

**International Telecommunication Union  
Workshop on Accessible ICT for persons  
with disabilities**

**Kathmandu, Nepal  
9 November, 2012**

**Improving Access to Information and  
Communication Technology**

**for**

**persons with disabilities**

**in**

**Developing Countries**

**by**

**Birendra Raj Pokharel (Mr.)**



# Fundamentals of Accessible Technology



*Access creates opportunity for every one*

- Essential to PWDS for development and empowerment
- Promote equality, non-discrimination and participation
- Technologies promote inclusion and minimize barriers
- Access to information is a fundamental human right
- Newly developed I T must address needs of PWDS
- Latest technology is outreached to PWDs of developing countries

# RIGHTS TO ACCESSIBLE I C T TECHNOLOGY BY CRPD



- CRPD adopted by 61st session of UN General Assembly
- Preamble mentions for recognizing the importance of accessibility
- To the physical, social, economic and cultural environment
- To health and education
- To information and communication
- In enabling PWDS
- To fully enjoy all human rights and fundamental freedoms

# Articles addressing I C T



- Article 2 – definition of communication
  - Underlying the accessible I C T
- Article 4 - General obligations
  - To undertake or promote research and development
  - To promote the availability and use of new technologies
  - Including I T C
  - Mobility aids, devices and assistive technologies,
  - At an affordable cost

## Article 9 - Accessibility (Particularly 2 f, g, h on I C T)



**To this end, States Parties shall also take appropriate measures to:**

- (f) Promote other appropriate forms of assistance and support to PWDs to ensure their access to information;
- (g) Promote access for PWDs to new ICT and systems, including the Internet;
- (h) Promote the design, development, production and distribution of accessible ICT and systems at an early stage, so that these technologies and systems become accessible at minimum cost.

## 3. I C T AN ENABLING TOOLS FOR PWDS



### **Many PWDs use a computer with adaptive technology**

- To surf the Web, either by using screen reader or Braille displays
- People with quadriplegia can independently read by Voice recognition software
- Persons With Visual Disability participate in E-Commerce by using screen reading software and a Braille display
- Hearing Disability easily communicate anywhere by using Internet chat software such as ICQ.
- Developed several means of I C T modules

## 3.1 Access to Electronics Books



- Electronics Books has huge interest to Blind and print disabled persons
- Less than 5% of books are only in accessible format
- Google has taken initiatives by adding hidden link in E-Books
- Links in Full view exposes to screen readers
- However, the OCR errors create difficulties for reading the text.

## 3.2 Web Accessibility



- The Internet, for PWDs become most comprehensive educational
- Employment and recreational resources
- The benefit by web as an enabling tool is dependent
- Web page with entire graphics and image map are incompatible to screen readers
- The enhancement of the graphics and image maps with text alternatives is necessary
- The web authors are recommended for W3C test for ensuring web accessibility.
- (For more details, please visit [www.w3c.org](http://www.w3c.org))



# 3.3 Digital Accessible Information System (DAISY)



- The DAISY specifications are transforming the reading and learning experiences
- The DAISY Consortium is working to making DAISY books available worldwide.

## 3.3.1 DAISY benefits all

- Print Disability

## 3.3.2 DAISY Standard

- The data in the digital format can be stored and produced in many different formats
- Alternative material adopted standards for production and storage
- Reading materials in E-text or audio recording format are called DAISY Standards
- All published information is available at the same time and no
  - extra cost in an accessible
  - feature-rich
  - Navigable format.

## 3.3.3 DAISY Digital Talking Books



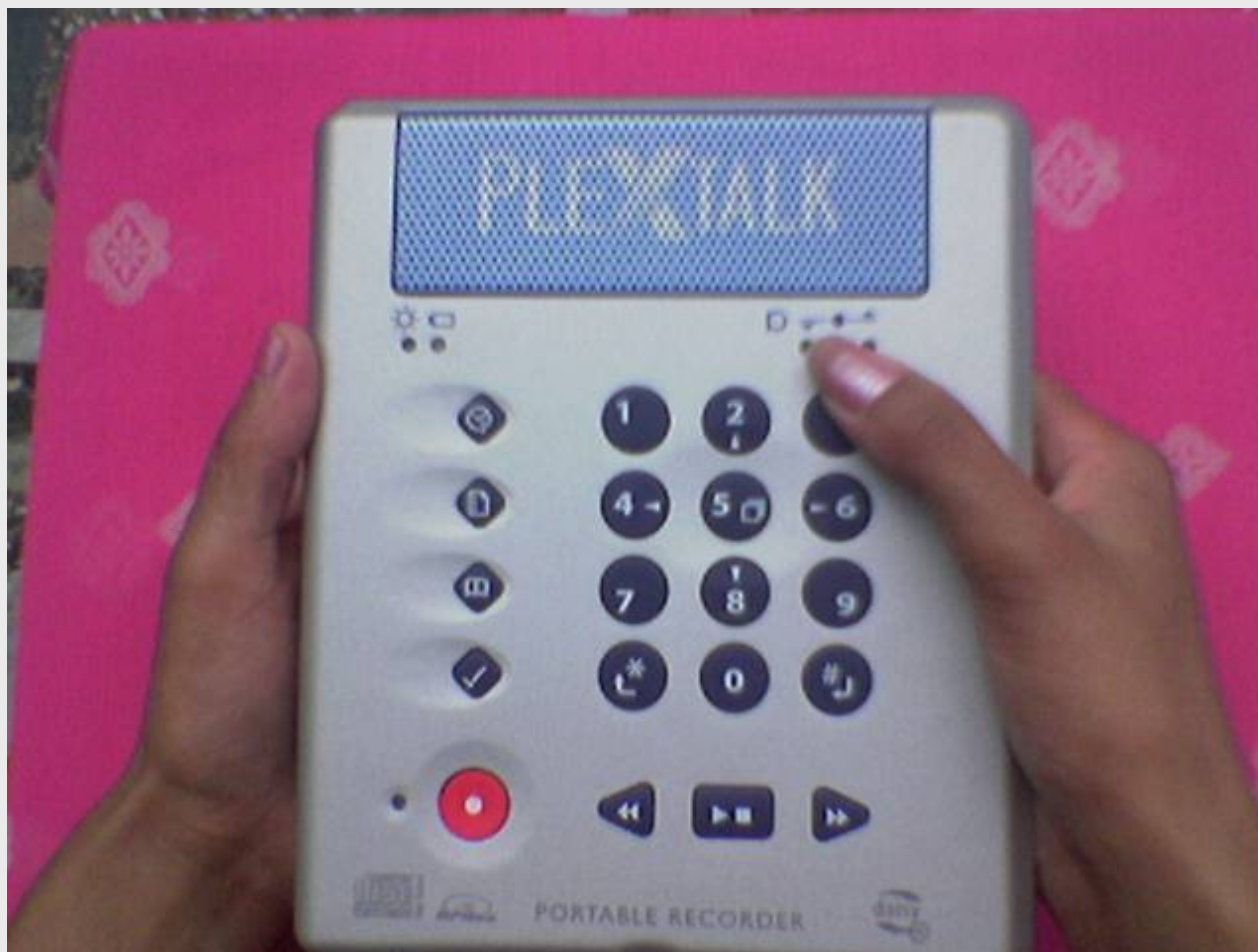
- DTB is a multimedia representation of a print publication
- Sequential synchronization of various media types;
  - Audio,
  - Text and
  - Images.
- 6 types of DTB available.

## 3.3.4 Production and Playback tools of Daisy DTB



- Adaptive technology tools for production of DTB
- The hardware interfaces
  - ‘Audio only book’
- The software in a PC
  - Full features DTB.
- Books in xml can be turned into Braille format
- This file could also be read using screen reading software
- Can also be Produced as a ‘Full text full audio’ synchronized Digital Talking Book.
- Nepali TTS is necessary for local language

# Nepali hands using The hardware interface for DTB Production



# The Daisy DTBs Playback interfaces



- Variety of hardware and software players available
- Latest hardware interface is portable
- Wide range of software players available
- Provide a customizable user interface
- Adaptive Multimedia Information System
- AMIS is the open source software
- Available in local languages

# Playback of DTB by Victor Reader



## 3.3.5 Initiative of DAISY Expansion



To promote DAISY ,DFA supported

- Production unit has been established in PN campus by KAB serving as National Digital Library
- Strategy of capacity building in Rural community
  - Supporting the global sharing of human knowledge in the information society.
  - The expansion of Regional Support Center and Focal Points
- National DAISY implementation plan that will serve to the Person With Visual and print Disabilities
- DTB can be linked with E-POP and made available in Mobile for Blind and Persons with Print disabilities

# Establishment of DAISY Focal Point in Nepal





## 4. CONCLUSION



- Research for The development of accessible formats should be done
- Should be usable by all people to the greatest extent possible
- Promote living independently and participate fully in all aspects of life by use of ICT.
- Development and adoption of I C T usable both in urban and rural areas
- The countries sign and ratify the convention and
- Formulate National implementation plan
- Ensure best implementation of the convention.

# Gratitude



– Thanking for your attention