

On Localization, Natural Language Processing Tools and Use Models of Technology for Increasing ICT Use in Rural Nepal

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Major Localization Projects and Initiatives in Nepal

- Font Standardization Project supported by UNESCO
 - Nepali Unicode Drivers, Unicode compliant fonts
- PAN Localization Project, supported by IDRC, Canada.
 - NepaLinux, OpenCD, Localization of hand held devices, Spell checker, Nepali Computational Grammar Analyzer, Internationalized Domain Names, Optical Character Recognition, Parallel Corpus, Parts of Speech Tagger, Parts-of-Speech Tagset, Stemmer and Morphological Analyzer, Language Packs for Linux Distributions, Font converters
- Bhasha Sanchar, supported by the European Union
 - Nepali Monolingual text corpus , Spoken corpus, Speech corpus, Parallel corpus, Fonts, Text-to-Speech, Corpus based Nepali dictionary, Computational & Corpus Linguistics course at Central Department of Linguistics, Tribhuvan University.

Major Localization Projects and Initiatives in Nepal...

- Microsoft Windows/Office Language Interface Pack, supported by Microsoft
- Dobhase, English to Nepali web-based Machine Translation System, supported by PAN ICT R&D.
- One Laptop per child program (OLPC) and the current OLE as a continuity to the program.
- Ubuntu Localization, Sahana Localization – Open Technology Resource Center (OTRC), FOSS-Nepal.

Major Localization Projects and Initiatives in Nepal...

- Nepali Wikipedia
- Midas EduKit
- Localization of Content Management Systems
 - Joomla, Drupal
- More recent Developments
 - Big software giants like Google and Microsoft focusing on the Nepali language.
 - Localized applications continue to be developed for different platforms on an individual basis
 - Transliteration applications, Keyboard software, Conversion systems, Game applications

Combining the strengths of Localization and Natural Language Processing

- Localization involves:
 - Developing/customizing any software application as per local and cultural needs
 - Translating the UI and other system terminologies of any application into the local language
- Natural Language Processing goes one step further, it enables the machine to generate and understand the local language.

Combining the strengths of Localization and Natural Language Processing

- Some typical examples:
 - SMS reader for mobile phones (localized interface together with text-to-speech application)
 - In-built spell checkers in word processors (spell checker with localized word processor application)
 - Digital Archiving Systems and OCR systems
 - Localized E-gov portal with regular services:
 - Citizenship card issuance
 - Passport issuance/renewal
 - Driving license issuance/renewal

Use Models of Technology

- How do we ensure the use of the developed technology?
- How do we tie technology's use in our daily lives?
- Technology should be designed and developed keeping into consideration the motivations for use.
- The bottom line – “People use technology if they feel its use, its benefits, its impacts”

Use Models of Technology...

- Lets revisit the examples on slide 6
 - SMS reader (unintegrated)
 - Mobile phones with regular SMS service (standalone)
 - Text-to-Speech Application (standalone)
 - Word processors with spell checkers (unintegrated)
 - Word processors (standalone)
 - Spell checkers (standalone)
 - OCR systems and digital archives (unintegrated)
 - Digital archiving system (isolated)
 - OCR systems (isolated)

Some thoughts on combining the all three: Localization+NLP+Use Models

- Need to note – Localization and NLP are not hot cakes which would be readily consumed
- They have to be associated with some Use Models
- Lets take an example of a deployment X:
 - Some questions to consider:
 - Is there a direct connection between the deployment and daily use? For example, use of X for teaching learning and other activities of daily use.
 - Is the technical\financial support required for X locally manageable and available?
 - How closely is the community attached with X? Sense of ownership
 - More importantly, do the community people see the prospects of the sustained and continued use of X?
 - The last but not the least important point: “It is the community people who would need to take up the sustainability and support of X, not you or anybody else.”

Thank You

Questions