



NKC Blueprint for Reform

NKC Recommendations

To take its mandate forward, NKC focused its deliberations on five key areas: enhancing access to knowledge, reinvigorating institutions where knowledge concepts are imparted, creating favourable ecosystems for making India a global leader in creation of knowledge, promoting applications of knowledge for sustained and inclusive growth and using knowledge applications in delivery of public services. Institutional reform and optimal utilization of the potential of ICT were recurrent pivots of NKC deliberations. NKC has submitted specific recommendations to the Government on 20 issues till the end of December 2007. Of these, 11 were submitted during 2007, which are reproduced later in the Report. Those submitted in 2006 were included in the last report. Recommendations are under formulation in respect of some other issues.

Overview of Recommendations Submitted

The core of NKC recommendations relate to institutions of learning, particularly at the higher level. Supplementing this core are recommendations for revitalizing associated sectors like libraries, creating a digital broadband network interconnecting all research and education institutions, and promoting a vibrant translation industry to create better access for all groups. Recommendations were also made by NKC on enhancing systems of knowledge creation. These included suggestions on creating a better environment for innovation in the country, a robust intellectual property rights regime, incentivizing research in universities, promoting traditional health systems and creating a better framework for delivery of government services to citizens through a citizen centric e-governance programme.

Right to Education

The 86th constitutional amendment act resulted in the Right to Education being made a Fundamental Right. Following this commitment, NKC believes that the central government must enforce legislation on Right to Education. NKC has reiterated the need to ensure that a financial provision requiring the central

government to provide the bulk of the additional funds needed for realizing the Right to Education must be there in the central legislation. Further, the responsibility of the Government, at different levels, must be recognized and made justiciable.

Higher Education

In Higher Education, NKC has focused on the three crucial aspects of expansion, excellence and inclusion. There are about 350 odd universities and 18,000 colleges providing higher education in the country, to about 10% of the relevant age group. This is extremely inadequate in a country where the demographic dividend by way of a young population of about 550 million youth, is a much talked about asset. If we are to achieve a Gross Enrolment Ratio (GER) of 15% and above by 2015, we need to substantially increase the number of higher education institutions (HEIs) in our country. While this expansion will have to be achieved in part through increased public spending on higher education, it will also require diversifying the sources of financing to encourage private participation, philanthropic contributions and industry linkages. To this end, the current barriers to entry in setting up HEIs are very high relying primarily on legislation. NKC's recommendation to set up an Independent Regulatory Authority for Higher Education (IRAHE), at an arm's length from all stakeholders, that would accord degree granting power to universities, is one way to supplement the process of setting up universities through legislation. The regulator would also be responsible for monitoring standards and settling disputes. This will streamline regulation of higher education in the country which at present is marked by a multiplicity of regulators, often with overlapping mandates. A plethora of regulations without adequate autonomy or accountability for institutions has resulted in a system that is over regulated and under governed.

Addressing the need for both expansion and quality, NKC has also recommended setting up of 50 national universities. To ensure quality NKC has called for reform of existing universities including frequent curricula revisions, introduction of course credit

system, enhancing reliance on internal assessment, encouraging research, and reforming governance of institutions. Further, there is an urgent need to restructure the system of affiliated undergraduate colleges which no longer provides a viable model for quality higher education. Creating more department based unitary universities and giving greater autonomy to existing institutions should be explored. Instead of a single accreditation agency created with state monopoly, multiple accreditation agencies maybe licensed by the IRAHE to do the ratings. Backed by stringent information disclosure norms, this would empower students with reliable information and would be a mechanism for ensuring accountability. Quality may also be enhanced through upgradation of infrastructure, attracting and retaining talented faculty through introducing salary differentials, greater research opportunities, faculty exchange programmes etc.

NKC believes that all deserving students should have access to higher education, irrespective of their socio-economic background. While the government heavily subsidizes university education by keeping fees low, there is better value created for this subsidization by ensuring well funded scholarships and affirmative action that takes into account the multi dimensionality of deprivation.

Open and Distance Education & Open Educational Resources

Distance education can provide access to education for a large number of students, including for learners with special needs. With the proliferation of media like television, radio and Internet, its reach can be significantly increased. NKC recommendations on distance education focus on creating a national ICT infrastructure, developing web based common open resources, establishing a credit bank and providing a national testing service. Regulation of distance education would be performed by a sub committee under the proposed independent regulatory authority. To supplement this, NKC also recommends that the production of quality content & leveraging global open educational resources, needs to be focused on in a comprehensive manner. We need to encourage open access for all material-research papers, books, periodicals etc and develop a network enabled delivery infrastructure.

Professional Education

The centres streams in many ways exemplify the problems that plague our higher education system, especially the regulatory framework. NKC has therefore recommended that the present regime of regulation in all professional education streams, be replaced by subgroups on different streams under the proposed independent regulator. This would have to be accompanied by independent multiple accreditation agencies that provide reliable ratings. Other measures include allowing greater autonomy to institutions, reforming the current examination system, developing contemporary curricula that are regularly updated and encouraging research. Hiring and retaining talented faculty is a significant problem in all professional education streams, as more lucrative career opportunities are available outside academia in their disciplines. A slew of measures such as introducing salary differentials, permitting opportunities in professional practises and consultancy services may need to be explored. Indian Law schools need to orient themselves to meet the growing international dimensions of legal education and of the legal profession. Centres for Advanced Legal Studies and Research (CAL SAR), one in each region, have been proposed by NKC to carry out cutting edge research on various aspects of law. These centres would also serve as think-tanks for advising the government in national and international fora. Regional imbalances in medical education would be a limiting factor in providing affordable health care for all sections. Medical education therefore would need to strengthen its focus on public health. It was felt that the quality of management education should be enhanced through increasing its social relevance as well as looking at a programme of mentoring for the proliferating institutions.

Vocational Education and Training

While Higher Education enrolment has to increase markedly, the skill requirement of the growing economy means that a large proportion of our labour force needs to be provided vocational education and be trained in adequate skills. This skill element has to be integrated with the higher education system to ensure maximum mobility. NKC's recommendations focus on increasing the flexibility of vocational education and training (VET), within the mainstream education system. They point to a need for quantifying and monitoring



the impact of vocational education. At present, reliable data and information on this aspect is not available. While the resource allocation for vocational education needs to be increased, we also need to look at expanding capacity through innovative delivery models, including robust public private partnerships. PPP frameworks need to be well thought out and devised keeping in mind the specificities for the sector. Given that only 7% of the country's labour force is in the organized sector, enhancing training options available for the unorganized and informal sector will be critical for enhancing the productivity of the bulk of our working population. It is necessary to ensure a robust regulatory and accreditation framework, along with proper certification of vocational education and training. This will allow easier mobility into higher education streams, enhancing the value of such training and providing continuous opportunity for upgradation of these skills. Vocational education and training therefore needs a concerted re-branding effort to increase its value and ability to command higher incomes.

Libraries

Education systems, formal and informal, while being critical, are not the only components of a knowledge society. NKC's mandate therefore is wider than building excellence in our education system, and stretches to several key associated sectors that propel a knowledge based economy and society. Critical to this are domains which create access to knowledge. To this end NKC has suggested reforms for revitalizing the entire library and information services (LIS) sector in the country. India has a vast network of libraries in the public and private domains. However, they often lie in various stages of disuse. Libraries can be revitalized, not merely as repositories of texts, but as dynamic centres for the sharing and dissemination of knowledge. NKC recommendations highlight some basic lacunae such as the lack of a comprehensive census of libraries in the country. They focus on modernizing the management of libraries to ensure greater community participation; including creating models for public private partnerships in LIS development. Leveraging ICT for various applications such as cataloguing, digitization of content, creating e-journals etc, is also highlighted. To give the sector sustained attention, NKC recommended the setting up of an independent and autonomous National Commission on libraries

which would be responsible for undertaking a host of measures and streamlining all initiatives for the development of the sector.

English Language

An inclusive society is the foundation for a knowledge society. Language is significant, not only as a medium of instruction or a means of communication but also as a determinant of access. In the current scenario, an understanding and command over the English language, is a most important determinant of access to higher education, employment possibilities and social opportunities. NKC therefore recommends that the teaching of English as a language should be introduced, along with the first language (either mother tongue or the regional language) of the child, starting from Class I. Further, NKC has also focused on the need to reform the pedagogy of English language teaching and learning, to reduce the disproportionate emphasis on grammar and focus on creating meaningful learning experiences for the child. Given that language learning is contingent on the environment, all available media including audio visual and print should be used to supplement traditional teaching methods.

Translation

In a multilingual country, translation should play a critical role in making available knowledge to different linguistic groups. Translation here implies not just translation of literary texts, but across a range of areas. These would include translation of pedagogic materials at all levels, especially in the sciences and social sciences, translation of content- as e-governance applications becomes increasingly localized and ubiquitous, and also different types of translation both human and machine aided. It may therefore become a commercially viable activity with a very high direct and indirect employment generation potential. To this end NKC recommended setting up a National Translation Mission with a focus on promoting translation activities across the country. The Mission would undertake a host of activities such as setting up a storehouse of information on all aspects of translation, providing quality training and education for translators, creating and maintaining various tools for translation including digital tools, setting up a national web portal on translation, organizing conferences, book launches, festivals and fellowships and promoting research and development of translation as a discipline.



Knowledge Network

An important recommendation emerging from NKC is to interconnect all knowledge institutions throughout the country, through an electronic digital broadband network with gigabit capabilities, to encourage sharing of resources and collaborative research. In a country like India where resources are limited and unevenly distributed in the education system; by way of quality of faculty, course materials and infrastructure, some of the limitations may be overcome by providing interconnectivity that allows institutions to share their resources and best practices, as well as promotes excellence by allowing cutting edge collaborative research. It is critical that a special purpose vehicle comprising of stakeholders, including professionals and industry representatives should be tasked with managing the day to day working of this network to ensure that there is ownership of this network by the user community, rather than it being managed as a state administered scheme.

Health Information Network

Another significant network related recommendation of NKC pertains to creating a comprehensive health information network. The developments in information and communication technology have created new opportunities for enhancing the efficiency of health care delivery. In this context NKC believes that the country needs to develop a web-based network, connecting all health care establishments, in both private and public sectors. When fully functional, all health care transactions will be recorded electronically and this data will be available in the health data vault to authorized users, when they need it and where they need it. For this purpose a common Electronic Health Record (EHR) based on open source solutions needs to be created and disseminated widely. NKC recommendations focus on establishing national standards for clinical terminology and health informatics. They highlight the need to create a policy framework for promoting the use of IT in health care and the attendant measures to ensure security of data. The implementation of these recommendations would require setting up an institutional body with appropriate professionals with domain expertise, adequate budget, time tables, and measurable milestones. A policy framework put in place now, and a focused organization to implement

plans for the coming years will ensure enormous improvements in health care delivery in India.

Portals

NKC has also proposed creating national web based portals on certain key sectors such as Water, Energy, Environment, Education, Food, Health, Agriculture, Employment, Citizens Rights etc. The portals would serve as a single window for information on the given sector for all stakeholders, from students to researchers and practitioners in the field. These portals should be managed by a consortium consisting of representatives from a wide range of stakeholders to ensure that they are not owned by any one organization, but have a national character. NKC facilitated the setting up of two portals: one on Water, championed by Arghyam Trust and another on Energy championed by The Energy Research Institute (TERI). Work on a biodiversity portal and a teachers' education portal has also been initiated.

Intellectual Property Rights

For India to become a global knowledge leader, we would need to be at the forefront of creating knowledge. This requires a favourable eco-system that not only protects the ingenuity of the creator but also rewards knowledge creation through commercial applications. In order to facilitate the creation of knowledge NKC has recommended scaling up efforts to build a world class IPR infrastructure, including steps to modernize the patent offices with computerization, e-filing, process re-engineering, human resource development, transparency, documentation, accessibility and building global standards. IPR training in IP Offices as well as in educational institutions needs to be intensified, and IPR Cells should be developed. In addition NKC has recommended establishing new structures such as a separate IPR Tribunal, a national institution for cutting edge IPR policy and a Global Technology Acquisition Fund. NKC recommendations also highlight the need to protect traditional knowledge, create incentives for it and also explore mechanisms for identification of key IPR issues in new technology areas.

Legal Framework for Public Funded Research

Further, to revitalize research in universities and give an impetus to public funded research there is a requirement for enacting a legislation that would



give universities and research institutions ownership and patent rights over inventions arising out of government funded research. This will create an enabling environment for commercialization of such inventions through licensing arrangements where inventors would also be allowed to receive a share of the royalty. However, the proposed enactment should incorporate important safeguards for exceptional circumstances where the government could be given 'march in rights' to protect public good.

National Science and Social Science Foundation

A National Science and Social Science Foundation (NS3F) was recommended by NKC to look at all knowledge as one seamless entity. The objectives of the NS3F would be to suggest policy initiatives to make India a leader in the creation and use of new knowledge in all areas of natural, physical, agricultural, health, and social sciences. The NS3F would also ensure that science and technology are maximum used for betterment of the lives of our people.

Innovation

Innovation is a key driver of growth based on knowledge inputs. NKC conducted an extensive survey on the status of innovation in the country. NKC's Innovation Survey reveals that innovation is emerging as one of the key factors in India's economic growth, where both large firms and SMEs have increased innovation related revenues. The strategic prioritization of innovation has also increased significantly since the start of economic liberalization. Crucial firm level structures and processes play a key role in innovation, but skill shortage arising out of lack of emphasis on experimentation/problem solving in the curricula is a critical barrier. There is also need for more effective synergy between industry, government, the educational system, R&D environment and the consumer. Further a comprehensive campaign is needed across the entire economy from the grassroots to the large firm level to make India a global leader in innovation.

Traditional Health Systems

India has an immensely rich and complex indigenous medical heritage. With medical pluralism increasingly being recognized as the way forward in meeting the health requirements of people, we have an

opportunity to provide quality health care based both on traditional health systems and more conventional evidence based biomedical sciences. NKC has recommended that major efforts be undertaken to provide quality education in traditional medicine. Evidence-based approaches should also be introduced into the current educational framework, possibly through institutions of the standard of IISc, IITs and AIIMS, with commensurate financial outlays. NKC recommendations focus on the need for strengthening research through concerted higher investments and more rigorous methodologies, ensuring internationally acceptable standardization and documentation of herbal medications, promoting clinical trials, along with adhering to a world-class certification process. This will assist the achievement of internationally acceptable standards for good manufacturing, laboratory, clinical, agricultural and collection practices. Another aspect highlighted by NKC recommendations is the need to create a suitable IPR framework for better protection of the sources of traditional medical knowledge, while at the same time ensuring that sufficient incentives are created for commercialization of traditional medications. Efforts already ongoing for a Traditional Knowledge Digital Library (TKDL) should be diversified and expanded to include medical knowledge.

E-governance

To enhance the efficacy of delivery of services by the government, NKC has reiterated that e-governance should be an opportunity not merely for computerization of age old processes, but a step towards re-thinking our systems and processes to ensure greater efficiency and citizen orientation. NKC recommendations focus on re-engineering government processes to change the basic pattern of governance for simplicity, transparency, productivity and efficiency. They highlight the need for developing common standards and deploying a common platform/infrastructure for e-governance. Further 10 to 20 important services that make a critical difference to citizens may be selected, simplified and offered as web-based services, along with beginning all new national programmes (like Bharat Nirman, Rural Employment Guarantee Scheme, etc.) with well-engineered e-governance implementation and web interface. This will ensure speedy delivery, productivity and efficiency of services making them



citizen centric and ensuring that the right people get the benefits.

Overview of Recommendations Under Formulation

School Education

Complexity of the issues involved in School Education and their regional diversity necessitate consultations on a scale wider than any other work done by NKC. A series of workshops were therefore held around the country, addressing issues of quantity, quality, management and access in school education. A wide range of stakeholders were involved in the consultations, including representatives from the government and bureaucracy, school administrators, teachers, personnel from DIETs and SCERTs, educationists, NGOs/civil society organizations and private education providers.

At the end of an extensive process of discussion and consultation, some of the key areas of intervention that have emerged are:

- Institutional reform within SSA and other central schemes to allow greater flexibility for the States and optimize learning outcomes.
- Streamlining the methodology of data collection to ensure timely access to reliable data, including data for tracking the actual coverage of schools.
- A set of minimum requirements, norms and standards for all schools.
- Improvement and regulation of teacher training institutions, expansion and reform of in-service teacher training and creation of linkages with the university system, restoring dignity of school teaching as a profession, and simultaneously devising transparent systems for ensuring accountability of school teachers, setting up a national portal for teachers to exchange ideas, information and experiences.
- Undertaking curricular reform in light of the National Curriculum Framework, 2005 to make it more flexible and relevant, and simultaneously change the examination system, especially at the board level, to reduce the pressure for rote-learning.
- Building infrastructure for new technologies, especially ICT, for cost-effective use of resources, innovative pedagogical strategies and wider exposure for students and teachers.

- Evolving special strategies to ensure greater access to school education in backward and remote locations, ensure greater enrolment of girls and students from marginalized social groups, and address special needs of labouring children, children of migrant workers and the differently abled.
- Expanding the National Literacy Mission and reorient its programmes to address the intellectual, physical and emotional needs of those too old to benefit from the SSA.
- Enhancing the capacity of the private sector to make positive contributions.

Attracting more Talented Students in Maths and Science

NKC believes that a strong foundation in pure sciences will help India in building excellence in technology, propel economic growth and consequently raise living standards for all. We need to therefore induct and nurture talented students in this field. Wide consultations have been held with professors, college teachers, scientists and industry associations. For this purpose, NKC conducted four workshops, one each at TIFR, IISc, Delhi University and SN Bose Centre for Basic Sciences. In addition, interviews with experts from academia, research and industry were held. A working group has now been constituted to formulate strategies for attracting more talented students in Maths and Science.

The following key issues are being deliberated upon:

- Changing the way sciences are taught: issues of pedagogy, teacher training, teacher compensation, evaluation, curriculum and methodology.
- Diversifying career opportunities in Science: increasing attractiveness of existing careers and generating new opportunities through collaborations between industry, universities and research institutes.
- Strengthening infrastructure: optimizing use of available infrastructure and diversifying sources of funding through public private partnerships.
- Undertaking Science popularization programmes on a large scale.

Engineering Education

Despite the proliferation of engineering colleges in some parts of India, quantity, quality and access continue to be areas of major concern. In addition, faculty



shortages, irrelevant curricula and unemployment of graduates plague the system. A Working Group of eminent experts from academia and industry has been constituted which is deliberating on the following major issues:

- Enhancing access including reduction in regional disparities.
- Attracting and retaining faculty.
- Encouraging research.
- Strengthening and encouraging optimal use of existing infrastructure.
- Curriculum reform to meet technological obsolescence and industry needs.
- Changing teaching and evaluation methodologies, giving greater autonomy to teachers and institutions to encourage creative teaching and problem solving.
- Greater industry-academia interaction to bridge the skill gap and promote R & D.
- Reform of regulatory institutions and the system of accreditation.

Knowledge Applications in Agriculture

NKC believes that appropriate application of knowledge in agriculture is essential to boost the agrarian economy and give the Indian farmer a competitive edge in the global market. However, despite the diverse mix of actors engaged in knowledge generation and application in agriculture, its utilization at the ground level remains poor. The scope of research and extension must be expanded beyond technology transfer to encompass a wide range of services relating to knowledge creation, exchange, access and use. NKC has constituted a working group in order to arrive at concrete proposals for reform in this area. Some of the key issues under consideration are:

- Examine existing paradigms of research and extension in view of the new challenges and opportunities facing Indian agriculture.
- Evolve research priorities in areas where it is urgently needed, like rain fed agriculture, water management and soil health, as well as in high-potential areas of growth like organic farming, food processing and horticulture.
- Identify norms, rules and practices that isolate the public research and extension system from other

players engaged in knowledge generation and application, and make suggestions for institutional reform.

- Look into restructuring the curriculum and the structure of assessment and incentives in the National Agricultural Research System (NARS) in order to encourage innovation and increase engagement with the field.
- Examine current initiatives for agricultural extension and suggest mechanisms for ensuring more operational freedom at the field level, to bring about a more decentralized, participatory and locally responsive system.
- Expand the scope and expertise of extension workers and enable them to provide an integrated range of services, incorporating local and indigenous knowledge, market information systems, credit and labour market knowledge.
- Focus on making small farm agriculture remunerative by enhancing the capacity of small farmers to access high value markets.
- Examine the implication of private sector participation in agricultural research and extension and devise frameworks for productive public-private partnerships.

Entrepreneurship

In view of the critical role played by Entrepreneurship in wealth creation and employment generation, NKC is currently engaged in a nationwide survey on the subject. Interviews have been held with over 160 entrepreneurs across a wide range of sectors in various cities, along with consultations with diverse stakeholders such as Industry Associations and Chambers of Commerce, educational institutions, incubation centres, banks, angel investors, seed capital funders, venture capitalists and entrepreneur networks. In its forthcoming report on Entrepreneurship, NKC will highlight some crucial trigger points that will foster the growth of Entrepreneurship in the country, as well as identify crucial bottlenecks. NKC will also formulate recommendations on creating a favourable ecosystem to facilitate entrepreneurship. Widespread dissemination of the report and consultations on implementation with stakeholders will be undertaken to facilitate exchange of good practices and to recognize and celebrate entrepreneurship.



Follow up on NKC Recommendations

In view of the critical role that knowledge institutions would play in making India a global leader in the 21st Century and in meeting the growing aspirations of the large component of the young in India's population, there was little doubt that education and related sectors would merit large infusion of resources in the XI Plan. It was also apparent that institutional reform would need to supplement this infusion. NKC was envisaged by the Government as one of the key concurrent processes for the XI Plan: 2007-12. Recommendations of NKC have been key inputs in formulating broad contours of the XI Plan.

NKC perceived the follow up on its recommendations as:

- commitment of financial resources in the XI Plan with stress on institutional reform;
- wide dissemination of NKC recommendations and discussion thereon for engaging diverse stakeholders to create favourable opinion towards reform; and
- preparation of detailed strategies and plans for implementation at the State level.

The progress made in each of these is presented below.

A. XI Plan 2007-2012

The XI Plan, approved at the meeting of the National Development Council on 19th December 2007, places the highest priority on education as a centred instrument for achieving rapid and inclusive growth. This is reflected in the five fold increase in resources allocation. At Rs. 2.70 lakh crore, it constitutes 20% of the Plan, representing a credible progress towards the target of 6% of GDP. The following paragraphs summarize the major components of the XI Plan relating to the recommendations made by NKC. They appear in the same order as in the Plan.

E-governance for Better Service Delivery etc. (Volume I: Inclusive Growth)

- Process re-engineering to be the most crucial element of the agenda to make delivery of services citizen centric.

- Creation of a common service delivery platform including state wide networks, common service centres and last mile connectivity.
- A body with PM as Chair to prescribe deliverables and milestones for the national e-governance Plan.
- Make use of e-governance in implementation of all major flagship programmes.

Vocational Training & Skill Development (Volume I: Inclusive Growth)

Launch a National Skill Development Mission with an outlay of Rs. 31,200 crore to increase capacity from 2.5 million to 10 million per annum. The National Skill Development Mission would:

- Encourage ministries to expand existing public sector skill development infrastructure and its utilization by five fold.
- Modernize existing public sector infrastructure to get into PPP mode with functional and governance autonomy, establish a credible accreditation system and a guidance framework for all accrediting agencies, encourage agencies to rate institutions on standardized outcomes, and establish a "National Skill Inventory" and a "National Database for Skill Deficiency Mapping" on a national web portal.
- Set up a National Qualifications Frame-work, which establishes equivalence and provides horizontal mobility between various vocational, technical and academic streams at more than one career points and a Trainee Placement and Tracking System for effective evaluation and future policy planning.
- Enlarge the coverage of skill spectrum to 1000 trades with relevance to our emerging needs, while making a distinction between structural, interventional and last mile unemployability, and correspondingly set up programmes for 24 months, 12 months and 6 months duration. "Finishing Schools" will be encouraged to take care of last mile unemployability.
- Create a "National Skill Development Fund" imposing a universal skill development obligation on industry to invest in skill development of SCs/

STs/OBCs/Minorities/others candidates from BPL families – as their contribution to affirmative action combined with matching Government contribution.

- Facilitate repositioning of employment exchanges as outreach points of the Mission for storing and providing information on employment and skill development and to function as career counselling centres.
- Enlarge the 50,000 Skill Development Centres programme eventually into a “Virtual Skill Development Resource Network” for web based learning.

Innovation (Volume I: Inclusive Growth)

- Put in place a National Innovation Policy which encourages competition among enterprises, greater diffusion of knowledge and increased support to early stage technology development initiatives and grassroots level innovators.
- Foster increased collaboration among the R&D institutes, Universities and private sector enterprises and leverage upon their cumulative strengths in designing and implementing various innovation programmes.
- Create new interface structures to forge partnerships between academia and industry.

School Education (Volume II: Social Sector)

- Reorient Sarva Shiksha Abhiyan bringing in a strong rights focus to make Right to Education a reality: ensure basic learning conditions, special focus on Maths, Science & English, common syllabi, curriculum and pedagogy.
- Gradually reduce Central Government’s funding over the Plan period rather than move immediately to 50:50.
- Ensure minimum standards and norms for public and private schools and address systemic issues of accountability and decentralization of decision making, teacher recruitment, teacher training, learning outcome measurement, teacher motivation.
- Recognize and encourage the role of private providers.
- Special focus on disadvantaged groups and educationally backward areas.
- Scheme for universal access and quality at the

secondary stage; set up 6,000 model schools one in each Block, upgrade 15,000 primary schools to secondary level, additional infrastructure and additional teachers, hundred percent trained teachers.

- Use ICT based pedagogy and learning aids, provide broadband connectivity to all the Government and Government aided secondary schools.
- Strengthen teacher training and professional development.

Higher & Technical Education (Volume II: Social Sector)

- Expansion, inclusion and rapid movement in quality by enhancing public spending, encouraging private initiatives and initiating the long overdue major institutional and policy reforms, will form the core of the XI Plan effort.
- Improve quality: work on a detailed reforms agenda including: a) admission, curriculum and assessment; b) accreditation & ratings; c) teachers competence and motivation; and d) restructure affiliated colleges and research for policy formulation.
- An apex independent regulatory mechanism accompanied by greater autonomy and internal accountability; establish a high level committee to suggest specific reforms.
- Quantitative expansion through establishment of new government and private funded institutions and increased intake in existing institutions.
- Reduce disparities based on gender, caste, region etc. through differential support.
- Establish 30 new Central Universities, 16 in States where they do not exist and 14 as World Class Universities (all India admissions, course credits, regular syllabi revision, incentives for faculty, strong linkage with industry and research institutions, no affiliated colleges, outsource non teaching functions).
- Provide flexibility to universities to raise fees accompanied by scholarships, fellowships and student loans.
- Establish a National Science & Engineering Research Board for rejuvenation of research in Universities.
- Launch a national Mission in education through ICT coverage in all the Universities and colleges; broadband connectivity through National Knowledge Network and requisite nodes within



institutions; to be implemented through an empowered committee.

- Revitalize and reform polytechnics through industry linkage and teacher development, establish 210 community colleges and 700 polytechnics.
- Strengthen open universities and reform statutory bodies, scale up SAKSHAT as the education portal for 50 crore people.

Libraries (Volume II: Social Sector)

- Develop Public Libraries including Rural Public Libraries.
- Special collections and technological support for visually challenged and hearing impaired.

Translation (Volume II: Social Sector)

- A National Translation Mission for promoting Translator education including specialized courses in translation technology.
- Translate at least five good literary works in every language into all other major languages.

Legislative Framework for Public Funded Research (Volume II: Social Sector)

There is a need for an appropriate legislative framework for incentivizing innovators and commercialization of public funded R & D, where the Government, the recipients of funds, the inventor as well as the public benefit from the protection and commercialization of IP.

Traditional Health Systems (Volume II: Social Sector)

The Plan recognizes that no single system of health care has the capacity to solve all of the society's health needs. It lays special thrust on strengthening professional education, strategic research programmes, promotion of best clinical practices, technology upgradation in industry, setting internationally acceptable pharmacopeial standards, conserving medicinal flora, fauna, metals and minerals, utilizing human resources of AYUSH in the national health programmes and strengthening IPRs with the ultimate aim of enhancing the outreach of AYUSH health care in an accessible, acceptable, affordable and qualitative manner.

Intellectual Property Rights (Volume III: Economic Sector)

- Undertake the second phase of modernization of IP offices to address the needs of human

Organizational Issues

The XIth Plan broadly incorporates many recommendations of NKC. The focus on expanding the capacity of institutions in higher and technical education, the need to evolve robust PPP models in vocational education and training, revamping libraries through greater community participation, the necessity of creating a digital broadband network for interconnecting research and education institutions and the importance of process re-engineering for e-governance initiatives, are all issues highlighted by NKC. However, a crucial aspect of NKC recommendations and perhaps the most significant innovation in many of them focuses on organizational and institutional reforms in some of our key knowledge sectors. During the extensive consultations undertaken by NKC, what emerged as an important feedback was that we need to fundamentally rethink some of our delivery mechanisms. Sustained efforts at improving the quality of school education, creating resources for institutions of higher learning, maintaining a vibrant library network, imparting vocational skills etc have not yielded results commensurate with the effort often because of the mode of delivery.

NKC therefore stressed the need to create appropriate institutional frameworks for the implementation of its recommendations:

- A National Commission on Libraries, comprising of stakeholders including professionals, was suggested as an autonomous organization to undertake the task of revitalizing the sector in a comprehensive manner.
- A special purpose vehicle (SPV) outside the government framework was recommended to manage the day to day working of the proposed Knowledge Network. This SPV would have adequate professional expertise and representation from a range of stakeholders including industry, government and user institutions.
- A National Translation Mission was proposed to provide a boost to translation activities nationwide and streamline the task of implementing the Commission's recommendations on the sector. The Mission was envisaged as an independent organization with financial and administrative autonomy.
- An Independent Regulatory Authority for Higher Education (IRAHE), at an arm's length from all stakeholders was recommended to replace the existing multiple regulators. This would not only reduce barriers to entry but also ensure uniformity of regulation among different branches of higher education.

NKC strongly believes that as resource allocation increases, institutional reforms and organizational changes may become the crucial bottleneck that hamper progress. Rapid changes are taking place in different sectors of the economy, in this scenario education and associated knowledge sectors would need to keep pace with this change to continue to be relevant. We require paradigm shifts in our delivery mechanisms to ensure that we create institutions and structures that are sustainable, have the ownership of the community and are accountable to them.

resources development, training, awareness and infrastructure besides regular updating of the IT facilities.

- Indian IPO would be made an International Searching Authority and an International Preliminary Examining Authority under the Patent Co-operation Treaty of WIPO

B. Public Outreach & Website

Policy interventions by the Central & state Governments will be necessary but not sufficient for reorienting our knowledge institutions. Critical to enhancing quality and forging partnerships among various stakeholders is paradigm shifts in perspectives and changing mindsets. Engaging a wide set of stakeholders has therefore been an integral part of the NKC process. This has taken several forms:

- a) Discussions and deliberations in Working Groups, sub-Committees, Seminars, Workshops etc. both at the national and regional levels to obtain inputs for formulating recommendations. Details regarding these consultations are given later in this Report.
- b) Public outreach after the recommendations were submitted focused on two major areas – libraries and higher education. The seminars and workshops organized for libraries engaged professionals as well as administrators to work out detailed plans and to create a movement towards reform. On higher education, the focus has been on interaction with college teachers and administrators to build consensus and exchange good practices for improving quality through measures such as semester system, course credits, enhancing accountability of teachers, teacher training, curriculum reform etc. In some larger seminars, issues of regulation, accreditation, access etc. have been discussed.
- c) Disseminate NKC recommendations/compilations/reports to as many stakeholders as possible. Both traditional mail and emails have been used to send out NKC documents to around 20,000 stakeholders. These include Ministers and officials in the Central and State Governments, District Collectors, Universities, deemed universities, colleges, professionals, academics, autonomous bodies, NGOs, multilateral donors, Indian Embassies abroad etc.
- d) Maintaining a dynamic, interactive and well-

populated website. While the main website is in English, translated pages are available in ten other languages namely Hindi, Bangla, Kannada, Assamese, Tamil, Urdu, Nepali, Oriya, Manipuri and Malayalam. All reports of Working Groups, records of other consultations and texts of recommendations are available in a user friendly format. The Resources section provides links to web based resources on issues under consideration of NKC. There is a Discussion Board for expressing opinions and suggestions on knowledge related issues. The website is proposed to be scaled up to a portal on knowledge. The website has been accessed by more than 100,000 unique visitors.

C. Knowledge Initiatives at State and District Levels

While interventions of the Central Government would be critical in policy formulation and allocation of financial resources, any perceptible and sustained reform in knowledge institutions would require action by the state Governments. In fact, knowledge institutions can meet fully the needs of the community only if plans are tailored at the District level within the broad contours of National and State level frameworks.

With this perspective, NKC took care to engage with State and district level stakeholders right through its process of consultation. Further, copies of NKC's Report to the Nation and a summary of its recommendations were sent out right down to the District level. In addition, presentations on NKC recommendations were made to State Chief Secretaries and other concerned Departmental heads. Where possible, NKC Advisers also apprised the Chief Ministers of the NKC blueprint for reform. The details of the State level visits are presented later in this Report. The State Governments have appointed state level nodal officers to follow up on NKC recommendations.

With the XI Plan having been approved at the NDC with the concomitant assurance of financial resources, the stage is now set for specific schemes and programmes to be taken up both at the State and District levels. To facilitate and expedite the process, NKC has prepared a template each for



State Knowledge Initiative and District Knowledge Initiative. Assistance will be provided by NKC to the State governments and select District authorities in preparing detailed Work Plans. These would consist of a package of initiatives culled out from NKC recommendations and the XI Plan, with detailed activities, milestones and financial outlays.

State level plans will facilitate Central and state level budgetary allocations and the District Plans will facilitate

allocation of resources from the State budget. The areas covered will be School Education, Vocational Education & Training, Higher & Technical Education, Libraries, Translation, Knowledge Network, English language teaching, Health Information Network and Traditional Health Systems. It is expected that such plans will be rolled out for all the States by the end of 2008. NKC proposes to conduct workshops for State nodal officers and select District officials to facilitate formulation of these plans and exchange good practices.

