One Day National Conference – Enabling the Different Abled with the use of ICT

Speakers in the order of appearance:
- Vijayachandran, Future India, Thiruvananthapuram.
- Swati Chakraborti, Indian Institute of Cerberal Palsy, Kolkotta.
- Gaurav Takkar, MediaLab Asia, New Delhi.
- Dr. Arun Mehta, JMIT, Radaur, Haryana.
- K.V Johny, CDAC, Thiruvananthapuram.
- Shanti Raghavan, Enable India, Bangalore.
- Krishna Kant Mane, TIFR, Mumbai.
- Sundar R., IBM, Bangalore.
- Binu Shankar, GTECH, Technopark, Thiruvananthapuram.
- Dr. Rathan Kelkar, IAS, Director, KSITM.
- Arun M., FOSS Special Officer, KSITM.

Summary of the speeches

Session I – ICT for the Mentally Challenged and Physically Challenged.

Speaker: Mr. Vijayachandran, Future India, Thiruvananthapuram.

Title: Field Experience with the Differently Abled in Kerala and potential of ICT in enabling the differently abled.

Mr. Jayachandran spoke about his 25 years of experience working with the differently abled. Early on in his work with the differently abled he was associated with Rev. Thomas Felix and was trained by the latter. The speaker started by quoting the story of Ashtavakra, the Indian archetype of disabled person from the Indian mythology.

The speaker stressed on the importance of ICT for bringing about the inclusive development of the differently abled. Future India focuses on the social development of the differently abled among the poor. Future India also strongly supports community based rehabilitation (CBR) model.

Mr. Jayachandran then spoke about his experience with the Sampoorna Project of Future India which is CBR based. The speaker showed slides about the statistics of the differently abled in Kerala. He said that the present ICT model has created a digital divide with new forms of exclusion, with the differently abled being left out of the playing field. Then he spoke about the poverty alleviation programme of the 10th Five Year Plan. Future India tried out this programme with some gram panchayats in Thiruvananthapuram district. It was found out, that in the Venkayakulam panchayat, 500
families were below the poverty line. But the government census report of the year 2001 did not show the true picture. It was found that the government officials and community leaders were not aware or informed about the disability situation. Also they lacked the motivation to do something about it. So Future India decided to delve deeper into the problem in the 11th Five Year Plan. They started the project called Sisumitra, an early intervention programme for rehabilitating the disabled children. A pilot project was then implemented in the Nemom block panchayat. The block panchayat was segmented into seven gram panchayats and house-to-house survey of the economic and disability conditions were carried out by Future India. Out of a total population of 2.5 lakhs and 50,000 families, it was found that 4560 people had above 40% disability. The disabled were mainly categorised into the following:

- Mental retardation.
- Personal development delays.
- Visual impairment.
- Other physical disabilities.

Some of the main problems found with the disabled were:

- Difficulty in getting them out of their houses.
- Lack of confidence, self motivation and a will to live their life to the full.

The importance of the ICT in solving some of the problems of the disabled were realised by Future India.

Future India then took over the responsibility of caring for the disabled. It was later found that the differently abled showed great enthusiasm for ICT. They were better able to communicate with the outside world with the help of ICT. The importance of assistive technologies for the differently abled was also identified.

In the Nemom Government Upper Primary School, 125 children with learning disabilities were identified. ICT is being used by the students as part of the early intervention programme. Also 15 CBR centres were started at the block level and an ICT resource centre to cater to the needs of these CBR centres. The goal of Future India is to start at least 200 CBR centres in the state for the disabled.

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Speaker: Swati Chakraborti, Indian Institute for Cerebral Palsy, Kolkotta.
Title: Assistive technology available for the Cerebral Palsied.

IICP is an NGO aided by Ministry of Social Justice and Empowerment.

The speaker started by saying that she was speaking on behalf of all her disabled colleagues at IICP. IICP has been functioning for the last 32 years mainly in West Bengal and the North Eastern states. Also most of the disabled working with IICP are also activists. The speaker spoke about the activists Sayomdeb Mukherjee who is 95% disabled including speech disability and Barsha another activist and research scholar at IICP. Both these activists use ICT in their daily life to communicate with the outside world.

Speaker also spoke about what is meant by Assistive Technology. She said that AT helps in including the disabled into the information society and empowers them in their life. IICP has a team consisting of

- IT technologists.
- Speech and language pathologists.
Activities of IICP also include:
- Fine tuning of hardware and software for the disabled.
- Publications.
- Research.
- Training.
- Preparing affordable and culturally relevant materials.

The speaker spoke about some of the software developed for IICP.

**Indian Picture Symbols for Communication (IPSC).** Developed for IICP by Media Labs Asia. The library consists of 1936 culturally and linguistically appropriate picture icons to make communication displays. It also has search and edit features. The library is also language independent.

**Gupshup** – This is a talking board software that supports Bengali, Hindi and English languages. This teaching aid facilitates teachers of special children in the schools.

**ITCP** – This is a software for writing text using picture icons. It also has a speech engine that supports Bengali, Hindi, Assamese, Nepali and English.

**Shikshak** – Software for e-learning.

**Sanyog** – Multi-lingual, multi-model, augmentative communication system. It also has a visual keypad. This software was developed by IIT, Kharagpur.

**Sweepsicks** – This is a virtual adaptive mouse.

**Gupshup Book** – Is a talking album, photo album and a message provider software.

The speaker spoke about displayed special switches used in the AT. The speaker wound up the speech by stating that the need of the hour is to team up with the government, technical institutes, other NGOs, industry and technologists to efficiently implement the AT for the differently abled.

**Questions:**
1. Raised by a delegate who is a vocational therapist.
   How can AT be of help children with autism and hyperactivity?
   **Answer:** Touch screens can be of great help to the autistic children and other AT methods should be tried out.
2. Raised by a delegate who is a therapist at a cerebral palsy centre in Thiruvananthapuram.
   How can IICP help the cerebral palsy centre in Thiruvananthapuram?
   **Answer:** The speaker told the therapist to visit the IICP, Kolkata. She also said that IICP is willing to provide them with training materials.

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**Speaker:** Gaurav Takkar, MediaLab Asia, New Delhi

**Title:** Technologies developed for the mentally challenged by Media Lab Asia

MediaLab Asia is an autonomous body aided by Dept of IT. They develop technology for the mentally challenged. Focus areas are health care and education and training for vocational institutes for the mentally challenged.

Technologies developed include:
- Braille in regional languages (Hindi, Bengali).
- IPCS
- Sanyog
- Large print
- Augmentation of human oriented technologies.
- Sanyog developed in association with IIT, Kharagpur.
- SAFA – Screen Access For All. This is a screen reader software available in eight Indian languages. This is freely down loadable.
- Tools for converting text to Braille.

Demo of Sanyog was also presented.

MediaLab Asia has also set up distance education centres for special teachers. Seven centres have been setup in Kerala with the hub at Cherthala. It makes use of 2 Mbps broadband connection from BSNL and the EDUSAT. The uplink is from Gorky Bhavan, Thiruvananthapuram.

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**Speaker:** Dr. Arun Mehta, JMIT Radaur, Haryana

**Title:** A strategy for educating the mentally challenged based on Free and Open Source technologies.

The talk was about developing software for children with autism, dyslexia and cerebral palsy using Free Software. Mental disabilities start early in life. An inability to communicate makes the disability worse. Computers are an excellent communication device for children with autism. But the challenge is to develop custom software for the disabled since each person's disability can be different. Also the software needs to grow with the child. AT should be usable for all ICT related activities like audio/video editing, browsing, chatting etc. The speaker envisaged a collaborative model of software development by the students of computer science and engineering.

The software should be open sourced. Because of the installation and support issues involving users in different geographies, the speaker propounds a web based solution. The user interface could be running on desktops, laptops or Internet enabled mobile phones. The project website is www.skid.org.in.

The speaker then demonstrated the **picbrowser** software developed using Ruby on Rails. The child can interface with the software using either joystick or wheel. These joysticks and wheels are made using custom game controls available in the local market. The built-in buttons in the game controllers are replaced by either joysticks, wheels, foot pedals etc.

Each Ruby on Rails module used in the software is only about 50-60 lines-of-code. Ruby on Rails was chosen for its simplicity, small learning curve and its power.
The speaker also outlined a strategy for educating the government. This includes:

- Change of attitude.
- Research and training in mechanical engineering, hardware and software.
- Institutes should be accessible to the disabled. They are the resource persons for the institutes.
- Each differently abled child should have a computer.
- Distance learning should be promoted.
- A centre for independent living for differently abled should be set up. In this centre even the faculty members should be differently abled. The speaker hoped that such a centre will help shape the policy of the government towards the differently abled.

**Questions:** Won't the ICT restrict the children being social?

**Answer:** Parental control. Software that switches off the computer after a pre-determined time.

The speaker's talk started an interesting debate if technology is the end in itself and the role of non-technological factors that shape the lives of differently abled. The majority sided with the view that the technology complements the human ability.

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**Speaker:** K.V. Johny, CDAC, Thiruvananthapuram.

**Title:** Research underway for the mentally challenged at CDAC.

The speaker then introduced the audience to the software called *Punarjani*. This is an assessment tool for teachers who work with mentally retarded children. This tool frees the teacher from time consuming activities like preparing reports, doing manual assessment etc. and thus gives the teacher more time with the children. The teacher can override the assessment data generated by *Punarjani* but then has to give sufficient reasons why the result has been overridden. The software has built-in learning capability based on the teacher's input.

The speaker also spoke about another project called *Scheme*. This project implements a virtual classroom for distance education. The project is funded by Media Labs Asia. Several distance education centres have been set up in Kerala and the teaching end is in Cherthala. It makes use of broadband connection and EDUSAT. Uplinking is from Gorky Bhavan. The satellite bandwidth is provided free of cost by ISRO.

**Questions:**

1. Availability of Scheme for other projects.
2. Is the Punarjani database free?
3. Does the Punarjani database support semantic DSS?

**Answers:**

Services of Scheme can be made available for other projects provided they provide the content to CDAC.

The database is not open because of privacy infringement violations. It has not yet been thought of how
to make the non-confidential parts of the database public. Research is being carried on the semantic aspects of the database to function as a full fledged DSS.

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**Session II – Employability of the Differently Abled.**

**Speaker:** Sachin Verma, AccessAbility, New Delhi  
**Title:** Employment Opportunities for the differently abled and the AccessAbility experience.

The speaker started off by showing the slide of the organisation's Employment Job Portal for Disabled Workers. He said that AccessAbility also offers support in screening and assessing differently abled prospective employees.

The other services offered by AccessAbility include:
- Architecture Access.
- Access consultancy.
- Trainings.
- Research.
- Entreprenuership.
  - Microfinance support.

The speaker said that the main barriers to employment of the differently abled people are:
- Family, society, peer group and self.
- Access to education, workplace, transport, cost effective assistive aids.
- Skills gaps, lack of previous work experience.
- Awareness of the society regarding disablity, policies and potential.
- Lack of resources.
  - Special recruiters.
  - Published resources.
  - Information on assistive technologies.

The speaker then spoke about the ICT areas where the differently abled could be employed.

**IT**
- programming
- Systems support
- Testing
- Training
- Network administration
- Knowledge management.

**ITES**
- BPO
- KPO
- LPO
- Medical transcription

The speaker spoke about the importance of creating the Ecosystem conducive for the employment of the differently abled. For this:
- NGOs and training institutes should focus on need based training.
Employers should be made aware of the business case in employing differently abled and what the differently abled can do. Recruiters and consultants should do the sensitisation and readiness about the differently abled. Technology vendors should work on building low cost AT and adaptations. Government should be more proactive in creating job opportunities for the differently abled.

Questions:
1. Employability
Answer:
Gave examples in areas the differently abled can find employment in the ICT sector.

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Speaker: Shanti Raghavan, Enable India, Bangalore

Title: Capacity development for the Differently Abled and the Enable India experience.
The speaker started off by showing presentation slides of some of the differently abled students of Enable India who have gained economic independence. Enable India has so far placed more than 600 differently abled people in IT, ITES and manufacturing industries. The speaker said that once the capability of the differently abled is matched with the job, then the disability vanishes. She also had some interesting examples of her experience from Enable India. She also said that the differently abled will gain true independence only when they are able to find employment on their own. Enable India gives pre-employment training to more than 400 differently abled persons annually. The speaker said that the employability depends on:
- Understanding the job.
- Understanding the candidate and the disability.
- How to facilitate the training.
- How to use effective techniques based on disability.

The following case studies were also presented:
- Telephone operator – visually impaired.
- Data entry operator – hearing impaired.
- Help desk executive – visually impaired.

The speaker stressed the importance of the prospective job seeker carrying an FAQ for the job interviews, so that the answers can be found to the questions that the employer normally hesitates to ask the disabled.

The speaker expressed her wish to try out GNU/Linux in 6 months time. Krishna Kant Mane has offered his services towards moving to GNU/Linux.

She also said that registration with Enable India can be done on the last Saturday of every month. The counseling days are the 1st and 3rd Saturday of every month.

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Speaker: **Krishna Kant Mane, TIFR, Mumbai**

**Title:** *ICT carriers and employment methodology for the visually challenged.*

The speaker continued the debate spun off from Dr. Arun Mehta’s speech reiterating the fact that technology is just a means to an end. The speaker himself is a visually impaired person. One of the qualities the visually impaired people have are their capacity for extreme concentration, said the speaker. He also said that experience has taught him that visually impaired programmers make good GUI designers. As per the speaker, programming is the best field for the suitably skilled visually impaired person. Other fields include law and journalism. The speaker being a vocal supporter of Free Software said that the only way to go forward is by using Free Software.

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**Speaker:** **Sundar R., System Operations Specialist, IBM, Bangalore**

**Title:** *Experience in the ICT sector.*

The speaker is a visually impaired alumni of Enable India and Insight. He was placed in IBM 4 months back by Enable India after having completed a course on Linux conducted by SPACE. The speaker spoke about his educational background and his indebtedness to his other visually impaired friends who induced him to learn ICT. He also spoke about his job profile at IBM, the skills required by a visually impaired person to work in ITES, recommendations on placement and the governments’ role in finding employment for the visually impaired. The speaker also lauded the efforts of Enable India on their efforts to help the differently abled.

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**Speaker:** **Binu Sankar, CEO, GTECH, Technopark, Thiruvananthapuram.**

**Title:** *Role of the corporate sector in providing employment opportunities to the Differently Abled.*

The speaker said that the social agenda of GTECH is to employ the differently enabled in the corporate sector. Towards that end the skills sets of differently enabled in Kerala have to be understood. GTECH had already held meetings with other companies in Technopark regarding employing the differently abled. He said that at present they were looking for opportunities for differently abled in the BPO sector at Technopark. He also said that what we need to explore in Kerala is a model that combines the corporates, NGOs and the government on how to employ the differently abled.

**Questions:**
Is GTECH looking into employment opportunities in the field of programming and server side
administration?
Answer: Not yet.

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**Speaker:** *Dr. Ratan Kelkar, IAS, Director KSITM*

Dr. Kelkar spoke about what he would have missed if he would not have sat through the whole proceedings. He was happy about the enthusiasm and the involvement of the speakers and delegates and the brainstorming sessions that ensued out of the conference. One of the accusations that most of the speakers and delegates raised was about the governments’ apathy regarding the differently abled. Dr. Kelkar tried to dispel this view saying that the Insight project is itself an initiative by the Kerala State IT Mission. He also spoke about the future plans of KSITM for the differently abled. He also told the delegates the importance of working together with the government, since it is the people who elect the government.

**Speaker:** *Arun M., Special Officer FOSS, KSITM*

**Title:** *Closing remarks & vote of thanks.*

Arun spoke briefly about the Insight project. Insight has so far trained 66 visually impaired persons so far. Insight also plans new nodal centres of Insight in various parts of the state. Phase I of the Insight project was targeted towards the visually impaired. Phase II will be targeted towards the mentally challenged and people with physical disability. The Insight project plans to work closely with Enable India and AccessAbility regarding the employability aspect of the differently abled. Arun confirmed Kerala Governments’ continued support for the programmes for the differently abled.

**Prepared by Raj Mohan**

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