Making ICT and mobile phones accessible for persons with disabilities in Nepal

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Introduction

- Over a billion people in the World living with a disability according to the World Disability report

- Nepal's population of 28,951,852 comprises predominantly young persons who can benefit from access to the information society.

- Low penetration of fixed landline (3.15%) and mobile phones (57.06%) indicate clear need and potential for increasing access to telecommunications services, especially amongst rural and marginalised communities.

- International precedence prompts inference that persons with disabilities in Nepal are also mostly living below the poverty line and hence there is a need for affordable accessible solutions.

- Developments in ICT make access to ICT possible and deployable for persons with disabilities.

Objectives

- To examine the prevailing level of ICT and telecom access for persons with disabilities in Nepal

- To showcase examples of good policy and program initiatives in the area of ICT and telecommunications accessibility.

- To identify gaps and opportunities in the existing policy and program framework for enabling accessibility to ICT

- To provide recommendations to the Government of Nepal to implement the ICT dispositions of the UNCRPD and its optional protocol

- To propose suitable policy and project templates to facilitate easy adoption

- To promote the RTDF as an ideal resource for funding accessibility related projects

- To facilitate access to the information society for persons with disabilities in Nepal

Scope

- This report covers implementation of ICT accessibility in different domains and across government activities through policy and projects

- It is based on information and materials available in the public domain on the internet and in English

International Frameworks: UNCRPD

- Art 4- specific mention of ICT accessibility in States Parties obligations

- Art 4 (g)- obligation to undertake and promote R&D and deploy accessible ICTs, aids and assistive technologies at affordable cost

- Art 4(h)- disseminate information to persons with disabilities about accessible ICTs, Assistive technologies, aids and other disability related resources

- Art 5- recommends reasonable accommodation

- Art 9- explicitly deals with accessibility of physical environment, transportation, information and ICTs

- 9.1.b- obligation to remove obstacles to accessing ICT and electronic services and emergency services

- 9.2.b- promote provision of accessible services by private sector providers

- Art.9.2f- Other forms of assistance to ensure access to information

- Art 9.2.g- promotes access to new ICTs, including the internet

- Art. 19- promotes Assistive technologies for independent living

International Frameworks: UNCRPD

- Art 24- calls for enabling education through use of assistive technologies reasonable accommodation and other accessibility requirements

- Art 26- Assistive technologies for rehabilitation

- Art 27- promotes inclusive environment and reasonable accommodation in the workplace. Art 21- promotes freedom of expression and opinion and access to information through use of assistive technologies and alternative forms of communication such as Braille and sign language

- Art 29 on political rights promotes accessibility requirements and assistive technologies

- Art 30- lays down that cultural materials, TV, leisure and sport must be accessible

- Art 31- obligation to collect statistics and data in an accessible manner

- Art 32- provides for international cooperation for accessibility and sharing of assistive technologies.

International Frameworks: Biwako Millennium Framework

- Promotes policy in the countries in the Asia Pacific region to foster inclusive, rights based and barrier free societies for persons with disabilities

- Framework specifies 9 principles/ policy directions, one of which is Universal Design

- Framework identifies 7 priority areas for action, one of which is access to ICTs

What is Accessibility?

- Physical and ICT accessibility
- ICT accessibility- hardware, software, websites and content.
- Universal Design- design of a product to be usable by all without adaptation.
- Reasonable Accommodation- necessary and appropriate modifications without undue hardship to enable equal access by persons with disabilities.
- Assistive Technology- in this report means technologies enabling access to ICT.

Accessibility Standards

- WCAG 2.0- perceivable, operable, understandable, robust
- Mobile accessibility guidelines
- DAISY
- Unicode
- ITU standards in telecommunications accessibility

Mobile Accessibility Features

- Examples of accessibility features by type of impairment they address

- Hearing
  - Visual alerts to notify the user of incoming calls/messages
  - Adjustable volume control
  - Call logs to display missed, received or dialed calls
  - Visual or tactile indicators showing what has been pressed on the keypad, and visual display of text
  - Text based messaging options
  - One on one video for sign language communications

Mobile Accessibility Features

- Vision
  - Tactile markers to help orient fingers on the keypad
  - Audible/tactile feedback to confirm button being pressed
  - Audible cues for low battery, caller waiting or ending a call and volume level
  - Display - larger size with back lighting, adjustable font sizes and adjustable brightness/contrast controls
  - Scanner and OCR and Text to Speech
- Speech
  - Alternatives to speech such as Text Messaging/SMS , Email, Instant Messaging ,Multi-media Messaging
  - Predictive Text
  - Video one on one for sign language

Mobile Accessibility Features

- Dexterity
  - Ability to use the phone in 'hands-free' mode
  - Any key call answer
  - Voice recognition for dialing or accessing phone features
  - Phone designed to avoid extra movements e.g. a candy bar design to avoid sliding movements, flat back on the phone to allow for operation on a table top
  - Optional accessories such as a Bluetooth headset or keyboard making texting and talking much easier

- Cognition
  - Simple, easy to understand menus and instructions
  - Providing enough time for people to enter the required information, keys providing audio, visual and tactile feedback
  - Ability to associate photos with telephone numbers

Mobile Accessibility Features

- Illiteracy
  - Icon Menus
  - Audible or tactile feedback to confirm a button has been pressed
  - Call answered by pressing any key
  - Ability to associate photos with telephone numbers
  - Keypad shortcuts to make every step quick and efficient
  - Voice recognition for dialing or accessing features within the phone
  - SMS to Avatar translation for deaf illiterate (Tunisia)

Mobile Accessibility Services

- Digital Libraries
  - Bibulio-net in Japan (distributed by NTT-DoCoMo) Access to a network of talking books (12,395 titles as of March 2009) with an integrated DAISY player

- Relay Services
  - human operated services for media and mode translation during phone conversations, typically community supported
  - Important for accessible telephone services
  - 4 types – Video, text, speech-to-speech, captioned speech
  - Integration has several prerequisites such as relay services working wih commonly available handsets, users should have the choice to invoke relay services when calling/receiving calls

Mobile Accessibility Services

- IM relay
  - IM Relay is a text-based solution for individuals who are deaf, hard-of-hearing, or have speech loss; offered by AT&T
  - To relay with one-step dialing, users send the phone number they are calling via instant message to a screen name "ATTRelay." An AT&T Relay operator calls the phone number and translates the text to voice to the other party. There is no charge to use this service, but users must register.
  - Can be used on PCs as well as many mobile devices

- Server based voice dial and voice info
  - assist customers with limited ability to dial a number with a keypad
  - allows the user to maintain an address book and by pressing #8 to either ask to dial any number, or to call someone in their address book by saying their name.
  - Voice Info gives access to a number of practical information from weather forecast to travel info or general news.

Mobile Accessibility Services

- Path Finding - iWalk (AT&T)
  - Walking Directions for People with Low Vision or Blindness who cannot use navigation tools that rely on visual landmarks, iWalk is a navigation service that provides directions and feedback verbally.

- Emergency Phone services
  - Telecom regulatory authority needs to set standards for emergency services to be implemented by operators and public services which will allow persons with disabilities to
    - call emergency services, use a common regional emergency number and have an efficient emergency call that rapidly results in suitable action
    - use the same conversational terminal for the emergency call that they use for everyday calls and communicate in the modes and media they use in everyday calls.
    - get relay services included in the call if wanted/required

Mobile Accessibility Services

- Customer Services
  - Some companies whose customer services take into account the needs of persons with disabilities include NTT DoCoMo, Orange and AT&T
  - AT&T –
    - has a National Center for Customers with Disabilities where all customer services representatives are specially trained to understand the specific needs of customers with disabilities
    - Uses specialized wireless assistance (through direct voice, TTY, and e-mail) to help customers with disabilities who have accessibility and usability questions
    - Representatives are also given special training on hearing aids, TALKS phone, voice dialing, and TTY
    - Interfaces with the communication medium of choice of customers with disabilities. It may be a live text exchange, a mini-video relay call or a TTY call. All 34 customer service representatives have been trained to handle any and all of those situations.

Mobile Accessibility Services

- Example of easy to use mobile phone - NTT Docomo's "Raku-Raku" mobile phone has many accessible and assistive features and services
  - A large screen with large characters
  - Dedicated buttons to call certain pre-recorded numbers automatically
  - "Read aloud" menus and text
  - Voice input text messages and email
  - Access to a network of talking books (Bibulio-net, 12,395 titles as of March 2009) with an integrated DAISY player

Accessibility Policy: Best Practices

- Countries around the world have adopted different approaches to disability rights and accessibility:
  - In the form of a general mandate to ensure equality and non discrimination e.g. Australia, New Zealand, Italy, Canada
  - or through specific provisions which promote ICT accessibility e.g. USA, Germany, Korea
  - Some countries (e.g.New Zealand, Italy, Korea) only cover web accessibility while others cover electronic accessibility (e.g. Germany)
  - In some countries like Canada accessibility provisions only apply to public entities whereas others like the UK have made accessibility provisions apply to both private and public entities

- USA and UK have made separate provisions for ICT as well as telecommunications accessibility

Accessibility Policy: USA

- Federal laws, policies and guidelines

- Section 508 (apart of the Rehabilitation Act of 1973)
    - requires that electronic and information technology developed, procured, maintained, or used by the federal government be accessible to people with disabilities

- Assistive Technology Act of 1998:
    - supports programs of grants to States to address the assistive technology needs of individuals with disabilities; Article 104 caters to the scope of technical assistance and the establishment and maintenance of a National Public Internet Site for this purpose
    - Promotes Universal Design

- Sections 255 and 251(a)(2) of the Communications Act of 1934
    - require manufacturers of telecommunications equipment and providers of telecommunications services to ensure that such equipment and services (such as telephones, cell phones, pagers, call-waiting, and operator services) are accessible to and usable by persons with disabilities, if readily achievable

- Accessibility Guidelines under the Communications Act of 1934 as amended by the Telecommunications Act of 1996:
    - provides guidelines for accessibility, usability and compatibility of equipment covered under the Telecommunications Act 1996.

- Americans with Disabilities Act (ADA)
    - requires covered entities to furnish appropriate auxiliary aids and services where necessary to ensure effective communication with individuals with disabilities(includes the internet) It also requires that State and local governments give people with disabilities an equal opportunity to benefit from all of their programs, services, and activities

Accessibility Policy: UK

- Legislation, Guidelines and Plans

- Equality Act 2010

  ➢ Generic Anti-discrimination legislation, makes provision for web accessibility

- The Statutory Code of Practice 2010: Accessible information

  ➢ seeks to prevent illegal action in the first place by outlining good practice

- BS 8878:2010: British Standards Institute

  ➢ Accessibility Guidelines applicable to both public and private agencies

- e-Accessibility action plan – Department for Culture, Media and Sport (DCMS)

  ➢ aimed at making ICTs more accessible and covers regulation, accessible consumer technology and digital equipment, website services, accessible content, and awareness and promotion. Applicable to any Service Provider (includes any site which provides service to the public, including the private sector)

- Mobile Industry Good Practice Guide for Service delivery for Disabled and elderly customers in the UK

  ➢ guidance on good practice , guidelines that the UK mobile industry can use to raise awareness of this good practice guide and what disabled and elderly customers should expect from their mobile provider

Universal Access/Service Obligations

- Examples of accessibility programmes and policies under universal access obligations
  - Australia – designated USP, obligation to provide standard telephony to all citizens and make accommodation for Persons with disabilities where necessary
  - India – US Administration/selection of USP by bidding, obligation to provide affordable access to all people in rural areas- interpreted to include special schemes for the disabled
  - USA – organisation setup, projects include Access to media publications, Relay Service, ICT projects for schools, Loans/subsidies programme for purchase of assistive technologies
  - Kenya – USP organization setup, Projects include ICT for People with Disabilities project: ICT centres in special schools, Accessibility web portal

- Monitoring and implementation-
  - Ireland, Access Board
  - USA - Telecom- Regulator facilitated signing a voluntary charter between industry and NGOs
  - UK - voluntary good practice guide
  - Sweden - Total Standard has been implemented.
  - Sri Lanka – regulator mandated provision of accessible emergency services in the License terms

Open Source Assistive Mobile Technologies

- Open source screen readers available for many platforms
  - Open Screen readers for Android include Talkback for Android, Spell, Eyes Free Shell, Mobile Accessibility
  - Voice Over for Apple iPhone and iPad
  - Mobile Speak for Windows 6.5 and earlier
  - Mobile Speak and Talks are screen readers for Nokia / Symbian / Anna / Symbian ^3 phones
  - Oratio and Blackberry screen reader for some Blackberry phones

Nepal: Suggested Approach

- NTA-
  - bring out a consultation paper/ report on the needs of enabling telecommunications access for the disabled and available options covering technologies, services and best practices
  - Hold consultations with different stakeholders to get their opinion and accordingly formulate a policy instrument to take this forward
  - Consider regulatory measures such as inclusion of mandatory accessibility requirements in license terms of service providers and criteria of acceptable service quality

- Since the lines between different ICTs and platforms are thinning, NTA could work with Ministry of Environment, Science and Technology to jointly bring out a policy covering ICT and telecommunications accessibility which is applicable to the government and private sector.
  - The policy could cover core accessibility principles which cut across all technology domains such as principles of universal design and reasonable accommodation, as well as accessibility requirements which are domain specific such as accessibility of websites, content, ICTs and telecommunications.
  - The Government could be chiefly responsible for promotion and adoption of ICT and telecommunications accessibility across all processes.

Nepal: Proposed Policy Objectives

- The proposed policy could have the following objectives:

  - To create an accessible ecosystem of information, ICTs and telecommunications products and services for persons with disabilities in Nepal

  - To make information technology and telecommunications available and accessible to persons with disabilities at affordable cost

  - To develop and implement accessibility standards for websites, ICTs and telecommunications products and services

  - To build an inclusive knowledge based society

  - To harmonize national electronic accessibility standards with those recognized internationally.

  - To create the framework to fulfill Nepal's obligations under the UNCRPD and its optional protocol, as well as other international instruments to which Nepal is a signatory

Nepal: Key Strategies

- The policy could identify the following key strategies:
  - Drawing up a road map with targets and milestones to be achieved over the next five years
  - Raising awareness about accessibility barriers and solutions amongst government agencies and the private sector
  - Integrating accessibility into existing projects and creating specialized programmes relating to accessibility
  - Providing training to make ICT accessibility sustainable in the government
  - Identifying funding opportunities to promote ICT and telecommunications use for persons with disabilities in urban and rural areas
  - Framing schemes and incentives to foster ICT and telecommunications use amongst the disabled

Nepal: Key Strategies

- ➢ Encouraging the private sector to voluntarily integrate accessibility into
  their processes and take up accessibility related initiatives;
- ➢ Promoting the development and integration of persons with disabilities in all walks of life through the use of ICT and telecommunications
- ➢ Funding the development of low cost or open source assistive technologies in local languages for persons with disabilities
- ➢ Participating in standards setting processes of international organizations
- A detailed action plan could be drawn up to implement the policy strategies
- A focal point/ committee comprising members from the two ministries could be set up to oversee the implementation of this policy

THANK YOU!