Technology Priorities for India ICT R&D

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Enhancing the impact of EU-India ICT Policy Dialogue

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Research Study

- Aimed at understanding what technology priorities India might want to focus on in R&D related to the Information and Communication Technologies (ICT)
- 30 visionary experts were interviewed in India
- Details of the report will become public in two months


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Findings…

Broad characteristics of technology development in India

- Low value (low cost) high volume
- Consciousness of green computing and green devices and low energy consuming
- Predominance of software over hardware solutions
- Conscious integration of rural consumers and language diversity

Technology Priorities in India

- Experts stated many technology areas that India will focus on in the next, 2, 5 and 10 years
- These areas can be classified in two main components:

(a) Core technology development in ICT

(b) ICT for sectors and development for sectors

Core technology development

- **Internet access:** allocation of bandwidth, last mile connectivity, convergence of mobile and internet technologies
- Increasing bandwidth demands brings a pressing need for better **utilization of band width through efficient spectrum** allocation, IPV6 methodologies, LTE.
- **Networking technologies:** large networked systems, machine to machine communication, cloud computing, wireless networks and **smart networks**
- Since ICT permits the scope for devices to be linked to larger networks and thus communicate with each, device specific protocols through embedded systems can be developed to facilitate linkages.

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- **Monitoring systems,** sensors for measurement & remote diagnostics, **low cost cameras**, integrated with wireless networks, generic and mobile devices and applications

- Since the population is large and phenomenal data will be lost if not monitored, there is a need to evolve low monitoring technologies, using DSP algorithms, many low cost sensors and error compensating software.

- **Cloud Computing Applications:** Since there is expected large numbers of data, cloud computing will push down costs and offer low cost storage and accessibility

- **Security algorithms** for various systems and devices

ICT for Sectors

Healthcare:

The important development areas within healthcare include:

- Bioinformatics for better diagnostics, information management & retrieval
- Connectivity and networking of medical devices (to be redesigned such that connectivity is included)
- Smart medical systems with learning ability, patient monitoring, low cost cameras, monitoring devices to capture and transmit data
- Security in data management systems
- Large storage systems and cloud computing
- Integration of medical data and monitoring systems with **mobile**
- Telemedicine

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Energy:

The important areas in energy conversion, generation and management are:

- -ICT for Smart Grids: India is driving towards convergence of the ICT networks & the existing electric grids. A few applications include smart grids with smart metering, bi-directional information flows in networks, distributed power generation.
- -Solar panel electronics, solar gadgets
- - **Green devices**, with low power consuming displays, storage devices, and longer life batteries
- -eWaste management
- -redesign consumer goods electronics with energy and green consciousness

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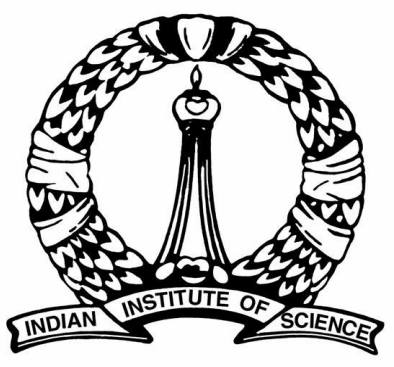
Governance and education:

There are many focus areas of governance that India will invest in, these are listed below:

- Governance related to land records, digitization, database maintenance, secure storage systems
- Person identification and tracking systems
- Transportation identification systems and RFID
- Banking identification
- Mobile based payment systems
- Education and skills training using ICT
- Mobile applications for education



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