in future.

Yours sincerely.

(Mrutyunjay Sarangi)
STATEMENT ON EQUITY, PUBLIC ACCOUNTABILITY AND INNOVATION

Subject: ________________________________________________________________________

<table>
<thead>
<tr>
<th>S. No.</th>
<th>The required goal</th>
<th>How does the proposal advance this goal?</th>
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<tbody>
<tr>
<td>1.</td>
<td>Equity or inclusiveness</td>
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<td>2.</td>
<td>Public Accountability</td>
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<td>3.</td>
<td>Innovation</td>
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Signature __________________________
Name _____________________________
__________________________________
Designation ________________________
Not below the rank of Joint Secretary in the sponsoring Ministry/Department)

Telephone No. _____________________
State and Sectoral Innovation Councils

19 States have constituted the State Innovation Council

1. Arunachal Pradesh
2. Himachal Pradesh
3. Manipur
4. Andaman and Nicobar Islands
5. Bihar
6. Madhya Pradesh
7. Lakshadweep
8. Karnataka
9. Mizoram
10. Uttar Pradesh
11. Rajasthan
12. Kerala (State Planning Board has been entrusted with the task)
13. Puducherry
14. Assam
15. Haryana
16. Goa
17. Delhi
18. Punjab
19. Jharkhand

16 Ministries/19 sectors have constituted the Sectoral Innovation Council:

1. Department of Telecommunications (Ministry of Communications and IT)
2. Ministry Of Steel
3. Ministry of Commerce and Industry
   a. Department of Commerce
   b. 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, Dept of Youth Affairs
11. Ministry of Road Transport & Highways
12. Ministry of Labour & Employment (3)
   a. Simplification and Amalgamation of Labour Laws
   b. Rashtriya Swasthya Bima Yojana
   c. Occupational Safety and Health
13. Ministry of Chemicals and Fertilizers
14. Ministry of Petroleum & Natural Gas
15. Ministry of Information & Broadcasting
16. Ministry of Railways
Innovation for those most in need
National Innovation Council

By December 31st 2011
Proposals must reach the Council

www.innovationcouncil.gov.in
Email: innovationcouncil@nic.in
Sanad Shang, New Delhi-110001
Room No. 274, Yojana Bhavan

The National Innovation Council

These proposals may be sent to the head copy of each of:
- Specialized proposals will be reviewed and supported
- Groups and bodies are encouraged to apply
- Professional, Young people, Professional
Proposals should be focused on:
- Construction workers and so on
- Groups like under-privileged, etc.
- Employment and training of different cooperative
- Emerging opportunities, better processes, new
- Business opportunities, models for
- Improvement of work environment, models for

These could be in the areas of design

Proposals for renovations to reduce the dependency of our
The National Innovation Council looks forward to

Annexure 3
CONTACT US

NATIONAL INNOVATION COUNCIL
Office of Adviser of the Prime Minister
Public Information Infrastructure and Innovations Planning Commission, Yojana Bhavan Parliament Street, New Delhi - 110001.
Telephone : +91-11-23096622

Website: www.innovation.gov.in
www.innovationcouncil.gov.in
www.iii.gov.in

E-mail : s.pitroda@nic.in
r.gopalakrishnan@nic.in