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International Cooperation in the ICT Field: Bridging the Digital Divide

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Structure of the Presentation

- Status of the IT sector in India
- IT Policies
- Role of the Department of Information Technology, Government of India
- International Cooperation in the ICT field
- International Cooperation and relationship with Korea
- Bridging the Digital Divide

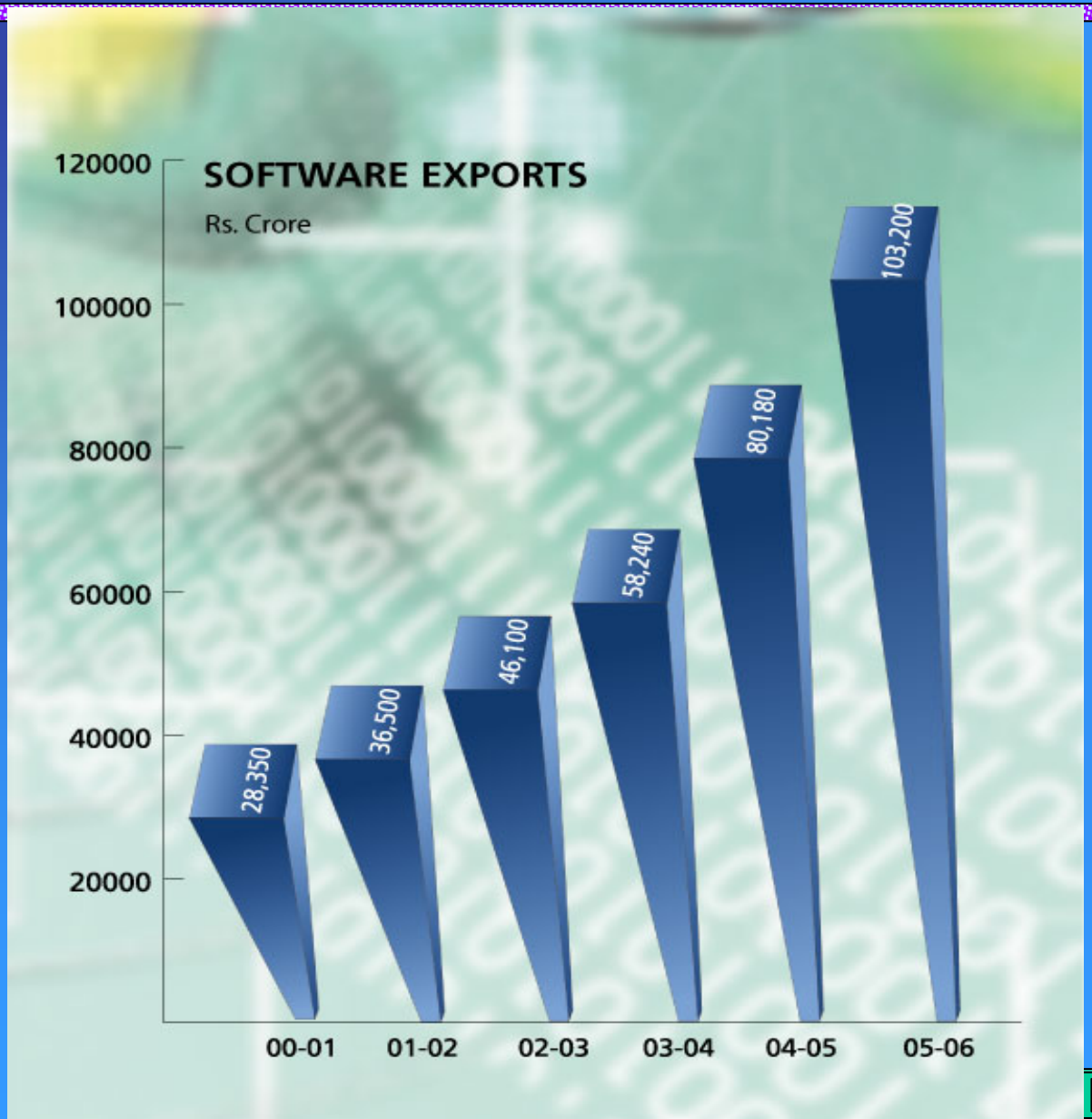
Status of the IT sector in India

Indian IT and Electronics Industry : 2005-06

	Value	*Growth*	*CAGR* (5 years)*
IT & Electronics	**$ 42 billion**	**21.8%**	**22%**
of which			
- Hardware	**$ 12.7 billion**	**11%**	**12.5%**
- Software & ITES	**$ 29.4 billion** (Exports : $23.4 billion)	**27.2%**	**28%**

* Compound Annual Growth Rate

Indian IT Software & Service Exports



Indian Software and Services Industry

- One of the fastest growing sectors of Indian industry.
- A growth of 32% in dollar terms in exports during 2005-06.
- Achieved a CAGR of 28% in turnover and exports during last 5 years.
- IT exports likely to grow by 30-32% in dollar terms in future also.
- 82 companies certified at SEI CMM Level 5 - higher than any other country in the world.

Employment Generation

Year 2008

Software Sector - **2.2 million**

Hardware Sector

- **Direct Employment** - **1.6 million**
- **Indirect Employment** - **3.2 million**

Software and services employment as of March 2006 - 1.3 million
Hardware sector direct employment in 2005 - 0.42 million

Penetration per 1000 Population

	2005-06	Target 2008
Televisions	130	225
Computers	18	31
Mobile Telephones (June'06)	105.95}	500 (2010)
Fixed Telephones (June'06)	47.42}	
Internet Connections (Dec' 05)	6.8	30

IT Policies

Policies applicable to IT Industry

- No Industrial Licence required to set up IT Industry in India
- There is no reservation for public sector enterprises in the Electronics and IT industry and private sector investment is welcome in every area
- Approvals for all foreign direct investment proposals relating to the Electronics and Information Technology sector, with the exception of Business-to-Consumer (B2C) e-commerce are under the automatic route.
- India is a signatory to the Information Technology Agreement of WTO and Basic Customs Duty on all IT items as per the Agreement is 0%

Indian Telecom Policy

Basic approach of Government in today's scenario is:

- **to provide an environment where fast growth of telecom sector continues to take place**
- **there is healthy competition among service providers**
- **services offered are of highest quality**
- **private sector investment is encouraged.**

Government's objective is to ensure that the public sector grow without having to depend on budget assistance. It envisages that the requirement of rural telephony is met from USO Fund. Government would like to ensure that a strong regulatory framework is in place.

Reforms – Phenomenal Growth

The Transformation

	From	To
Competition	■ Monopoly service provider	■ Competitive regime with multiple players
Tariffs	■ STD tariff Rs.30/minute (1999) ■ Peak cellular tariff Rs.16/minute	■ Rs. 1.20 to Rs 2.40 per minute ■ Rs.1 to Rs 2 per minute
Subscribers	■ 18 million fixed lines in March 1998 ■ Less than 0.10 million cellular in March 1998	■ About 50 million fixed lines ■ About 105 million mobiles

Role of the Department of Information Technology, Government of India

Role of Department of Information Technology

Ministry of Communications and Information Technology, Government of India

- Policy matters relating to Information Technology; Electronics and Internet
- Promotion of Internet, IT and IT enabled services
- Assistance to other departments in the promotion of E-Governance, E- Commerce, E-Medicine, E-Infrastructure, etc.
- Promotion of Information Technology education and Information Technology-based education
- Matters relating to Cyber Laws
- Initiatives on bridging the Digital Divide
- Promotion of Standardization, Testing and Quality in IT and standardization of procedure for IT application and Tasks.
- Initiatives for development of Hardware/Software industry including knowledge-based enterprises, measures for promoting IT exports and competitiveness of the industry.
- International Cooperation in the field of ICT

International Cooperation in the ICT Field

International Cooperation in the ICT Field

- The International Cooperation Division of Department of Information Technology has been set up to promote international cooperation in the emerging and frontier areas of information technology under bilateral, multilateral or regional framework.
- Such interaction provides an opportunity for sharing of knowledge and experience with countries, international bodies, academia and institutions for forging partnerships for mutual progress.
- The Department of Information Technology has signed Memorandum of Understanding / Agreement / Protocol / Program of Cooperation with 33 countries.
- The scope of cooperation envisaged in these MOUs mainly includes IT software including telecom software, IT enabled services, E-commerce services & Information Security, Electronic Governance, IT and Electronics Hardware, HRD for IT education and IT enabled education, Research and Development and Exploring third country markets.
- Under these MOUs, Joint Working Groups (JWG) have been set up as an institutional arrangement. JWGs meet from time to time and discuss agreed agendas and programmes for mutual cooperation.

International Cooperation in the ICT Field

India: A beneficiary of ICT initiatives with International Bodies

International Cooperation in the ICT Field

Development Gateway Foundation (DGF)

- Development Gateway Foundation (DGF) is an independent public foundation originally started by World Bank.

- Mission of DGF is to make available the power of the Internet to work in promoting economic development in developing countries around the world. It is currently focused on the following:

1. Improving knowledge sharing and collaboration
2. Promoting aid effectiveness
3. Increasing public sector procurement effectiveness and
4. Building local capacity by promoting Country Gateways, particularly helping small and mid-sized businesses (for example farmers) become more profitable

International Cooperation in the ICT Field

Development Gateway Foundation (DGF)

- Initially, Government of India (GOI) contributed USD 5 Million to the foundation. Out of this USD 4 Million was given to GOI to setup an ICT Research and Training (R&T) Center in India.
- India and Republic of Korea are also members of the foundation.
- This R&T Center was established as a project at Centre for Development of Advanced computing (C-DAC), Bangalore. Indian Institute of Technology (IIT) Mumbai was identified as a principal collaborator to C-DAC for this project.
- The R&T Center started its operations on 1st April 2003.
- As a part of activity, 12 projects were identified out of which 8 projects are being done at C-DAC Bangalore and remaining 4 at IIT, Mumbai.
- Projects cover the area of Internet technology, language and speech technology etc. The applications being developed are applicable to agriculture, education and health predominantly.

International Cooperation in the ICT Field

Development Gateway Foundation (DGF)

On-going projects

Localized Knowledge Management (KM) solution for the Healthcare sector

E-Forms - It is an electronic form, which is useful to collect and analyze the data. This can be used to collect data through handheld devices like Simputer. It has large potential in healthcare and agriculture domain.

Small and Medium Applications for Rural Technicalization (SMART)

Vyapar - It is an application for e-market place, which provides very easy and user-friendly means for rural mass both in product transaction and services

Office Applications Suite in Indian Languages across platforms (BharateeyaOO)

It is devoted to creating versions of common open source tools in Indian languages.

International Cooperation in the ICT Field

Development Gateway Foundation (DGF)

On-going projects (Cont..)

Text-to-Speech (and Automatic Speech Recognition) in Indian Languages (Matrubhasha)

It is a text to speech tool set. It has been developed and available on web for download for catering end users, developers and linguists.

Community Based Content Delivery Networks (CCDN)

ECKO - Empowering Communities through KnOwledge is basically a content management system tailored to the needs of villages in developing countries, especially India.

Multilingual Virtual Classroom Facility and Multilingual Communication System

Vartalaap - It is a system for distance learning including chat, whiteboard, slides, and quizzes.

International Cooperation in the ICT Field

Development Gateway Foundation (DGF)

On-going projects (Cont..)

Aid Management Platform (AMP)
AMP is a web-based application on monitoring and managing aid effectiveness both by donors and users.

Cross Lingual Information Retrieval (CLIR)
It is renamed as Document Access Across Languages (DAAL). This addresses the problem of allowing non-English speaking users to search and read documents in other languages.

Intelligent crawling, searching, browsing, and indexing of multilingual data on the Internet
The project is based on natural language processing and it will enable a language-independent representation of the text. It converts the language to neutral UNL. aAQUA is an application of English to UNL conversion.

International Cooperation in the ICT Field

Development Gateway Foundation (DGF)

Benefits and Achievements so far

- **ECKO & Vyapar: This has been deployed on pilot basis at six different locations (Rajasthan, Maharashtra, Orissa, Andhra Pradesh, Tamil Nadu, Pondicherry). Currently this addresses around 25,000 villagers in about 100 villages.**
- **aAqua: This is in the form of portal and currently hosted at IITB and being used by more than 4000 farmers**
- **BharateyaOO: A well-received software tool in Indian Language. Currently Telugu, Hindi and Tamil have been launched nationwide.**
- **Text to Speech: A tool out of this has been put on trial for Visually Challenged to use the normal computer.**

International Cooperation in the ICT Field

India: A supporter of International Cooperation in ICT field

Ebene Cyber City Project - Mauritius

Project Implementation on Turnkey basis

- Government of India and Government of Mauritius signed a credit agreement of US$ 100 million on 4th May 2001 for execution of CyberCity Project and providing communication networking for this project at Ebene, Mauritius. The project has been completed.

- On behalf of Government of India, Software Technology Parks of India (STPI) acted as a Nodal agency for setting up of the first Cyber City in Mauritius on a turnkey basis.

- The Government of Mauritius incorporated and entrusted Business parks of Mauritius Limited (BPML), a Company incorporated under the Companies Act of Mauritius, with the ownership & implementation of the project.

Software Technology Parks of India

- Software Technology Parks of India (STPI) was established in 1991 and registered as an Autonomous Society under the Department of Information Technology, Ministry of Communications and Information Technology to implement the Software Technology Park (STP) Scheme.

- STP Scheme is an export oriented scheme and has attracted many entrepreneurs in the area of software and services. More than 4200 units are exporting software and services. STP scheme allows duty free imports/procurement of goods and income tax exemption on export profits.

- STPI acts as a single-window for STP units by providing statutory services, High Speed Data Communication services and incubation facilities.

The Master Plan of Cyber City

- Ebene Cyber City is a key initiative of the Government of Mauritius to transfer the Mauritius into a Cyberland.
- It is a single stop world-class facility for ICT Companies engaged in the business of IT-Enabled services, Call centers, back office operations, Business process outsourcing, Software Development, IT Education and IT Enabled Education.
- Spread in over 440,000 square feet, the 12 floor Cyber Tower is an intelligent building with ultra-modern features.
- Knowledge and Technology sharing in a cluster approach is the key to the Ebene Cyber City. It has seven Zones to live, work & play.

Contd....

- **The Cyber Tower & Multimedia Zone: Has the "State of Art" Cyber Tower for medium and small ICT companies, including start-ups/incubators to set up their business.**

- **The Knowledge Centre: Provides facilities to companies to set up IT Education, IT-Enabled Education and Training.**

- **The Business Zone: Enables large ICT companies to setup independent businesses in large leased and fully serviced areas.**

Telecommunication Network Infrastructure

- A world-class broadband network to meet all IT & Telecommunications needs.
- Broadband VSAT Satellite Earth station and High Speed Cable/Optic fibre international data transmission links.
- Provision for multiple services providers for data & voice communication facilities, ISDN and video conferencing with unlimited bandwidth.
- Availability of latest technologies of xDSL, GPRS, wireless Broadband.
- Connection with rest of the country through high-speed mode ATM Switch and optical fibre cable.

International Cooperation and relationship with Korea

International Cooperation and relationship with Korea

- It has been envisaged to promote the investment flow from Korea to the Indian ICT hardware sector, exploitation of complementarities, development of technology, human resource development, next generation ICT industry, Broadband infrastructure, E-Governance etc.

- Strength of Korea lies in technology development and ICT hardware manufacturing, whereas India's strength lies in software development/design. Therefore, Opportunity exists for collaborative ICT Research and joint software development in a variety of applications between India and Republic of Korea. India has lessons to learn from Korea in technology/product development and ICT hardware manufacturing.

Bridging the Digital Divide

Bridging the Digital Divide

Major Focus

- Abolish illiteracy
- Reach out to people
- Enable with low cost computing
- Use language of communication

Bridging the Digital Divide

E-Governance

- The Government of India accords high priority to improving the quality of basic governance and in that context has proposed to promote e-Governance on a massive scale in areas of concern to the common man.

- A National e-Governance Plan (NEGP) has been drawn up covering 26 Mission Mode Projects and 8 support components to be implemented at the Central, State and Local Government Levels. India is aiming at achieving the objective of:

"Making all Government services accessible to the common man in his locality, throughout his life through a One-stop-shop (integrated service delivery) ensuring efficiency, transparency and reliability and at affordable costs to meet the basic needs of the common man"

Bridging the Digital Divide

State Wide Area Networks (SWANs)

Government has already approved a scheme for establishment of State Wide Area Networks (SWANs) over a period of 5 years. These SWANs will extend data connectivity of 2 MBPS up-to the block level in all States and Union Territories in the country. The block level nodes in turn, will have a provision to extend connectivity further to the village level using contemporary wireless technology.

Common Service Centres (CSCs)

India is still a predominantly rural country, with almost two thirds of its population living in villages. The Department has formulated a proposal to establish 100,000 Common Services Centres (CSCs) in rural areas, which will serve not only as the front end for most government services, but also as a means to connect the citizens of rural India to the World Wide Web. CSCs would extend the reach of electronic services, both government and private to the village level.

Bridging the Digital Divide

Community Information Centres

- To reduce the digital divide by providing Internet access and IT enabled services to the community at large and to facilitate citizen interface with the Government, Community Information Centres (CICs) have been set-up at 487 blocks in the seven North-Eastern States and Sikkim.

- 135 CICs are providing citizen-centric services in Jammu and Kashmir.

- CICs are also being established in the Government schools in Andaman and Nicobar Islands (41 CICs) and Lakshadweep Islands (30 CICs) for imparting ICT based education.

Bridging the Digital Divide

Technology Development for Indian Languages Programme (TDIL)

- In a multilingual country like India, with 22 official languages and 10 scripts, it is essential that tools for information processing in local languages are developed and be available at low cost for wider proliferation of ICT to benefit the people at large and thus paving the way towards 'Digital Unite and Knowledge for all' and arrest the sprawling Digital Divide.

- A number of initiatives have been taken towards development of software, tools and human machine interface system in Indian languages.

- To enable wide proliferation of ICT in Indian languages, the Department of Information Technology has taken a major initiative to make available tools and fonts in various Indian Languages freely to the general public.

Bridging the Digital Divide

Media Lab Asia

- Media Lab Asia has been set up as a not-for-profit organization with a vision of leveraging the information and communication technologies and other advanced technologies for the benefit of the common man.
- The goal of this organization is to bring the benefits of innovation and emerging technology to the masses.
- The organization believes that new technologies, especially ICT offer immense possibilities for socio-economic development.
- It works to harness the advances in technology for the benefit of the masses, especially rural masses that have been untouched by ICT.
- Media Lab Asia has been largely funded by the Government of India. Industry has also provided seed funding for its activities. Media Lab Asia welcomes sponsorships / partnerships for furtherance of its objectives.

THANK YOU