

## **India connected, India Empowered A billion people and perhaps as many problems. But we have the technology and the talent APJ ABDUL KALAM**

I am delighted to participate in the interactive session of the India Empowered event. It was a delightful experience for me to study every day from August 14 2005, the writing on the subject, 'Empowering India', from each one of you who have assembled here, with your rich experience in multiple fields. My greetings to the organising team of Indian Express, the writers in the India Empowered series and other participants. My team studied over 160 articles and grouped them into 12 areas of presentation. It was indeed thought provoking and looked like a garland of ideas. This garland of ideas focuses, as I see it, on the need for an integrating system for the empowerment of nation and its people.

### **Knowledge society**

Out of the billion plus population in the country 70 per cent live in six hundred thousand villages. We need a societal transformation and sustainable development for our growth. These two aspects are realisable in a time bound manner only through a knowledge society, which alone will empower the entire nation. India has the potential to become a knowledge society. Electronic and knowledge connectivity is the key to realise this goal. Connecting a billion people throws up multiple challenges.

When the world was moving from the industrial to the information and knowledge era, we witnessed a changing pattern in the sectoral share of GDP and the number of people employed in each sector. Contribution of agriculture to India's GDP has reduced from 39 per cent to 22 per cent from 1979 to 2005. During the same period contribution of manufacturing sector has moved from 24 per cent to 27 per cent; contribution from the services sector has increased from 37 per cent to 51 per cent.

The percentage of people employed in agriculture has come down from 64 per cent to 54 per cent. Simultaneously, the percentage of people employed in manufacturing has gone up from 15 per cent to 19 per cent and in the service sector from 20 per cent to 27 per cent. This trend has to continue and by 2020 our employment pattern should aim at 44 per cent in agriculture, 21 per cent in manufacturing and 35 per cent in service sectors. Instead of persons from the rural areas going to urban towns in search of jobs in manufacturing and services sectors, PURA (Providing Urban Amenities in Rural Areas) facilitates creation of employment in the rural areas itself. PURA achieves this by providing physical, electronic and knowledge connectivities to a cluster of villages thereby leading to their economic connectivity and prosperity.

### **Connectivity is key**

The core of empowerment for one billion people is the connectivity and partnership between governmental and multiple institutions in the public and private domains. The strength of this partnership for collaborative growth and economic prosperity is facilitated by free flow of knowledge and information, cutting across levels and boundaries embracing all walks of life in the three sectors of the economy, agriculture, manufacturing and services. In the proposed model, the inter-connectivity between these three sectors of the economy is brought about by four grids: Knowledge Grid, Rural (seven thousand PURA) Grid, Health Grid and Governance Grid.

### **Knowledge grid**

India is now in the process of creating virtual universities and institutions for knowledge sharing, knowledge dissemination and knowledge reuse. While it is known that the virtual universities provide us with technologies of the future and the most economic way of scaling high quality education in the country, they are no substitutes to the campus based education. The challenge before the virtual universities is to provide the best of both the worlds. In this process, we could plan an optimum mix of direct contact hours between the students and the teachers and also amongst the students themselves. These interactions should also be used as a platform to excite the students to take to learning in the new paradigm. In the world of virtual universities, equitable access to all its participants is the primary goal.

### **Health grid**

Indian Space Research Organisation through their INSAT network has connected 25 major hospitals in the mainland. From there they are providing telemedicine connectivity to remote areas including our islands. Rashtrapati Bhavan Clinic is also connected to the CARE Hospitals Hyderabad through telemedicine facility. The mission of telemedicine with multiple grid is gaining momentum and it will spread to all the equipped Primary Health Centres in the country, medical colleges and research institutions in due course. We need to establish a Health Grid, connecting the various health care institutions with regard to both the super speciality and general medicine areas. Healthcare training institutes, such as nurses, para-medical staff and doctors and the medical research institutions must be networked to the health grid.

### **E-Governance grid**

I visualise an election scenario, where a candidate files his nomination from a particular constituency. Immediately the election officer verifies his/her authenticity from the national citizen ID database through multifactor authentication, through a multipurpose citizen ID card. His education credentials come from the

university records. His track record of employment comes from various employers with whom he had worked. His income and wealth resources come from the income-tax department, and other sources. His property record comes from the registration of land authority across the country. His credit history comes from various credit institutions like banks. His/her civic consciousness and citizenship behaviour comes from the police crime record. His legal track records come from the judicial system. All the details arrive at the computer terminal of the election officer within a few seconds automatically by the act of e-governance software agents which crawls across the various state and central government web services directories through the network grid and collects the information automatically and presents the facts in real-time without any bias. Artificial intelligence software analyses his credentials and gives a rating on how successful he will be as a politician. The election officer sitting at the remote block of the country decides on the spot and the election process starts. The voters vote from home through virtual polling booths.

## **Rural grid**

For providing knowledge connectivity to PURA complexes, Village Knowledge Centers will act as frontline delivery system. I visualise establishment of a Village Knowledge Center in the village panchayat to empower the villagers with the knowledge and to act as a local center for knowledge connectivity for the villagers within the framework of PURA.

The Village Knowledge Centre should provide the essential data required for the targeted population such as farmers, fishermen, craftsmen, traders, businessmen, entrepreneurs, unemployed youth and students. It has to be acquired by visiting the village, talking to the people, by understanding their requirement and core competence. The local relevance of the information offered is essential.

A low cost multi-task handheld computer with GPS and wireless mobility should be developed by the private industries and organisations and should reach the fishermen and farmers in different parts of the country.

## **Societal grid**

To maximise the synergy between the grids, leading to maximisation of GDP and productivity, there is need for inter-grid connectivities, or the societal grid.

Societal grid consists of the Knowledge Grid inter connecting universities with socio-economic institutions, industries and R&D organisations; Health Care Grid, inter-connecting the health care institutions of government, corporate and super specialty hospitals, research institutions, educational institutions and pharma R&D institutions; E-Governance Grid, inter-connecting the central government and state governments and district and block level offices for G2G and G2C connectivity; PURA Knowledge Grid, connecting the PURA nodal centers with the Village Knowledge Centres and domain service providers.

As we are talking about the responsibilities of the government, it is also essential that people are equally responsible. The education system has to create responsible enlightened citizens. A great society is interwoven by responsive elected government and also righteous citizens.

I would like to recall a hymn, 'Righteousness', that brings out the righteous righteousness in the heart that is fundamental to the transformation to the peaceful society: Where there is righteousness in the heart/ There is beauty in the character./ When there is beauty in the character/ There is harmony in the home./ When there is harmony in the home./ There is an order in the nation./ When there is order in the nation,/ There is peace in the world.

The writer is president of India. This is an edited version of his speech at the India Empowered Conclave. For the full text, go to [presidentofindia.nic.in](http://presidentofindia.nic.in)

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